MONASH OPEN SPACE STRATEGY IMPLEMENTATION PLAN

AND

PUBLIC OPEN SPACE CONTRIBUTION RATE

October 2021

City of Monash

CONTENTS

EXECUTIVE SUMMARY

Background

The Monash Open Space Strategy 2018 has been updated in response to matters raised and changes recommended by the Panel Report on Monash Planning Scheme Amendment C148 and significant State initiatives affecting Monash such as the Suburban Rail Loop (SRL), the Monash National Employment and Innovation Cluster (MNEIC) and the increased population, both resident and worker, forecast for the municipality.

The strategy establishes priorities for open space planning, identifies and estimates costs of future capital works improvements and future strategic land acquisitions for open space to meet the needs of the future population of Monash. This report also sets out the process for the calculation of a new public 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.

This report provides an analysis of open space contribution requirements for the City of Monash based on existing open space infrastructure, the location and forecast rates of growth and development density likely between 2021 and 2036. This allows for a consideration and justification of implementing a new open space contribution rate for developments that create three or more new lots in the City of Monash, and an assessment of the most appropriate rate to apply. This will ensure that new development, which brings significant numbers of new residents and workers, makes an appropriate contribution to meeting their open space needs.

Population trends

The City of Monash is projected to experience steady population growth between now and 2036. Understandably, this growth with not be distributed uniformly across Monash due to zoning constraints, locational preferences of business and residents, infrastructure quality and location and other State policy drivers.

At 2036, the City of Monash is expected to be home to 248,930 residents, an increase of over 40,000 on 2021 figures. The worker population is expected to grow from 144,478 by an additional 39,000 jobs, the vast majority in the health, professional, scientific and technical services areas and located new or redevelopment in the Monash National Employment and Innovation Cluster.

Dwelling and population change 2021 to 2036				
	2021	**2026**	**2031**	**2036**
Total population	207,530	221,230	234,750	248,930
Total households	75,240	80,910	86,640	92,720
Household size	2.69	2.66	2.64	2.62
Total dwellings	77,650	83,850	89,520	95,610
Occupancy	96.9%	96.5%	96.8%	97.0%
Source: VIF 2019				

This growth will continue to create greater pressure on existing open spaces. Without funding for new open spaces and significant improvements to existing open space, there will be a reduction in the

open space provision across the Municipality to meet the growing need and increasing demand. We will continue to provide less open space for residents to use and fall further behind other Municipalities who have or are moving to address this issue within their Municipal boundaries. It is anticipated and expected that the community will continue to seek opportunities to recreate in open space areas, and Council will need to find ways to meet the growing need.

In a regional context, the Eastern Metro-Land Use Framework Plan forecasts that Monash will accommodate 32% of the population growth in the eastern region. Given the significant investment in the Suburban Rail Loop and growth in jobs in Monash, this forecast may be slightly conservative.

LGA	VIF2019 DWELLINGS		INCLUDING 70/30 DWELLINGS	70/30 DWELLING REDISTRIBUTION	SHARE OF REGIONAL REDISTRIBUTION
	2021	2036	2036		
Knox	64,200	75,600	76,300	700	14%
Manningham	49,600	57,800	58,400	600	12%
Maroondah	48,500	58,300	58,700	400	8%
Monash	74,100	91,300	92,900	1,600	32%
Whitehorse	72,800	89,000	90,400	1,400	28%
Yarra Ranges	62,600	73,300	73,600	300	6%
Eastern Metro Region	371,800	445,300	450,300	5,000	100%

Source: DELWP, 2021

In addition to the overall population growth it is forecast that an increasing proportion of this housing growth will be concentrated in and around the main activity centres and transport hubs such as those at Clayton, Glen Waverley and Oakleigh. Incremental growth through medium density housing development is expected to continue as it has, including through a predominance of dual occupancy type development remaining the most common form of redevelopment.

This higher density development provides little, beyond a minimal area of private open space for each dwelling, and the opportunity to meet any of the basic social, family or recreational needs that were traditionally met on a 700m2 suburban lot. The demands on open space as a result from these developments will continue.

The forecast population growth and the increasing proportion of new dwellings and population growth being provided in various forms as well as in higher density developments provides further justification for the implementation of an appropriate open space contribution rate to improve existing and acquire new open space areas.

Open Space Provision Standards

The Monash Open Space Strategy 2021 identifies that open space should be provided within **400m of every residence** in the municipality, giving consideration to barriers that may restrict or prevent access to open space.

Open Space Services

'Services' refers to a combination of the quantity and quality of open space. ***Higher quality open spaces deliver a greater amount of open space services to the local community than low quality open spaces of the same size.*** Higher quality open spaces can include increased infrastructure, more durable materials and surfaces and an overall higher carrying capacity or intensity of use per square metre than the more traditional suburban parks that typically exist throughout the suburbs of Monash.

The aim in the provision of open space services becomes one of increased land and investment in open space that increases the intensity and diversity of uses that can occur there.

In an established area like Monash, it is difficult to ensure that significant additional land for open space is provided. Delivering Open Space Services, through a mix of strategic land acquisition and improvements and upgrades to existing open space, is a more practical approach to open space planning and provision. Fundamentally, not just the amount, but the quality of open space will serve the need.

Calculating open space requirements

The calculation of open space contribution requirements is founded on three key principles

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 to provide open space. *(It is noted that this "inclusionary" approach was endorsed by the Panel hearing Monash Amendment C148.)*
2. All residents/workers (existing and future) of the City of Monash are entitled to enjoy access to a reasonable standard of open space at a given horizon year, and planning for future open space acquisitions and upgrades should seek the most equitable distribution of open space services across the City.
3. An inclusionary requirements approach means that all new development should equip itself with sufficient open space to meet its needs as indicated by open space service standards and it likely demand for open space services. This contribution can be through land or cash in kind contributions.

The inclusionary requirements frame is driven by a required open space service standard of open space services, which is in turn determined by appropriate service planning standards.

Step 1. Open Space Service Standards

The first step in determining open space contribution rates is to refer to the established an open space service standards of the Monash Open Space Strategy. The adopted service standard is

arrived at from a combination of appropriate service provision standards including distance to open space, the role of open space, infrastructure and improvements required to meet future community needs. These factors allow the development of a "budget or basket" of land acquisitions and physical improvements and infrastructure requirements to meet open space service standards for the future needs of the overall community. This overall budget of open space improvements is then used as part of the calculation of the open space contribution. This has been assessed on Precinct by Precinct basis and then aggregated to a total value.

Step 2. Open space and infrastructure required for future population

The second step identifies the appropriate proportion of open space requirements from Step 1 attributable to the needs and demand generated by the future population within the City of Monash. This is based on achieving the service provision standards to meet the needs of the future population. This is determined based on population growth, population distribution, forecast dwelling type, forecast open space utility to the new population, proximity to existing open space, the service standard provided by existing open space and infrastructure improvements required to meet the service standards for the new population. This has been assessed on Precinct by Precinct basis and then aggregated to a total value.

Step 3 N**et developable land for growth**

The total net developable urban area (net developable land) required to accommodate that forecast growth is then estimated using property development history, planning policy, zoning provisions and forecasts of future development activity to arrive at a net developable land area likely to be required to accommodate the forecast population increase. The value of that area of land is then calculated to provide an overall value for the development area.

Calculating the Open Space Contribution

The value of the of open space improvements apportioned to the future community is then divided by the total net urban land area (developable land) to accommodate that growth.

This leads to an open space contribution rate of 10 per cent for all commercial, residential and industrial land uses within Monash. This is quantified in **Error! Reference source not found.**.

Item	Metric	Value
A	Cost of open space improvements and additions apportioned to forecast population growth to 2036	$606,802,563
B	Value of net developable land to accommodate forecast growth	$4,585,285,670
C	Open space contribution requirement from new development as a % of total site value (A divided by B = C)	10 per cent**

**The figure is actually 13.23% but has been rounded down.

Recommendation

This inclusionary requirements approach is founded on the principle that all development must equip itself to meet an open space standard, and is intended to ensure equitable access to open space across the whole municipality.

An open space contribution rate of 10 per cent of the future development land value is recommended to in order to deliver a reasonable standard of (improved or additional) open space provision to meet the needs of a growing population in accordance with the service standards of the Monash Open Space Strategy. This contribution rate reflects the need to ensure that all residents in the future (2036) have access to an appropriate and acceptable level of open space directly related to an increasing population and need. It will also ensure that the current continuing shortfall in the provision in open space does not continue to occur.

Council's existing open space contribution rates as specified in Clause 53.01, which remain unchanged from the standard rates within the upper limit of the Subdivision Act 1988, which were derived from the principles of Victorian Local Government Act 1958. The pattern, type and intensity of development have changed significantly since this time, and there is a strong basis to create an open space contribution scheme that more closely matches and responds to this considerable change. In essence, they are an antiquated and arbitrary range of percentage contributions that were certainly more appropriate when traditional suburban subdivision densities were occurring such as when Monash was first converted from orchards and paddocks and the early incremental infill development scattered throughout Monash.

It should not be forgotten that this time, population and house sizes were smaller, and residential blocks were much larger featuring more expansive backyards. It was certainly a different time, with lower densities, larger areas set aside for open space, and certainly not the intensity of redevelopment of scale, and certainly the absence of State planning consolidation and intensification policies such as Plan Melbourne and pressure for infill development as opposed to urban sprawl. As the Municipality continues to grow, change and develop so should the way we collect and provide for open space. The current rates in no way reflect and respond to the need for open space provision in the Municipality today.

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 that new development contributes to funding 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 consider 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 consider funding the 50 per cent shortfall in open space costs in order to deliver open space. The 10% is not merely reflective of a contribution amount to be levied on new development. It is the amount that would enable Council to keep pace with what is needed to be provided/improved to keep pace with the amount of development and population growth that is occurring. A failure to provide/improve open space at this rate would mean that Council would fall further and further behind in the provision of its open space to meet the demand that is being created.

1. INTRODUCTION

1.1. Background

The Monash Open Space Strategy 2018 has been updated in response to matters raised and changes recommended by the Panel Report on Monash Planning Scheme Amendment C148 and significant State initiatives affecting Monash such as the Suburban Rail Loop, the Monash National Employment and Innovation Cluster and the increased population, both resident and worker, forecast for the municipality.

The strategy establishes priorities for open space planning, identifies future capital works and future open space requirements. It also sets out the process for the calculation of a new public 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.

The current open space contribution rates set out in the Schedule to Clause 53.01 of the Monash Planning Scheme are:

TABLE 1: 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, 2021

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 8 financial years, Monash City Council have collected between $2 and $9 million in open space contributions per year. These are summarised in table 2.

Financial Year	Open Space Contributions collected
2020-2021	$11.1 million*
2019-2020	$9.590 million*
2018-2019	$7.3 million*
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, 2021

**Note: 2018 to 2021 contributions included Sky Garden, The Glen and M City.*

1.2. Purpose of this report

This report provides an analysis of open space contribution requirements for the City of Monash based on existing open space infrastructure, the location and forecast rates of growth and development density likely between 2021 and 2036. This allows for a consideration and justification of implementing a new open space contribution rate for developments that create three or more new lots in the City of Monash, and an assessment of the most appropriate rate to apply. This will ensure that new development, which brings significant numbers of new residents and workers to Monash, makes an appropriate contribution to meeting their open space needs.

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

2. POPULATION GROWTH AND THE FUTURE IN MONASH

This section describes the population growth forecast for the City of Monash between 2021 and 2036 and implications for access to the open space network.

2.1. Urban Policy & Monash

Plan Melbourne, the overarching metropolitan planning policy for the Melbourne metropolitan area, establishes a focus on containing urban sprawl and concentrating employment and dwelling growth around existing activity centre and key transport facilities. This can be referred to as a polycentric approach and is supported by the Principle of the 20 Minute Neighbourhood.

To achieve this 20 Minute Neighbourhood, Plan Melbourne states:

- Outcome 2 Melbourne provides housing choice in locations close to jobs and services.

This Outcome is supported by the following Directions:

- Direction 2.1 - Manage the supply of new housing in the right locations to meet population growth and create a sustainable city

- Direction 2.2 - Deliver more housing closer to jobs and public transport

- Direction 2.3 - Increase the supply of social and affordable housing

- Direction 2.4 - Facilitate decision-making processes for housing in the right locations

- Direction 2.5 - Provide greater choice and diversity of housing

For Monash it is foreseen that an increasing proportion of this housing growth will be concentrated in and around the main activity centres and transport hubs such as those at Clayton, Glen Waverley and Oakleigh. Incremental growth through medium density housing development is expected to continue as it has, including through a predominance of dual occupancy type development remaining the most common form of redevelopment.

Whilst the existing policy and strategy positions in Monash, such as the Monash Housing Strategy, are broadly consistent with Plan Melbourne, they are yet to be updated such as in response to the more recently announced creation of 3 Suburban Rail Loop Stations in Monash will further increase development pressure and density in Clayton Activity Centre, Monash University Employment Precinct and the Glen Waverley Activity Centre.

When looking at the Planning scheme, one of the most significant gaps in the Planning Scheme that has yet to be updated is the current Public Open Space contribution framework that ranges from 2 to 5%. This contribution was set under very different growth and density expectations and, given the future density proposed to achieve Plan Melbourne, will not provide sufficient

financial contributions for improvements to open space to meet the needs of the future community.

In addition to Plan Melbourne, the recently released draft Eastern Metro-Land Use Framework Plan provides further direction on the location of employment and dwelling growth, with Monash forecast to accommodate at least 32% of future housing growth for the Eastern Region, and expected to increase employment by 38,863 jobs.

TABLE 9. Eastern Metro Region 70/30 dwelling redistribution by LGA to 2036

LGA	VIF2019 DWELLINGS		INCLUDING 70/30 DWELLINGS	70/30 DWELLING REDISTRIBUTION	SHARE OF REGIONAL REDISTRIBUTION
	2021	2036	2036		
Knox	64,200	75,600	76,300	700	14%
Manningham	49,600	57,800	58,400	600	12%
Maroondah	48,500	58,300	58,700	400	8%
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Yarra Ranges	62,600	73,300	73,600	300	6%
Eastern Metro Region	371,800	445,300	450,300	5,000	100%

Source: DELWP, 2021

High density housing in Glen Waverley. Source: Draft Eastern Metro-Land Use Framework Plan DEWLP 2021

2.2. Population forecast

Population growth in Monash, worker and resident, is forecast to grow significantly out to 2036.

At June 2020 the Australian Bureau of Statistics (ABS) estimated the resident population to be 204,936. Whilst this is slightly less than the 2019 Victoria in Future forecast of 207,530 it still shows significant population growth of 18,786, since the adoption of the Monash Housing Strategy in 2014.

The Table below shows the Victoria in Future population and household forecast information for Monash from 2021 to 2036. This forecasts an additional 41,400 resident between 2021 and 2036.

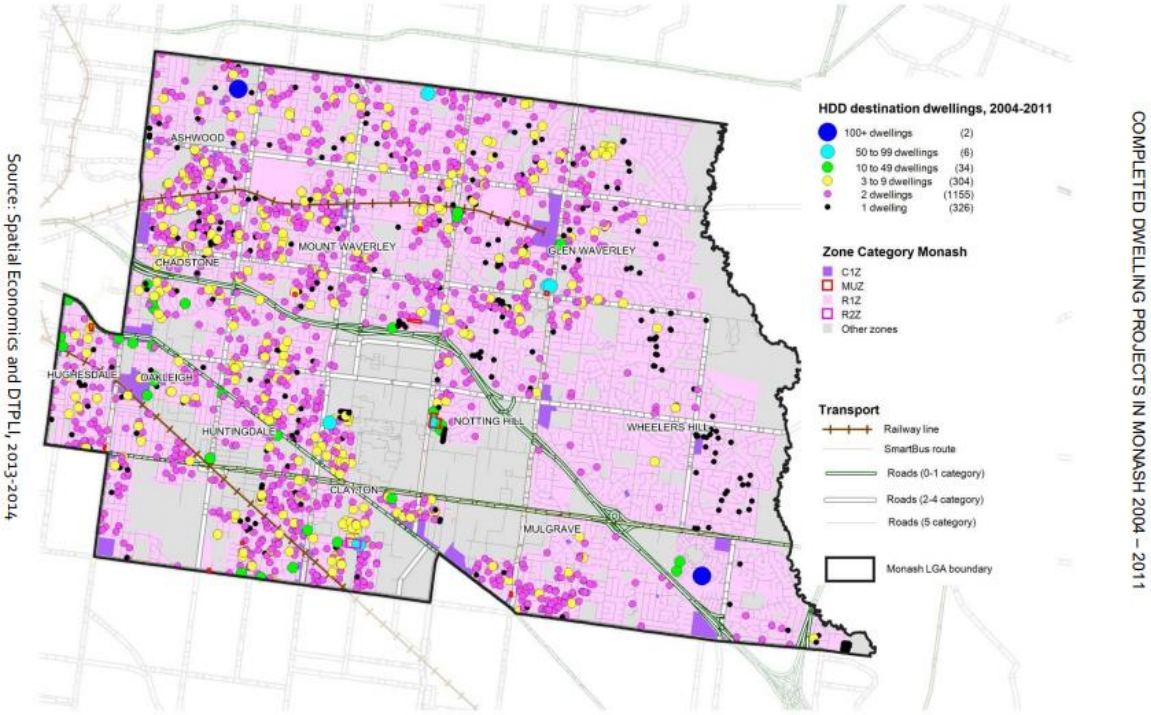
Dwelling and population change 2021 to 2036				
	2021	**2026**	**2031**	**2036**
Total population	207,530	221,230	234,750	248,930
Total households	75,240	80,910	86,640	92,720
Household size	2.69	2.66	2.64	2.62
Total dwellings	77,650	83,850	89,520	95,610
Occupancy	96.9%	96.5%	96.8%	97.0%
Source: VIF 2019				

Worker population is also forecast to increase. The draft Eastern Metropolitan Land Use Framework Plan forecasts continued employment growth to 2036 of 38,863 jobs in Monash to 2036. The suburban Rail Loop business case predicts job growth of 175,500 new jobs just in the three station precincts alone by 2056. For the purposes of the open space strategy, projections from the Eastern Metropolitan Land Use Framework Plan have been used as these are the lower of the two.

The job growth projections from the draft Eastern Metropolitan Land Use Framework Plan have been used to inform the Monash Open Space Strategy as they are for a similar horizon to the strategy, whereas the Suburban Rail Loop is forecast to open in 2032 and it is anticipated that most job growth related to Suburban Rail Loop will be between 2036 and 2056. None the less, this provides context for future growth.

2.3. Growth patterns and projections

Historically, and more traditionally, residential growth in Monash was scattered and in part opportunistic as sites became available for “traditional” dual occupancy and multi-unit development. This is shown in the extract below from the Monash Housing Strategy 2014.



Whilst it is still expected that substantial infill development will occur, there is likely to be a gradual increase of new housing provided in the form of higher density development.

The property development market itself will drive the type of housing that is to be provided into the future, and this will include responding to down sizers, increased community expectations and overall affordability issues. This means that as increased density living is attractive to residents, developers will seek out areas that have access to services, jobs, infrastructure and open space.

The construction of the Suburban Rail Loop and the planning changes foreshadowed by the State Government through the designation of a 1.6km radius SRL precinct development will further focus increased density and growth around these key infrastructure locations.

The recent dwelling approval information for Monash reinforces the trend to increasing levels of development in and around activity centres.

Employment in Monash is forecast to grow by 26.9% between 2021 and 2036 and resident population is forecast to grow by 22.3%. This faster growth in employment than residential population presents many economic opportunities for Monash but also demonstrates the need to provide high quality public open space near employment.

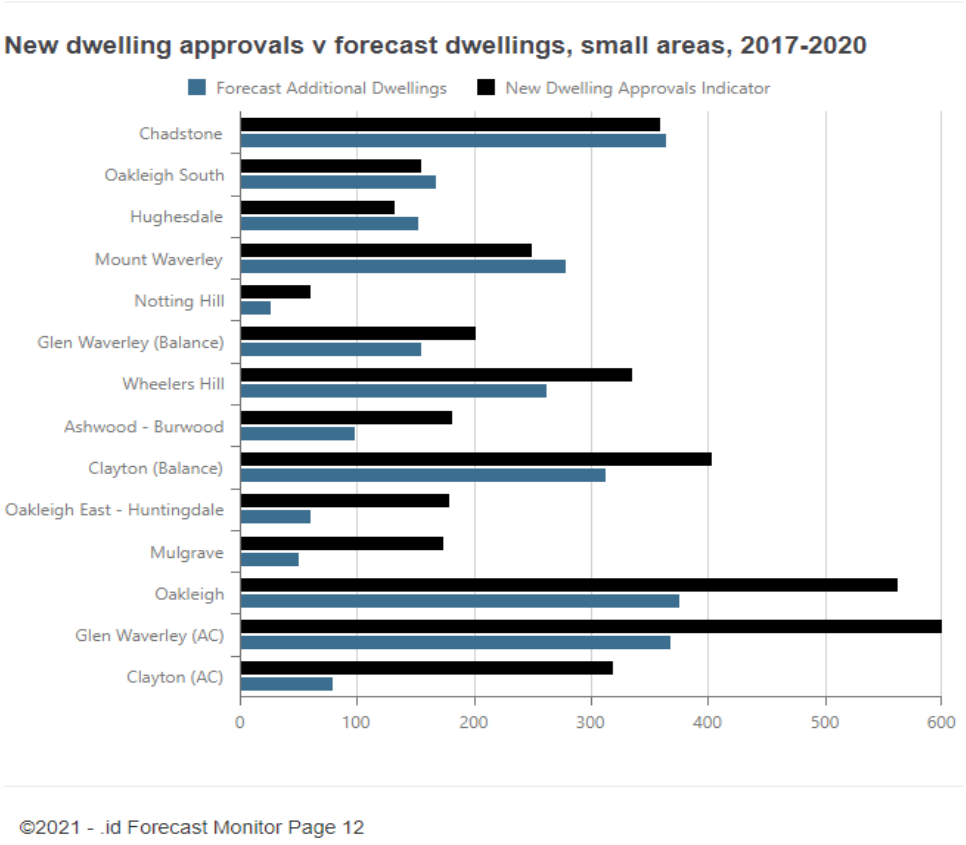


FIGURE 1: FORECAST POPULATION GROWTH BY OPEN SPACE PRECINCT

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Ashwood Burwood	10,431	11,721	1,290	12.37%
Chadstone	10,208	11,159	951	9.32%
Clayton	22,689	33,521	9,723	47.74%
Glen Waverley	44,530	55,885	11,355	25.50%
Hughesdale	8,509	9,453	944	11.09%
Mount Waverley	36,298	40,249	3,951	10.88%
Mulgrave	20,425	21,905	1,480	7.24%
Notting Hill	3,339	4,755	1,416	42.40%
Oakleigh South	5,870	8,187	2,317	39.47%
Oakleigh	9,921	15,845	7,033	59.71%
Huntingdale Oakleigh East	8,930	11,306	2,376	26.61%
Wheelers Hill	22,351	24,945	2,594	11.60%
Overall	**203,501**	**248,930**	**45,429**	**22%**

Source: .id Forecasts 2017, VIF 2019

2.4. Key drivers and implications

The ongoing increase in infill development and intensification of activities on commercial and industrial land across Monash will place greater pressure on existing open spaces. In the absence of any change to the current open space contribution requiring new development to fund the need they create, Council will face the choice of not providing the required improvements or placing the burden of the cost of improvements on existing rate payers to the detriment of other open space areas of Monash.

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.

3. OPEN SPACE PROVISION STANDARDS

3.1. Historical context of Open Space provision

Historically, and currently for many Councils, open space assessments are largely quantitative in nature, with a focus on quantity and proximity measures. This method has generally been appropriate as paddocks developed into suburbs and large lots with single dwellings. It is this environment of the broad scale subdivision of farmland that the 5% contribution became the default standard for open space contributions in subdivisions, firstly through the Local Government Act 1958 and subsequent to that the Subdivision Act 1988. .

Council's existing open space contribution rates as specified in Clause 53.01, which remain unchanged from the standard rates within the upper limit of the Subdivision Act 1988, which were derived from the principles of Victorian Local Government Act 1958. The pattern, type and intensity of development have changed significantly since this time, and there is a strong basis to create an open space contribution scheme that more closely matches and responds to this considerable change. In essence, they are an antiquated and arbitrary range of percentage contributions that were certainly more appropriate when traditional suburban subdivision densities were occurring such as when Monash was first converted from orchards and paddocks and the early incremental infill development scattered throughout Monash.

It should not be forgotten that this time, population and house sizes were smaller, and residential blocks were much larger featuring more expansive backyards. It was certainly a different time, with lower densities, larger areas set aside for open space, and certainly not the intensity of redevelopment of scale, and certainly the absence of State planning consolidation and intensification policies such as Plan Melbourne and pressure for infill development as opposed to urban sprawl. As the Municipality continues to grow, change and develop so should the way we collect and provide for open space. The current rates in no way reflect and respond to the need for open space provision in the Municipality today.

Whilst this approach may have been suitable for land subdivision and dwelling densities in the order of 10 per hectare or scattered infill single storey unit development, it is clearly no longer suitable for the modern development densities happening in Monash that provide minimal private open to residents in order to comply with the standards of the planning scheme.

In recognition of the need to take a more strategic approach to the provision of open space in the renewal of established urban areas the Planning and Environment Act 1987 and Clause 53.1 of the Victoria Planning Provisions provide the specific ability for the specification of an open space contribution independently of the constraints imposed by the Subdivision Act 1988.

3.2. Proximity based standards

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 public 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.
- 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 revised Monash Open Space Strategy 2021 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.

3.3. 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. From the 1970s, standards-based approaches to delivering parks and open space began to face significant criticism for producing bland and unused open spaces. In the UK, CABE (2005) advises that 'such quantitative national standards should be used with care' and advocate for standards that are set locally to address local needs, demographics and economic patterns. CABE argue that the relationship and integration of green space with the built environment should be reflected in policy, along with an understanding of the types of green space and their suitability for multiple uses.

Use of public open space is influenced by a variety of factors not simply access, but also how people experience the space. 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.

An example of an assessment guide that takes into consideration the qualitative dimensions of open space can been seen in the 8 key qualities of successful green spaces developed by CABE in 2005. These criteria are identified as:

- 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.

3.4. Service level standards

'Services' refers to a combination of the quantity and quality of open space. ***Higher quality open spaces deliver a greater amount of open space services to the local community than low quality open spaces of the same size.*** Higher quality open spaces can include 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, toilets, BBQ's, 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, increased investment in open space increases the intensity and diversity of uses that can occur there. This can be represented in terms of the 'service' that a particular area of open space provides to the community.

3.5. Key drivers and implications

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. However, with

significantly increasing densities forecast the more important metric is one that incorporates Service Level Standards and the utility of the open space itself. The importance of assessments that also include a qualitative basis to ensure that open space is not only accessible, but of a high quality cannot be understated.

Prioritising standards driven by quantitative measures may potentially lead to insufficient consideration on the quality of parks themselves, leading to poor quality spaces that are underused.

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

Qualitative measures are also important to consider in cases where it's too expensive for Councils to acquire new land (particularly in the inner suburbs). It 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 better serve the growing community.

All three of measures of quantity, proximity and quality need to be considered when developing a comprehensive plan for an open space network that meets the community's various needs. 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 and will identify the types of acquisitions, improvements and upgrades that need to be introduced in particular locations across the municipality.

The revised Monash Open Space Strategy includes a range of open space infrastructure and improvements to meet service standards required of modern open space in more densely developed urban environment. The service standards then assist in the creation of the open space improvements and implementation plan for Monash.

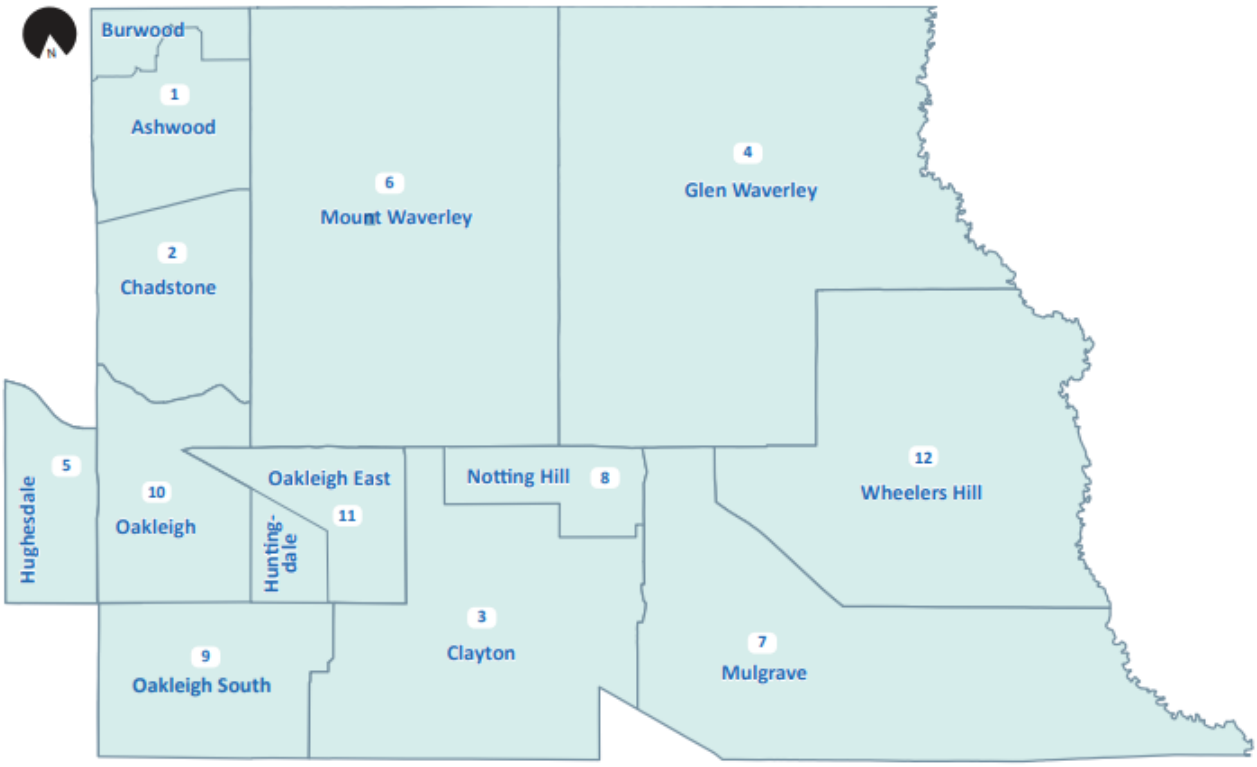
4. OPEN SPACE IMPLEMENTATION PLAN

4.1. Overview of Open Space implementation plan

The Monash Open Space Strategy identifies 12 separate precincts across Monash for the assessment and categorisation of open space. The primary purpose of the precinct approach is to understand open space and population growth issues in manageable "chunks" and relate these issues back to communities of interest and likely demand pressure and priority areas.

Although the Precinct analysis is useful for understanding the detail and spatial issues associated with growth and open space provision, ultimately, the approach taken in this document and supported by the Panel hearing for Amendment C148, is that for the purpose of developing the revised open space contribution the inclusionary principle of Monash as one planning unit is appropriate.

The precincts are shown in the Map below.



The analysis undertaken to determine public open space needs for Monash Precincts took into account:

- Population forecast for 2036.
- The services standards of the Monash Open Space Strategy
- Distribution and location of future population growth.

As a result of this assessment it is forecast that a total of 25.1 hectares of new additional open space identified to meet the needs of the future population.

- Provide OS for new residents (particularly in higher density developments).
- Fill gaps in network
- Increase proportion of residents in walking distance to OS.
- 4.9% of current OS.
- Population growth anticipated to be 22.30% of current.

For each Precinct:

- Costs for each identified project was estimated
- Demand and benefit for each proposed project was apportioned between existing residents and future development, to provide a share of costs were apportioned.

The table below shows the forecast cost and apportionment of open space improvements on a Precinct by Precinct basis.

Future Open Space expenditure by precinct.

Precinct	Cost proportion to new	Cost proportion to existing	Total
Ashwood Burwood	$11,380,000	$11,880,000	$23,260,000
Chadstone	$11,157,928	$11,282,928	$22,440,855
Clayton	$188,873,753	$45,619,113	$234,492,866
Glen Waverley	$110,191,250	$32,250,250	$142,441,500
Hughesdale	$42,051,800	$42,176,800	$84,228,600
Mount Waverley	$37,695,625	$25,691,375	$63,387,000

Mulgrave	$32,531,188	$16,222,313	$48,753,501
Notting Hill	$16,275,250	$3,581,250	$19,856,500
Oakleigh South	$23,762,250	$12,394,250	$36,156,500
Oakleigh	$82,071,250	$26,373,750	$108,445,000
Huntingdale Oakleigh East	$28,744,613	$9,031,538	$37,776,151
Wheelers Hill	$18,770,000	$6,490,000	$25,260,000
General upgrades	$3,297,656	$1,099,219	$4,396,875
Overall	**$606,802,563**	**$244,092,785**	**$850,895,348**

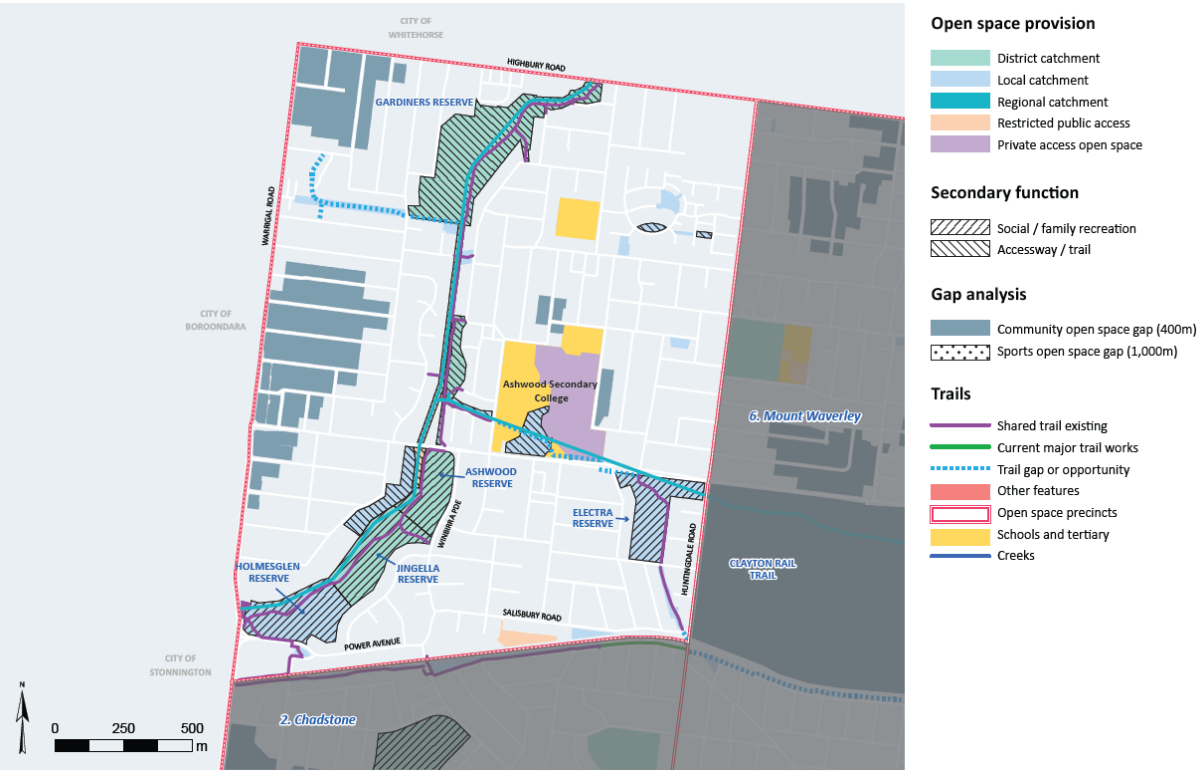
Precinct 1 Burwood/Ashwood

Burwood and Ashwood are located in the north-west corner of Monash sharing borders with Boroondara and Whitehorse. Despite a gap in Monash, some residents are within 400 metres walk of open space in Boroondara and Whitehorse.

Burwood and Ashwood are generally older suburbs that commenced development in the 40's and were developed largely in the 1950's.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Ashwood Burwood	10,431	11,721	1,290	12.37%

Note: the map will be amended to recognise open space in adjoining municipalities.



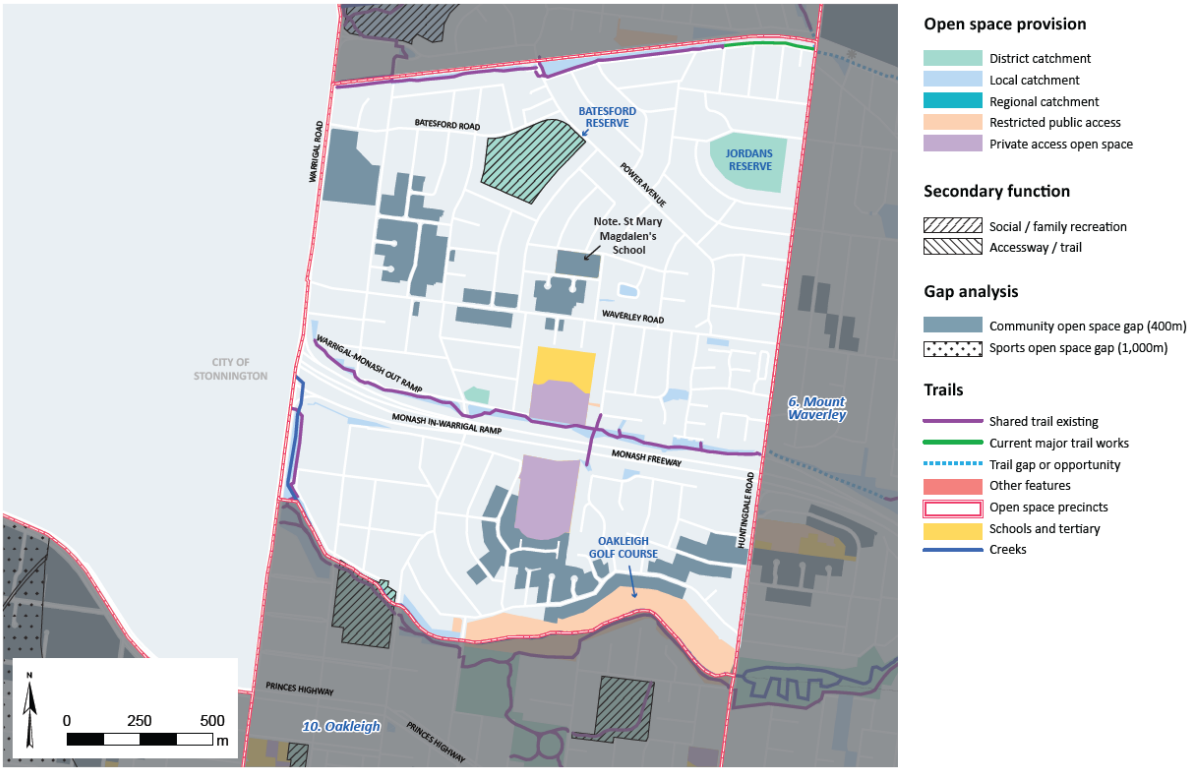
Implementation Actions – Ashwood/Burwood

Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - area of Edmonds Ave, George Street or Douglas Street.	Local Park - New	5000		$20,575,000
Path connection from Elizabeth and Leopold Streets to Gardiners Creek.	Bridge and Path - New		815	$760,000
Construct a bridge across the Melbourne Water drain to connect the Gardiners Reserve and Gardiners Creek Trail.	Bridge and Path - New			$600,000
New path - Circuit path around Electra Reserve to extend existing path network.	Reserve path - New		450	$225,000
Fill path gap - Connection Vannam Drive to Electra Reserve (via wetlands).	Path - New		200	$100,000
New Toilet - Electra Reserve	Toilet - New			$250,000
New Toilet - Holmesglen Reserve	Toilet - New			$250,000
New Toilet - Gardiners Reserve	Toilet - New			$250,000
New Toilet - Ashwood Reserve	Toilet - New			$250,000
Total		5,000	1,465	$23,260,000

Precinct 2 Chadstone

Chadstone is located on the western boundary of Monash, shared with Stonnington. It has good transport accessibility, and there has been some redevelopment in recent years including higher density around the Holmesglen Activity Centre.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Chadstone	10,208	11,159	951	9.32%



Implementation Actions – Chadstone

Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New park - area around Waverley Road / Aloomba St, Bullarto St, Bosco St.	Local Park - New	2500		$7,525,000
New Park - Area around Kelly St, Rae Street, Dundee Ave, Drummond St and Newton St	Local Park - New	2000		$3,624,355
New park - Oakpark Drive, Meadows Court, Cedar Close, Outlook Court, Oakleigh Golf Course area.	Local Park - New	3000		$10,526,500
New shared path - Circuit path around Batesford Reserve and connect to the Glen Waverley Rail Trail.	Reserve path - New		1030	$515,000
New Toilet - Batesford Reserve	Toilet - New			$250,000
Total		7,500	1,030	$22,440,855

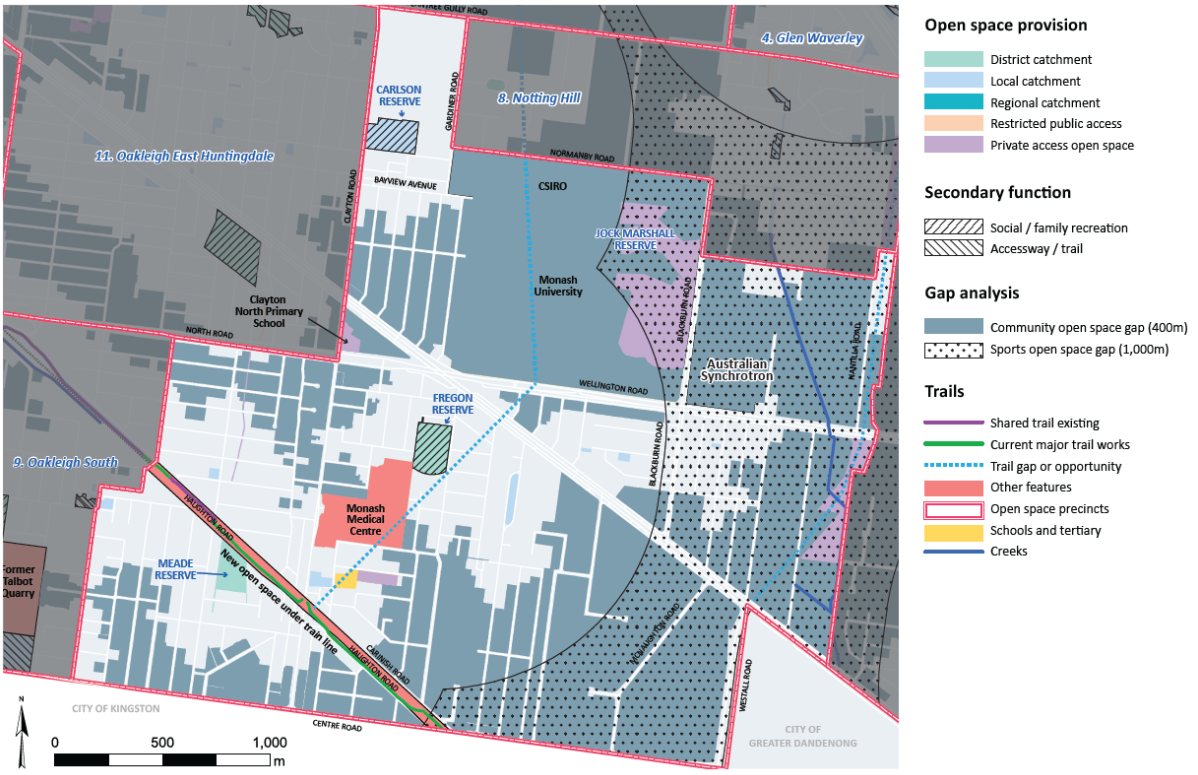
Precinct 3 Clayton

Clayton is an older suburb of Monash and is home to Monash University and the main site of Monash Hospital and the new Victorian Heart Hospital. Clayton has good transport connections and will contain two future Suburban Rail Loop stations.

Clayton is anticipated to experience the second highest level of growth across the municipality and a substantial increase in density, particularly around the key sites listed above. Much of this growth will be in apartments (both small and larger buildings) emphasising the need to substantially expand Public Open Space.

Only 50% of the population are within walking distance to a park, and most of these parks are relatively small in size.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Clayton	22,689	33,521	9,723	47.74%



Implementation Actions – Clayton

Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - Area around Woodside Avenue, Koonawarra Street, Stockdale Avenue.	Local Park - New	5000		$17,054,400
New Park - area of Manton Road, Edinburgh Street, Margaret Street, and Madeline Road.	Local Park - New	4500		$12,614,500
Landscape improvements - Evelyn Street Reserve.	Local Park - Improvements			$100,000
New Park - area around View Street, Harlington Street and Ormond Rd.	Local Park - New	5000		$12,166,450
New Park - Pocket park on Council land in Activity Centre.	Pocket Park - New			$500,000
New park - Former PNP site - Land contribution, Imprvements may need to be undertaken by Council.	Local Park - New	7500		$10,000,000
New Park - Winterton Road area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
New park - Haughton Road area.	Local Park - New	5000		$17,931,650
Land acquisition in the area around Renver Rd and Sarton Rd	Local Park - New	5000		$14,087,700
New Park - Henderson Road area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
New trail - Link Clayton Station to the Monsah University and to the Monash Freeway Trail. Route to be investigated.	Path - New		2750	$1,500,000
New Toilet - Meade Reserve	Toilet - New			$250,000
New Toilet - Carlson Reserve	Toilet - New			$250,000
New Toilet - Fregon Reserve	Toilet - New			$250,000
New Park - Area around Monash SRL station, Normanby Road.	Local Park - New	5000		$38,750,000
New Park - McNaughton Road area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
New Park - Area around Kanooka Grove.	Local Park - New	5000		$17,380,650
New Park - Area around Jaguar Drive and Kionga Drive.	Local Park - New	5000		$14,579,250

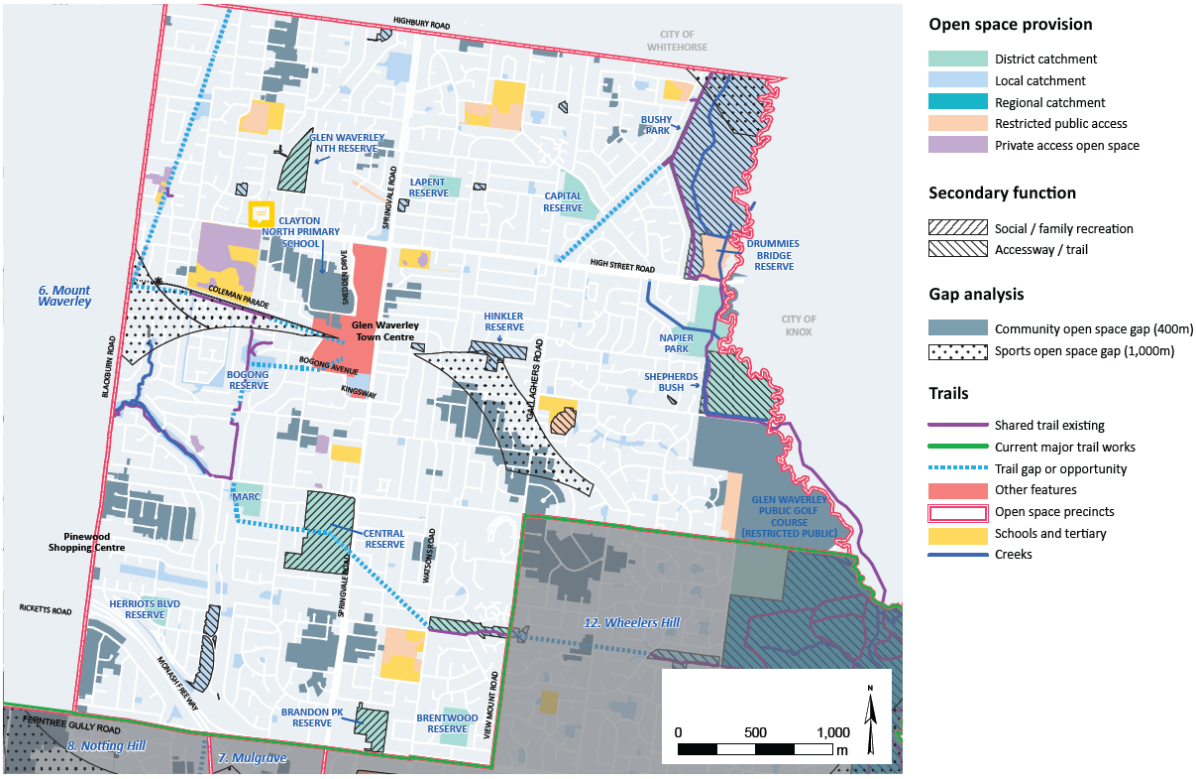
New Park - Area around Woodside Avenue, Beddoe Avene (RGZ area).	Local Park - New	3000		$13,426,500
New Park - Area around Myriong Street and Royalty Street (RGZ area).	Local Park - New	3000		$10,162,550
Land acquisition Shandeau Avenue (RGZ area).	Local Park - New	3000		$9,627,500
New Park - Area around Burton Avenue.	Local Park - New	3000		$12,685,115
Sporting Reserve expansion - Meade Reserve	Sporting Reserve - Expansion	3600		$10,016,600
Park improvements - 7-9 Flora Road.	Local Park - Improvements			$150,000
Park improvements - Meade Reserve.	Sporting Reserve - Improvements		720	$3,360,000
Park improvements - Fregon Reserve.	Park Improvements			$1,000,000
Park improvements - Meade Reserve.	Park Improvements		400	$1,200,000
Total		71,600	3,870	$234,492,865

Precinct 4 Glen Waverley

Glen Waverley was developed primarily in the 1960's and has a strong garden character to its streets. The largest activity centre in Monash is Glen Waverley Major Activity Centre (GWMAC). In recent times there has been a number of high density apartments built, as well as lower rise apartments within the GWMAC. Glen Waverley Station is the end of the line, and in the future will be augmented by a Suburban Rail Loop station.

Glen Waverley is anticipated to experience the highest level of growth across the municipality and a substantial increase in density, particularly around the GWMAC. While Glen Waverley has good coverage of open space, there will need to be additional open space within and around the activity centre to ensure walkability, and substantial improvements to larger parks nearby such as Bogong and Hinkler Reserves to increase their capacity.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Glen Waverley	44,530	55,885	11,355	25.50%



Implementation Actions – Glen Waverley

Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - Area around Rose Ave, Myers Ave, Fernhill Street and Lisbon Street.	Local Park - New	5000		$22,605,000
New Park - Area around Margate Crescent, Rob Roy Street and Pevril Street.	Local Park - New	5000		$15,384,000
New Park - Area south of the Monash, east of Blackburn Road, north of Ferntree Gully Road.	Local Park - New	5000		$12,353,500
New Park - Area around Koonalda Avene, west of Springvale Road.	Local Park - New	5000		$16,152,500
Park Improvements - Whites Lane Reserve.	Local Park/ SFR			$200,000
New Park - Area around Alimar Road, Wilson Road, Brazilia Drive.	Local Park - New	5000		$19,850,000
Park Improvements and new path - Shepherd Road Reserve.	Local Park - Path and improvements		160	$200,000
Park Improvements (provide SFR space, new toilet, landscaping) - Hinkler Reserve.	Local Park - Improvements			$1,500,000
Park Improvements (provide SFR space, toilets, substantial landscaping, shelter) - Bogong Reserve.	Local Park - Improvements			$2,500,000
New Path - Path connecting Bogong Reserve to Glen Waverley station and centre.	Path - New		670	$385,000
New Park - In Glen Waverley Activity Centre, Kingsway area.	Local Park - New	2500		$20,000,000
New Path - Circuit path around and through Central Reserve.	Reserve path - New		2050	$1,025,000
Path Extension - Extend Scotchmans Creek Trail from the MARC to Central Reserve.	Path - New		715	$1,357,500
Path Extention - Extend Scotchmans Creek Trail from Central Reserve to the Waverley Tennis Club park (Whites Lane Reserve).	Path - New		850	$425,000
Fill Path Gap - Glen Waverley Rail Trail from Syndal Station to Glen Waverley Station.	Path - New		480	$240,000

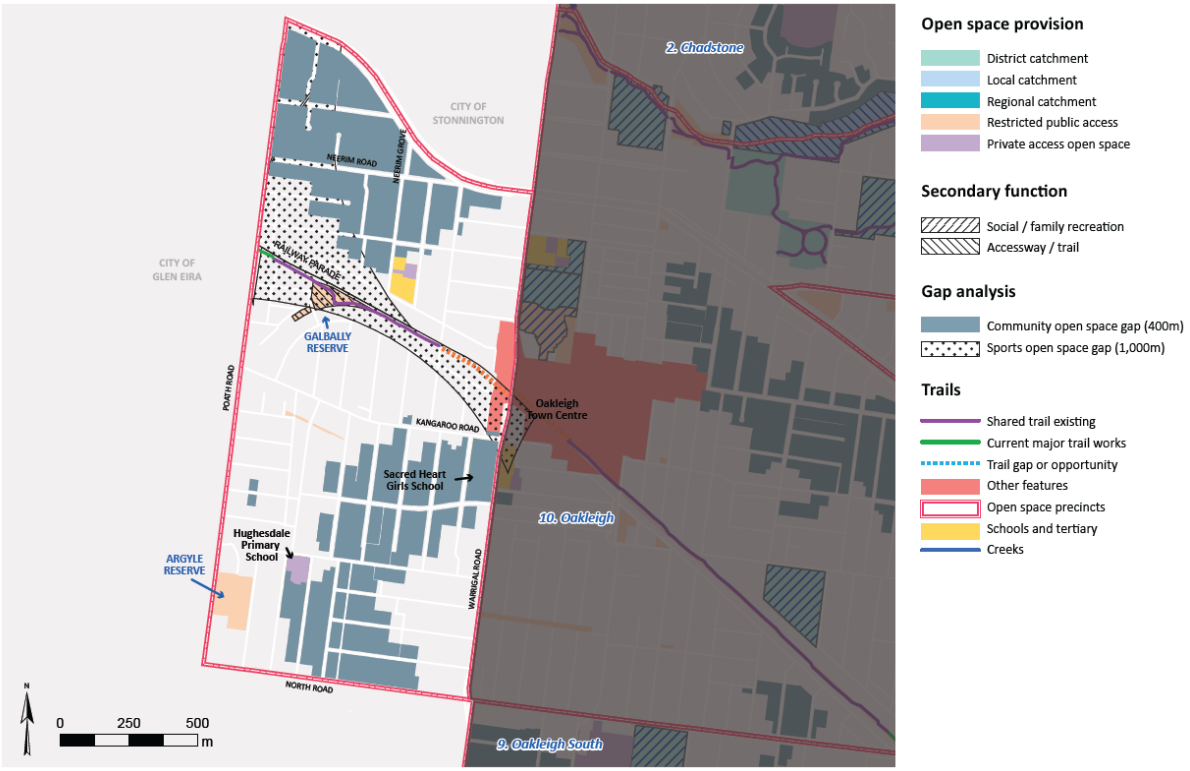
New Path - Ringwood Lake Trail Connection from Syndal to Highbury Road.	Path - New		1850	$1,325,000
New Path - High Street Road (at Gallaghers Road) to Bushy Park.	Path - New		1000	$500,000
Park Improvements - Future improvements to public green within the existing library forecourt.	Pocket Park - New			$1,000,000
Park Improvements - Springvale Road Reserve (corner of High Street Road).	Local Park - Improvements			$1,000,000
Park Improvements - Upgrade Napier Park Reserve to District Reserve.	Local Park - Improvements		1150	$1,325,000
New Toilet - Glen Waverley North Reserve.	Toilet - New			$250,000
Park Improvements - Ballara Avenue Reserve.	Local Park - Improvements			$600,000
New Park - Area around Barbara Avenue, Goodin Grove, Blair Road.	Local Park - New	3000		$14,383,500
New Park - Glen Waverley Activity Centre, Railway Parade, O'Sullivan Road.	Local Park - New	1500		$7,880,500
Total		32,000	8,210	$142,441,500

Precinct 5 Hughesdale

Hughesdale is a relatively small suburb developed primarily in the 1960's and has a strong heritage character. In recent times there has been a number of apartments built around the activity centre and Dandenong Road.

There are two reserves in Hughesdale (Argyle Reserve and Galbally Reserve) and one smaller accessway reserve.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Hughesdale	8,509	9,453	944	11.09%



Implementation Actions – Hughesdale

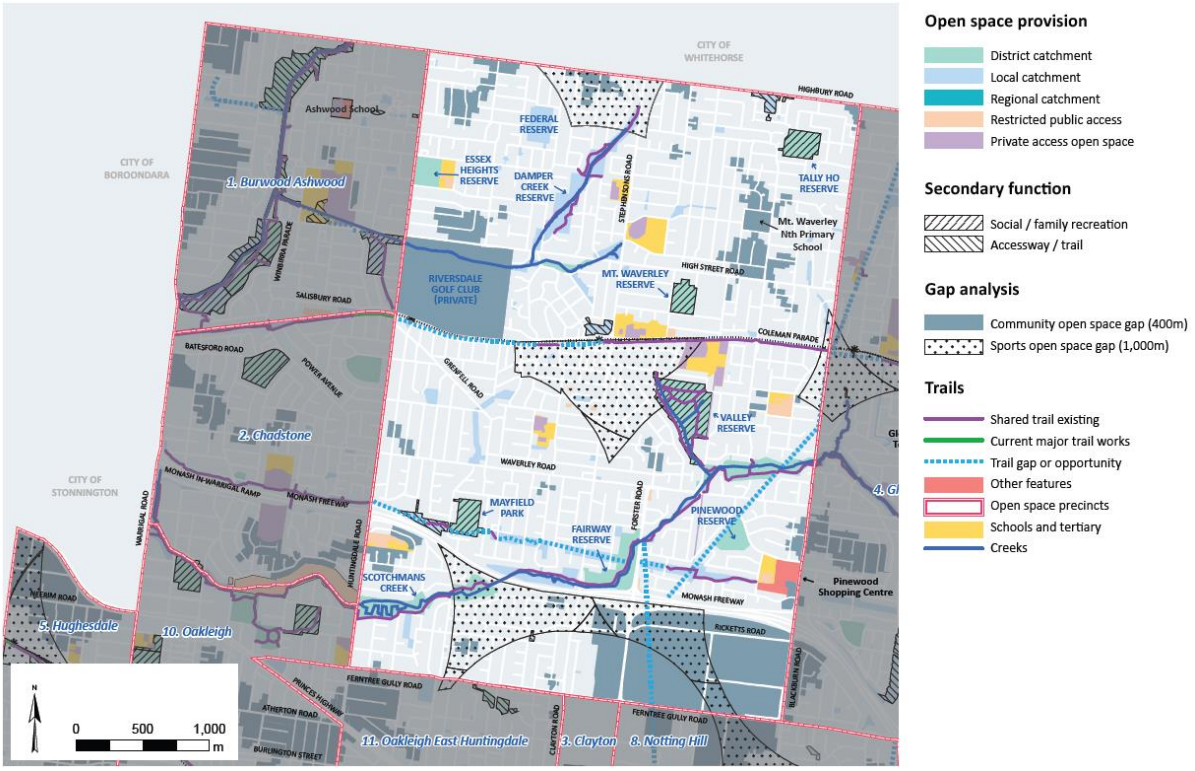
Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - Area around Maroo Street.	Local Park - New	3500		$15,558,000
New Park - Area around Neerim Road, Wilbur Cres and Bletchley Road.	Local Park - New	5000		$21,372,500
New Park - Area around Dallas Avene, Moorookyle Avenue, and Long Place.	Local Park - New	5000		$16,167,000
Park Expansion - Kelvinside Street Reserve.	Local Park - New	3000		$9,468,000
New Toilet - Galbally Reserve.	Toilet - New			$250,000
New Park - Area around Canterbury Street and Bowen Street.	Local Park - New	5500		$21,413,100
Total		22,000	0	$84,228,600

Precinct 6 Mount Waverley

Mount Waverley was developed primarily in the 1960's and has a strong garden character to its streets. It is the second largest suburb in Monash both geographically and in terms of population.

Most of Mount Waverley is in the General Residential Zone, and there has been some low-rise apartment development (3 storeys).

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Mount Waverley	36,298	40,249	3,951	10.88%



Implementation Actions – Mount Waverley

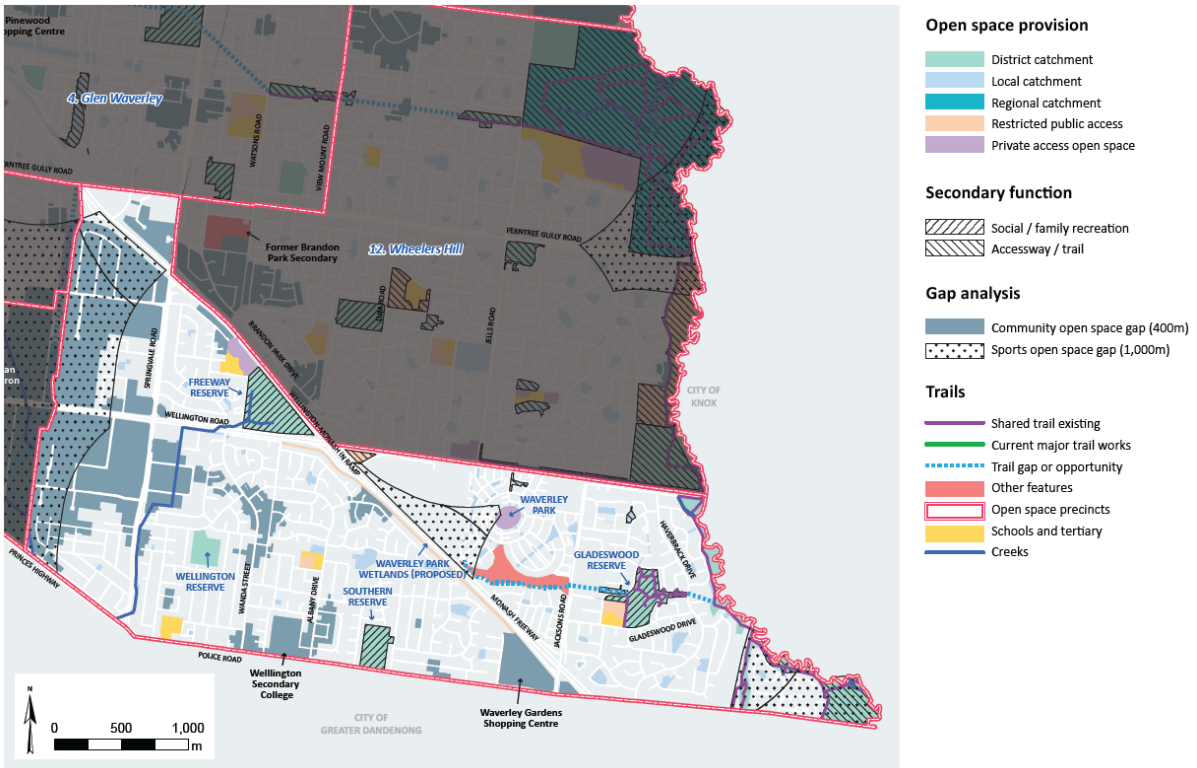
Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - Area around Kingston Street, Leyland Road.	Local Park - New	5000		$16,631,000
New Park - Area around Trevor Court, Josephine Avenue, Lechte Road.	Local Park - New	3750		$11,672,000
New Park - Area around Jacqueline Road, Josephine Avenue, Carolina Street.	Local Park - New	2700		$9,250,500
New Park - Gilby Road area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
Fill Path Gap - Glen Waverley Rail Trail - Huntingdale Road to Stephensons Road.	Path - New		1470	$735,000
Fill Path Gap - Monash Freeway Trail - Huntingdale Road to Pinewood Shopping Centre from Huntingdale Road.	Path - New	500	1655	$2,127,500
New Path - Connect Monash Freeway Trail to the Scotchmans Creek Trail and the southern portion of the Ringwood Lake Trail, via Pinewood Reserve.	Path - New		1680	$1,140,000
New Path - Circuit path around Essex Heights reserve.	Reserve path - New		650	$325,000
New Path - Mount Waverley Village to Scotchmans Creek Trail.	Path - New		1430	$715,000
New Toilet - Waverley Road Basin.	Toilet - New			$250,000
New Toilet - Fairway Reserve	Toilet - New			$250,000
New Toilet - Melissa Street Reserve	Toilet - New			$250,000
New Park - Area around Stocks Road, Surrey Road and Fairview Road.	Local Park - New	5000		$14,891,000
Total		19,950	6,885	$63,387,000

Precinct 7 Mulgrave

Mulgrave has been developed over a range of time with some development pre-dating the 1950's and substantial development in the 1980's. Over the last 20 years Waverley Park has been redeveloped for housing with residential development nearing completion. Most other growth will be smaller subdivisions of existing lots. Most other growth will be smaller subdivisions of existing lots.

In some areas the road layout substantially impedes walkability.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Mulgrave	20,425	21,905	1,480	7.24%



Implementation Actions – Mulgrave

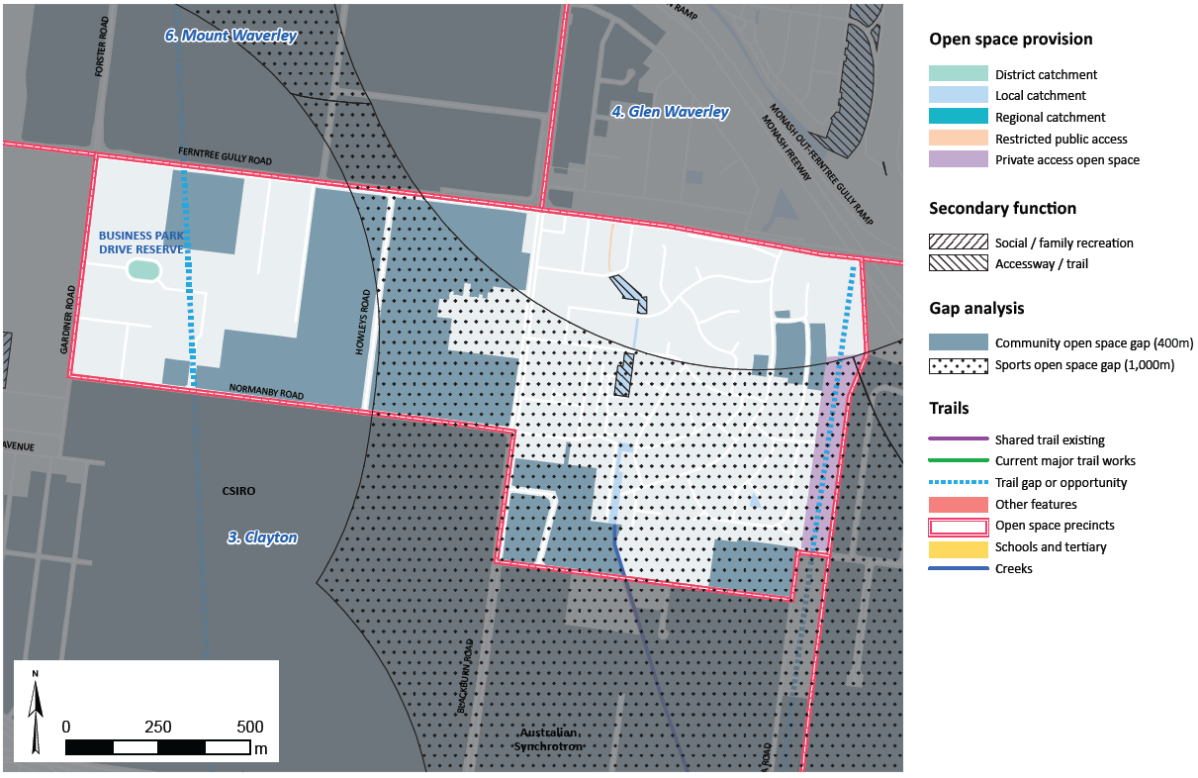
Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - Area around Caper Court, Wanda Street and Redfern Crescent.	Local Park - New	4000		$9,040,250
New Park - Area around Albany Drive, Milton Crescent.	Local Park - New	5000		$11,577,750
Park Expansion - Knell Street Reserve.	Local Park - New	1500		$3,458,000
New path - Connect Waverley Park Wetlands Park to the Dandenong Creek Trail via Gladeswood Reserve (inc land acquis).	Path - New	4100	710	$3,327,500
New Toilet - Gladeswood Reserve.	Toilet - New			$100,000
New Pocket Park - Disused Road Reserve - Highfield Avenue, Mountain Crescent.	Pocket Park - New	580		$250,000
Park Improvements - 14 Shaftsbury Drive.	Local Park - Improvements			$400,000
New Park - Glenvale Crescent area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
New Park - Rosemary Court and Village Court area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
New Park - Pickering Road, Dunlop Road, Lexia Place area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
New Park - Peters Avenue area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
Total		27,180	710	$48,753,500

Precinct 8 Notting Hill

Notting Hill is a small suburb adjoining Monash University in Clayton. It's current population is small, but a Suburban Rail Loop station is planned on the edge of Notting Hill likely leading to substantial population growth. More recently there has been medium rise apartment development on the former Deakin University campus,

There are small parks through the central section, with poor open space to the east and west. Some open space contains no improvements, or is effectively an access path. Additional open space and improvements are required to address anticipated population growth.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Notting Hill	3,339	4,755	1,416	42.40%



Implementation Actions – Notting Hill

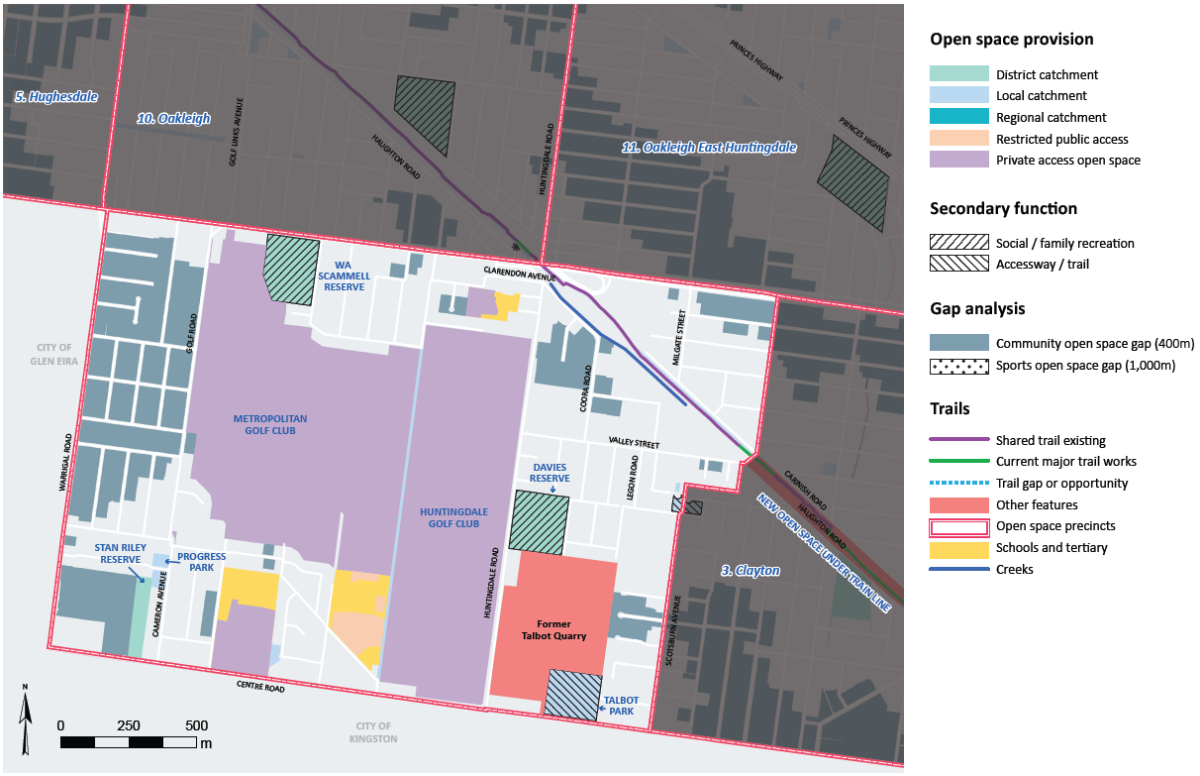
Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - Area around Westerfield Drive, Longbourne Avenue.	Local Park - New	3600		$8,775,000
Park Expansion - 4 Berrydale Court.	Local Park - New	2500		$5,531,500
New Park - Howleys Road area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
Park Improvements - Business Park Drive Reserve.	Local Park - Improvements			$400,000
Total		9,100	0	$19,856,500

Precinct 9 Oakleigh South

Oakleigh Sough is a small suburb in the south west corner of Monash likely to experience the highest percentage level of growth, albeit off a small base. There are a number of infill redevelopment sites within the suburb likely to be developed with townhouses and some apartments the largest being the former Talbot Quarry. Most (but not all) of these sites are well located close to existing open space.

The western part of the suburb has poor coverage.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Oakleigh South	5,870	8,187	2,317	39.47%



Implementation Actions – Oakleigh South

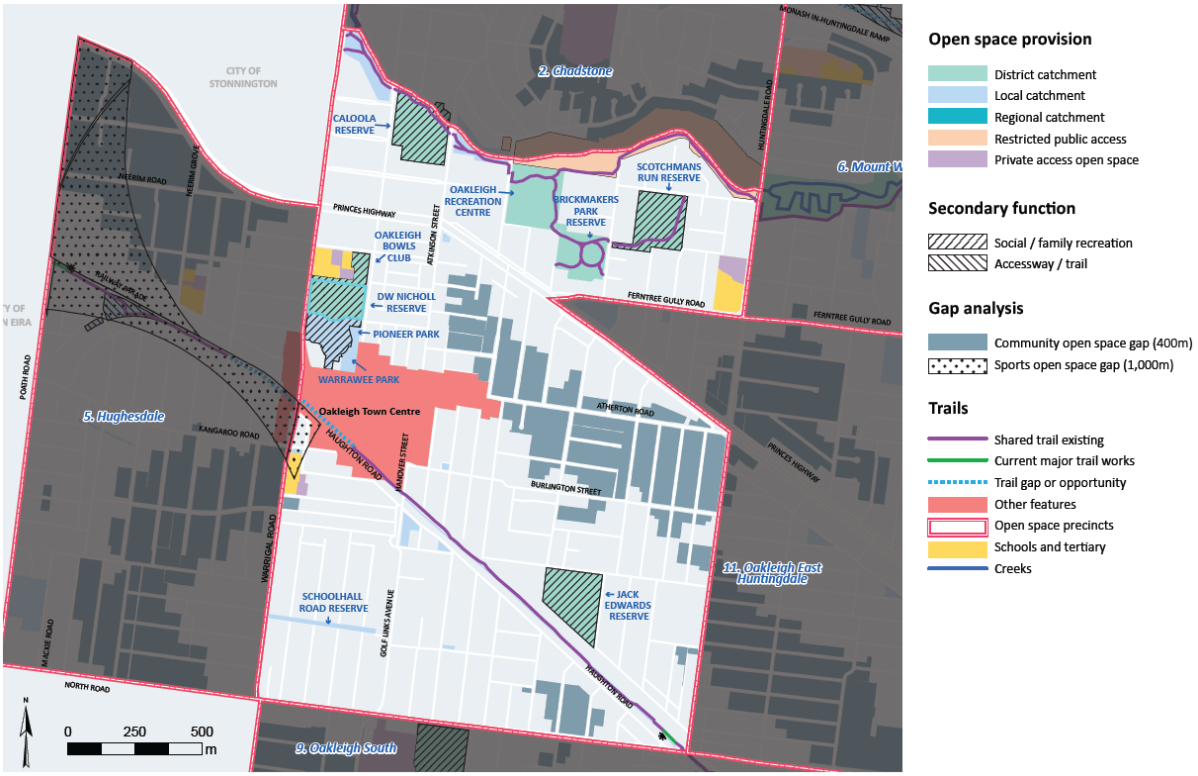
Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - Area around Cleek Avenue, Picadilly Street, Sumersett Avenue and Taunton Avenue.	Local Park - New	4750		$14,470,500
New Park - Area around Devoy St and Dermot St.	Local Park - New	5300		$19,386,000
Park Improvements - Progress Park and Stan Riley Reserve (possible road closure).	Local Park - Improvements			$900,000
Park Improvements - Davies Reserve (including public toilet).	Local Park - Improvements			$800,000
Park Improvements - Talbot Reserve.	Local Park - Improvements			$250,000
Park Improvement s- Robinson Street Reserve - Construct Playground.	Local Park - Improvements			$350,000
Total		10,050	0	$36,156,500

Precinct 10 Oakleigh

Oakleigh has some of the earliest development in Monash and is likely to experience substantial growth. This growth will be around the Oakleigh Major Activity Centre, and the commercial land along Dandenong Road. Much of this development will be high density, increasing demand for open space.

Land prices in Oakleigh are high for a number of reasons including past subdivisions and small lot sizes making land assembly and acquisition more challenging. However offsetting this, contributions will also be higher.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Oakleigh	9,921	15,845	7,033	59.71%



Implementation Actions – Oakleigh

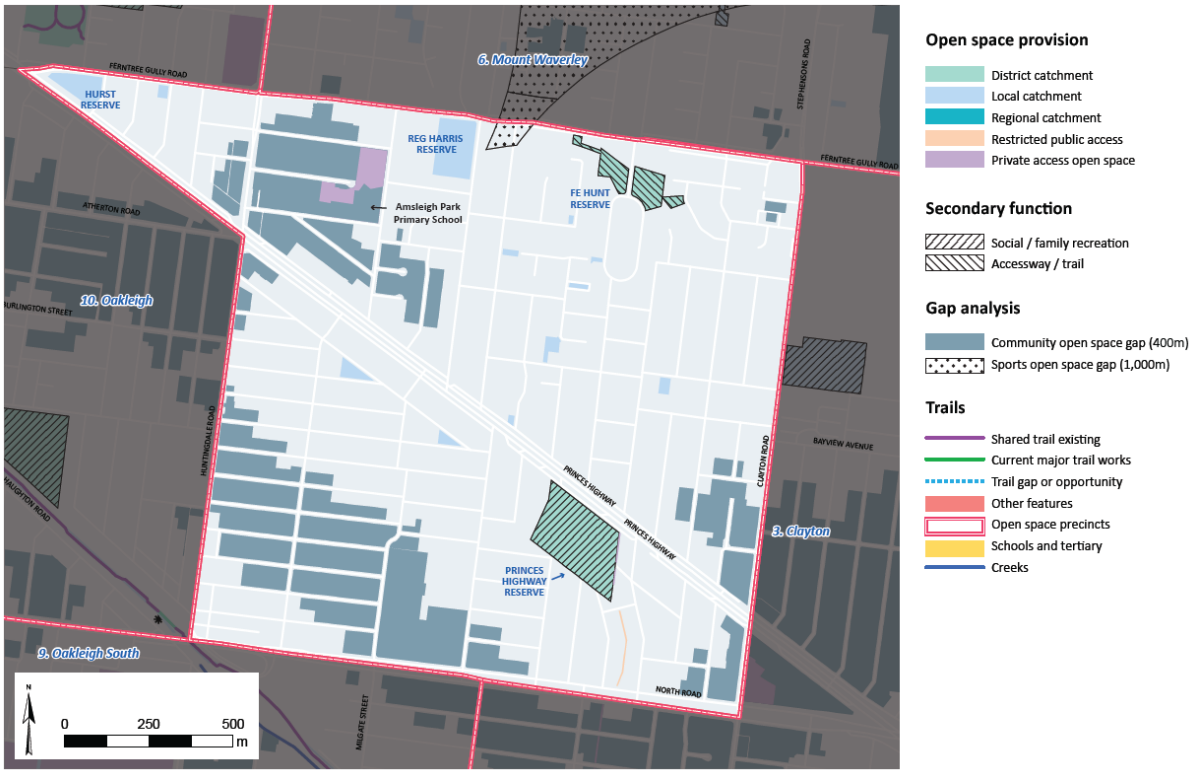
Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - Area around The Avenue.	Local Park - New	5000		$30,500,000
New Park - Area around Merbow St and Connell Rd.	Local Park - New	5000		$17,138,500
New Park - Area around Burlington St, William St & Henry St	Local Park - New	4500		$20,546,000
Park expansion - Wilson Street Reserve.	Local Park - New	5000		$18,994,500
Address the gap in the Clayton Rail Trail.	Path - New		350	$175,000
New Path - Golf Links Road/Hannover Street bridge.	Path - New			$100,000
Park Improvements - Caloola Reserve - Enable increased load/capacity (EG Surface improvement, Irrigation, site drainage).	Sporting Reserve - Improvements			$1,000,000
Park Improvements - Brickmakers Park - Enable increased load capacity of reserve and more greenery for picnics.	Local Park - Improvements			$750,000
Park Improvements - Scotchmans Run Reserve - Increase load capacity of Baseball and soccer fields.	Sporting Reserve - Improvements			$750,000
Park Improvements - Oakleigh Youth Club Playground.	Local Park - Improvements			$450,000
park Expansion - Schoolhall Road Reserve.	Local Park - New	4500		$18,041,000
Total		24,000	350	$108,445,000

Precinct 11 Oakleigh East/Huntingdale

Oakleigh East and Huntingdale are small Sough is a small suburbs anticipated to receive significant growth, albeit from a small base. Huntingdale also has large areas of Industrial land poorly serviced by open space.

There are three larger gaps in the precinct.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Oakleigh East/ Huntingdale	8,930	11,306	2,376	26.61%



Implementation Actions – Oakleigh East/Huntingdale

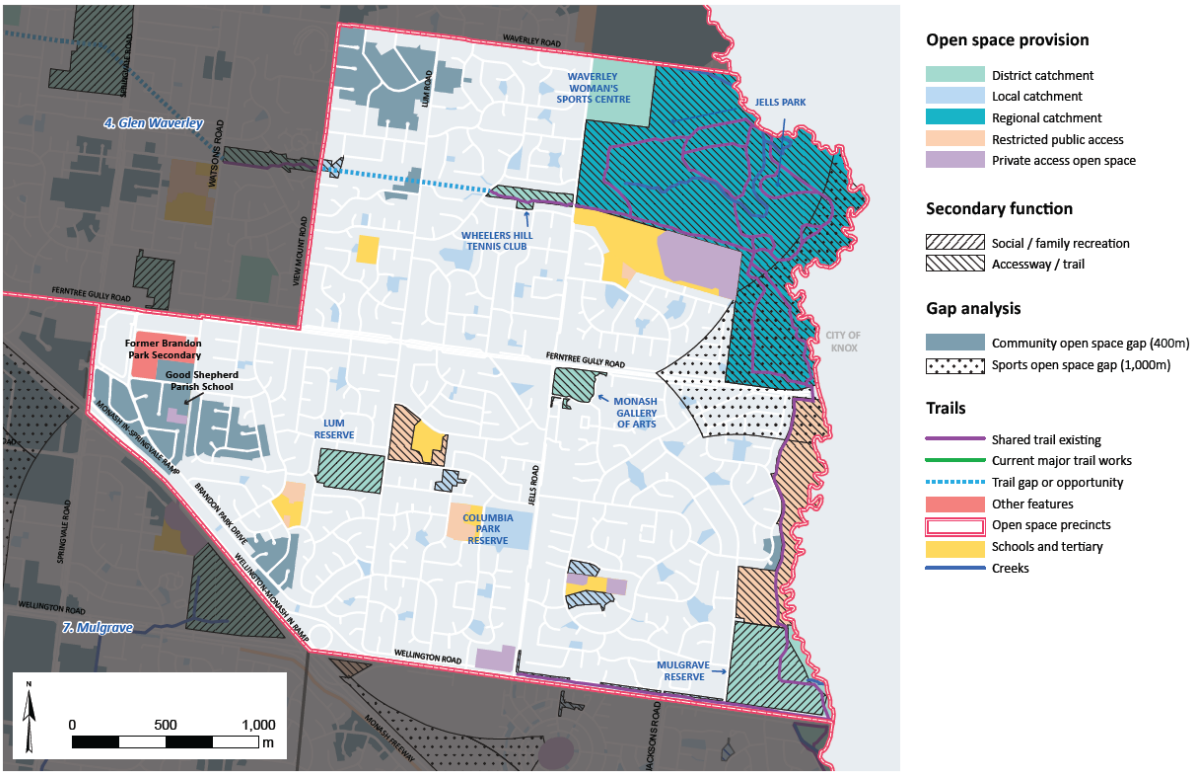
Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Park - Area around Curran Street.	Local Park - New	5000		$14,325,500
New Park - Area around Ross Street, Beauford Street and Shafton Street.	Local Park - New	5000		$16,075,650
New Park - Clifford Street, Shafton, Stafford, Fenton Streets area. NEIC Framework Plan to provide more locational guidance.	Local Park - New	3000		$5,150,000
Park Improvements - Reg Harris Reserve including a circuit path.	Local Park - Improvements		450	$575,000
Park Improvements - Princes Highway Reserve to carry increased load (irrigation, expand playground, improved landscaping).	Sporting Reserve - Improvements			$1,000,000
Park Improvements - Fee Hunt Reserve.	Local Park - Improvements			$250,000
Park Improvements - Strelden Avenue Reserve.	Local Park - Improvements			$200,000
Park Improvements - Greville Street Reserve.	Local Park - Improvements			$100,000
Park Improvements - Vernon Street Reserve.	Local Park - Improvements			$100,000
Total		13,000	450	$37,776,150

Precinct 12 Wheelers Hill

Wheelers Hill was predominantly developed in the 1970's and 1980's. It is generally low density with the majority of residential land being in the Neighbourhood Residential Zone. The street layout limits walkability and connectivity, particularly in areas poorly served by open space.

The Brandon Park Major Activity Centre is located in Wheelers Hill, and supports some low and medium rise development (to 8 stories). This site is serviced by the sporting reserve on the opposite side of Ferntree Gully Road. The General Residential Zone area to the south and south east is poorly serviced by open space, made worse by poor road connectivity.

Population change forecast 2021 to 2036				
Precinct	**2021**	**2036**	**Pop change**	**% increase**
Wheelers Hill	22,351	24,945	2,594	11.60%



Implementation Actions – Wheelers Hill

Description and Location	Project Type	Land acquisition area (m2)	New path length (m)	Total Cost
New Toilet - Lum Reserve.	Toilet - New			$250,000
Public Toilet Improvements/upgrade - Mulgrave Reserve.	Toilet - improved			$100,000
New Park - Area around Brandon Park Drive, Graduate Crescent.	Local Park - New	5000		$13,165,500
New Park - Area around Regina Street, Teversa Crescent.	Local Park	4500		$11,744,500
Total		9,500	0	$25,260,000

General upgrades

Playgrounds

The City of Monash comprises 103 playgrounds in public open space. While the implementation plan has allowed for new playgrounds to be constructed, it has not considered incremental upgrades of equipment to increase capacity.

Many of these playgrounds are relatively small with two to four pieces of equipment. As these playgrounds are renewed, many of these will require expansion to service an increased population. It has been assumed that approximately 2.5 playgrounds each year will require an upgrade (usually, but not always at renewal stage), and the average cost of that upgrade will be $75,000.

Park upgrades

With decreasing lot sizes, more parks will be used for longer periods of time by residents. While substantial upgrades have been considered in each precinct, minor upgrades have not. There will become an increased need for infrastructure to support more socialising and longer stays such as picnic tables, fencing of playgrounds, shelter structures, water bubblers, waste disposal and benches.

An average of $100,000 a year over the next 15 years will be spent across Monash on these minor upgrades.

Playground upgrades.	Across Monash			$2,896,875
General Park Improvements.	Across Monash			$1,500,000

5. OPEN SPACE CONTRIBUTION RATE

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

5.1. Calculating an Open Space contribution for Monash

The calculation of open space contribution requirements is founded on three key principles

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.
2. All residents (existing and future) of the City of Monash are entitled to enjoy access to a reasonable standard of open space at a given horizon year, and planning for future open space acquisitions and upgrades should seek the most equitable distribution of open space services across the City.
3. An inclusionary requirements approach means that all development should equip itself with sufficient open space to meet its needs as indicated by planning standards, and this can be through land or cash in kind contributions.

The inclusionary requirements frame implies open space contribution rates have been calculated so all development contributes open space to ensure 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.

Step 1. Open Space Service Standards

The first step in determining open space contribution rates is to refer to the established open space service standards of the Monash Open Space Strategy. The adopted service standard is arrived at from a combination of appropriate service provision standards including distance to open space, the role of open space, infrastructure and improvements required to meet future community needs. These factors allow the development of a “budget or basket” of land acquisitions and physical improvements and infrastructure requirements to meet open space service standards for the future needs of the overall community. This overall budget of open space improvements is then used as part of the calculation of the open space contribution. This has been assessed on Precinct by Precinct basis and then aggregated to a total value.

Step 2. Open space and infrastructure required for future population

The second step identifies the appropriate proportion of open space requirements from Step 1 attributable to the needs and demand generated by the future population within the City of Monash. This is based on achieving the service provision standards to meet the needs of the future population. This is determined based on population growth, population distribution, forecast dwelling type, forecast open space utility to the new population, proximity to existing open space, the service standard provided by existing open space and infrastructure improvements required to meet the service standards for the new population. This has been assessed on Precinct by Precinct and individual project basis and then aggregated to a total value.

Apportionment calculation

There is not a clear directed way to apportion costs for open space infrastructure. *Planning Practice Note 70 – Open Space Strategies* is silent on any whether or how any apportionment should be undertaken. Most Open Space Strategies have apportioned costs on a project by project or precinct by precinct basis considering a range of variables, primarily based on the proportion of demand that will be driven by new and existing development.

At Melbourne Amendment C209, one party submitted that apportionment should be split between the proportion of current and future population over the planning horizon. That is the Melbourne Open Space Strategy predicted that by 2026, 31% of the population would have moved in after the strategy was prepared, so future residents should only fund 31% of infrastructure. The panel did not support this course approach as it failed to address the many qualitative elements on which apportionment should be based.

At the other end of the scale is the approach that all future open space should be funded entirely by new development as all existing open space has been funded by existing development and ratepayers. If there is a surplus of open space, the benefits of that surplus should be enjoyed by the existing community who've funded it.

Monash have elected to take an approach of apportioning each individual project based on where the demand is generated. Following identification of individual projects, costs for each project were apportioned between future development, and new development. Considerations for apportionment were:

- Expected population growth in the area (predominantly within 400 metre walking distance but also considering the precinct).
- Development type (in particular the type and size of private open space likely to be provided).
- Existing service levels of open space and capacity.

Projects were then ranked from 1 to 4 dependent on the demand being driven by new development with 1 being demand driven equally by new and existing development, and 4 being demand driven fully by new development. Those in category 1 were apportioned 25% to new development and 75% to existing development based on predicted residential population growth. Those in category 4 were apportioned 100% to new development. Category 2 and 3 were apportioned 50% and 75% to new development respectively.

Case Study 1
New Park - Kanooka Grove Clayton

A new 5000m2 park is proposed in this location. The western side of Kanooka Grove is in the Residential Growth Zone, and northern half the eastern side is in the Residential Growth Zone, and the balance in the General Residential Zone.

Monash Hospital's main campus abuts Kanooka Grove and the Clayton Train Station, future Suburban Rail station and commercial core of the Clayton Major Activity Centre are 400m from Kanooka Grove.

Fregon Reserve is located approximately 480 metres walk to the north from the corner of Rose Street and Kanooka Grove. Fregon Reserve is a sporting oval with a small playground.

The area is likely to undergo significant redevelopment in the future, particularly in the Residential Growth Zone. Given the age of the housing stock and the location, it is likely that substantial renewal will occur. Redevelopment is expected to be higher density than most other parts of Monash with planning controls encouraging apartments and higher density townhouses

Clayton's population is anticipated to grow by around 48% and the areas in close proximity to Monash Hospital, Clayton Activity Centre commercial core and Monash University are expected to take the majority of this growth.

Some new residents will use Fregon Reserve due to its size and its facilities such as cricket nets and perimeter path, however it has limited capacity to expand its functionality for more leisurely uses such as picnics and BBQ's and has a small playground.

This has been apportioned 75% to future development and 25% to existing. Population growth is expected to be substantial, and in higher density development with less private open space than existing development offers will lead to increased demand. But the reserve will provide more accessible open space to some existing residents, particularly those south of Rose Street.

Case Study 2
Public Toilet – Electra Reserve Ashwood

A new public toilet is proposed at Electra Reserve in Ashwood. Ashwood is expected to experience some population growth. Electra Reserve is a large reserve featuring a large playground, smaller greens for sport (such as croquet, bocci), and indoor pavilions, and has capacity for increased usage.

The playground was substantially upgraded in recent years, and is one of the larger playgrounds in Monash attracting high usage. While toilets are located in the pavilion, they are only accessible when it is open, and are a 300 metre walk from the playground.

The need for a public toilet closer to the playground that is available at all times has been identified as proposed as part of the implementation plan.

Development in Ashwood (and the adjoining Mount Waverley) is expected to be predominantly townhouse type development with a below average number of apartments.

This has been apportioned 25% to future development and 75% to existing, reflecting the proportion of the future population. The new toilet will not materially affect the load capacity of the reserve, but will improve the amenity and usability for all users.

Funding Equity

Overall this resulted in 71% of costs being applied to new development for future residents and workers, and 29% of costs being apportioned to existing development. The proportion of costs applied to new development is higher than existing because the above does not take into account the contributions that the existing population has already made to existing open space.

Looking at it purely from the perspective of quantity of open space, Monash currently has 512 hectares of public open space and expansion of 25 hectares is proposed. Using the above apportionment, 7 hectares would be attributable to demand (and funding) from the existing community, and 18 hectares to new and future development. In effect pre-2021 development would have funded 96.7% of open space area, and post-2021 development would have funded 3.3% of open space area, despite population post 2021 residential population growing by 22.3% and worker population growing by 26.9%.

Employment Land

Open space in employment areas has been considered together with open space in residential areas as the inclusionary approach has been taken for the whole of Monash. However, the two can be separated out.

The ownership pattern of employment land is generally different to that of residential land. Residential land is predominantly owner-occupied whereas employment land is predominantly investor owned. This means that residential land almost always subdivided, whereas employment land is not necessarily with various investment vehicles enabling smaller investments or shares into the entity that owns the larger site.

This means that the collection trigger for open space, being subdivision, is triggered less frequently than it is for residential land resulting in fewer open space contributions, despite need for open space being similar. In the four years nine month historical period that subdivisions were analysed, only 8 subdivisions on industrial land occurred, or an average of 1.68 a year. In the same period, 21 subdivisions in the Commercial 1 Zone occurred, however in all of these 21 cases, the majority of new lots created were residential apartments so these subdivisions were classed as residential.

The open space needs identified for all future employment land have been costed at just under $39 million. It is forecast that $100.8 million of employment land will be subdivided between now and 2026. If separate approaches were taken, this would equate to an employment land contribution rate of 38.69% by allocating all costs for open space for new workers to sub-divided employment land.

Step 3 N**et developable land for growth**

The total net developable urban area (net developable land) required to accommodate that forecast growth is then estimated using property development history, planning policy, zoning provisions and forecasts of future development activity to arrive at a net developable land area likely to be required to accommodate the forecast population increase. The value of that area of land is then calculated to provide an overall value for the development area.

Calculating the Open Space Contribution

The value of the of open space improvements apportioned to the future community is then divided by the total net urban land area (developable land) to accommodate that growth.

This leads to an open space contribution rate of 10 per cent for all commercial, residential and industrial land uses within Monash. This is quantified in the table below.

Item	Metric	Value
A	Cost of open space improvements and additions apportioned to forecast population growth to 2036	$606,802,563
B	Value of net developable land to accommodate forecast growth	$4,585,285,670
C	Open space contribution requirement from new development as a % of total site value (A divided by B = C)	10 per cent**

**The figure is actually 13.23% but has been rounded down.