



namatjira park master plan

issues and opportunities.

disclaimer.

Information contained in this document is based on available information at the time of writing. All figures and diagrams are indicative only and should be referred to as such. This is a strategic document which deals with technical matters in a summary way only.

acknowledgements.

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prepared for.

City of Kingston
www.kingston.vic.gov.au
ABN: 80 6403 772 47
A: PO Box 1000, Mentone 3194
T: 1300 653 356
E: info@kingston.vic.gov.au



prepared by.

theCommunityCollaborative.
www.thecommunitycollaborative.com.au
ABN: 40 266 432 171
A: G06/126 Carlisle St, St Kilda 3182
T: 0432 334 054
E: info@thecommunitycollaborative.com.au

theCommunity
Collaborative.

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summary report in short.

what?

The City of Kingston appointed planning consultant *theCommunityCollaborative*. to develop a Namatjira Park Master Plan in partnership with Council and its stakeholders.

The overall aim of the Master Plan is to develop a strategic direction and vision for the reserve which considers matters such as existing user's sporting requirements; the needs and interests of future users; local community passive leisure and recreational needs; the issue of ageing infrastructure; the location and orientation of infrastructure; the way in which the site links to neighbouring open space and residential areas; pedestrian and vehicle access; and much more!

Consideration will be given to how best to create a space that effectively balances environmental, financial and infrastructure requirements.

why?

Kingston, along with the rest of Melbourne, has experienced significant population growth in recent years. At the same time, it has seen a boom in sport and recreation participation from women and girls. The result is sporting clubs in Kingston are growing from strength to strength - which is great!

But we also know that changes in work patterns and lifestyle, and cost, time, and transport issues, are all driving people to active recreation options that best fit individual circumstances. Walking, fitness, and gym, and jogging or running are some of the highest participated activities.

This all means there is greater demand for playing fields, change rooms, playgrounds,

trails, paths and other public facilities to support participation – which Council is under increasing pressure to provide.

The COVID-19 pandemic also continues to disrupt and impact Australians and their communities. In particular, it has had a significant impact on organised sport, with fears that a complete 'return to normal' from a participation and revenue perspective will never eventuate.

Consequently, as part of Council's commitment to support sport and recreation and improve its open spaces, we developed this master plan to allow Council to work collaboratively with the community to set the long-term vision of the reserve to ensure it continues to meet community need.

where?

Namatjira Park is a 12.1 HA site in Clayton South that provides a diversity of opportunities including social, family, sport, recreation, play and environment experiences.

The reserve has a single oval, single tennis court, sporting pavilion, bowls club and bistro, skate park, playground, tennis wall, basketball half court, and dog off-leash park.

It is currently home to four organised sporting tenants, including traditional training and competition use for gridiron, competition only use for cricket, and year-round use for bowls.

The site also has wetlands with a catchment area of 634ha. The wetlands treat stormwater before it reaches Port Phillip Bay, and in 2012 was subject to an upgrade of an existing retarding water basin that now provides for flood protection of local properties, a sheltered wetland home for native wildlife and an improved public amenity.

who?

We have undertaken a comprehensive stakeholder engagement program to understand the current uses, parameters and needs of Namatjira Park, including Project Working Group meetings, council staff interviews, Stakeholder Reference Group workshops, stakeholder needs statements and a community survey.

We received some important feedback through this process, with a particular focus being on retaining the wetlands, trees and 'naturalness' of the site, traffic management, community safety improvements, sports facility upgrades, skate/ bmx development, and playground upgrades.

Based on the feedback received, draft concept plans were developed that pose possible site improvements and upgrades.

Another round of Stakeholder Reference Group and Project Working Group engagement sessions were undertaken to test and challenge early design thinking.

Following this, the concept plans were further refined into a preferred Draft Master Plan.

This will be released for public consultation with feedback anticipated via a range of methods including: a dedicated project page on the 'Your Kingston Your Say' website; public submissions; tenant club submissions; and a community drop-in session.

how?

The overarching design vision for the reserve is: *"Create a high-quality public realm that includes multi-functional built infrastructure and green open spaces suitable for a diverse mix of passive and active sport and recreational activities."*

This will be achieved through the implementation of a set of guiding principles that will inform future development of the site, focused on: Sport and active recreation infrastructure; Public amenity; Safety; Mobility and access; Parking/traffic; Tree and vegetation management; and Sustainability.

The Namatjira Park Master Plan must propose facilities and elements to support an existing demand for sport and active recreation and an increase in passive recreation, offering a range of opportunities for the improvement of the health and wellbeing of the Kingston community.

A range of active sport and recreation infrastructure upgrades are proposed, such as expanding the field of play, renewing the exercise equipment and a pavilion upgrade.

However, a key component of the Master Plan is supporting the existing passive, social and non-competitive spaces such as increasing pedestrian access and improving the path network throughout the reserve, provision of additional gathering spaces and shade/seating areas etc.

The benefit of getting the balancing act just right between active and passive activities ensures use of the reserve is maximised, boosting the local amenity of the site and reinforcing whole of community ownership.

Supporting additional use of the site beyond traditional sporting pursuits will also assist in increasing site safety and surveillance through more 'eyes' around the space, deterring vandalism and other anti-social behaviours

The following key directions are proposed:

- Provision of two rectangular fields
- Accommodate new sporting club during winter sporting season
- Pavilion upgrade and relocation
- Upgrade of floodlights + ancillary facilities
- Provision of cricket nets
- Update fitness equipment + playground
- Develop urban recreation zone that combines tennis court, basketball court, tennis hitting wall, skate/bmx facilities and other infrastructure in single area
- Continue to preserve wetlands as a 'natural oasis' with limited development
- Provision of limited additional car parking
- Improve security lighting throughout
- A range of well vegetated areas will support landscape improvements
- Improve pedestrian links to sports field from all carparks
- Provision of distance markers throughout trail network
- Formalise existing pedestrian access entry points and promote adherence to CPTED
- Develop a shared path along the Mordialloc Settlement Drain
- Ensure stormwater connections are prioritised and consider installing irrigation of open space areas as part of any future works to support provision of 'cool refuges'

when?

The Master Plan is anticipated to cost in the order of \$9,257,500 and is recommended for implementation over a 5-7 year period.

what?
why?
where?
who?

the state of play.



what?

about the project.

overview.

As part of Council's commitment to improve its open spaces, developing a Namatjira Park Master Plan allows Council to work collaboratively with the community to set the long-term vision for the reserve to ensure it continues to meet the current and future needs of the community.

The overall aim of the Master Plan is to develop a strategic direction and vision for the reserve which considers matters such as: existing user's sporting requirements; the needs and interests of future users; local community passive leisure and recreational needs; the issue of ageing infrastructure; the location and orientation of infrastructure and facilities; the way in which the site links to neighbouring open space and residential areas; pedestrian and vehicle access; and future management requirements.

The master planning process must be responsive to the current needs of space, facilitate community growth, and guide ongoing management and future decision-making for the site in a way that balances environmental, financial and infrastructure requirements.

project delivery.

The City of Kingston appointed independent consultants **the Community Collaborative** to lead a project team in providing project management and associated planning, investigations, and design services for the successful delivery of the Master Plan.

This project required: an informed synthesis and analysis of background data and research; facilitation of procurement and management of technical sub-consultants; effective communication and engagement between Council, key stakeholders, and the wider community; direct engagement of design team; development of site concept plans and pavilion layout sketches; and the delivery of a final master plan and report.

methodology.

To facilitate this, the Master Plan is expected to be delivered in eight distinct steps. It is anticipated that following the successful completion of these steps, a formal Council endorsement process will be undertaken, anticipated to occur in June/July 2021.

STEP 1 - Oct 2020



Demand Assessment

Literature review
Demographics
Needs analysis

STEP 2 - Nov 2020



Consultation - phase 1

Staff, sport clubs, residents + other users

STEP 3 - Dec 2020



Technical Site Assessment

Site survey
Tree investigation
Traffic review

STEP 4 - Dec 2020



Consultation - phase 2

Review site assessment
Options analysis

STEP 5 - Jan 2021



Design development

Site layout design

STEP 6 - Feb 2021



Consultation - phase 3

Review of draft layout designs

STEP 7 - Mar/Apr 2021



Draft Master plan

Consult review
Design response
Implementation

STEP 8 - May/June 2021



Consultation - phase 4

Council reporting
Public exhibition

why?

strategic context.

key drivers.

changing trends in sport and recreation.



People are now increasingly looking to casual, pay-as-you-go or often free physical activity options to fit into their increasingly busy lifestyles to achieve personal health objectives.

This means that increasing opportunities to participate in these active recreation pursuits, while continuing to support traditional sport, may offer the best opportunity to improve the health and wellbeing of our community. The ability of our open space areas to meet the changing leisure and recreational needs of our population is becoming an increasingly important issue. Many councils have, or are now beginning to install, infrastructure that is typically used and designed for social and non-competitive sport and recreation uses.

asset renewal.



A number of the existing assets at Namatjira Park are nearing the end of their functional life and require renewal in the short to medium term.

This presents a unique opportunity for Council to develop a complimentary Master Plan that proposes a range of additional reserve improvements, ensuring that the whole reserve continues to meet the needs of the community now and into the future.

population growth.



Kingston's population is projected to increase by more than 32,000 people, and the area in and around Clayton South by over 3,000 people, in the next 20 years.

Across Kingston, those in the traditionally 'active' age range' of 5 to 34 years is projected to increase by nearly 9,000, while those over 60 years is projected to grow by over 14,000 people. We must ensure the facilities and infrastructure we provide to the community continue to support participation by all ages and abilities.

coordinated planning.



With changing trends in participation, a growing and ageing population, and asset renewal responsibilities, a coordinated approach to planning is vital.

National, State and Local strategic priorities provide valuable guidance on how we respond to these challenges and have been key pillars in our approach to developing the Master Plan. The development of Master Plans for reserves within the municipality that incorporate strategic directions from National (Sport 2030), State (Active Victoria) and local (Kingston Sport and Recreation Strategy) policies and plans ensures Kingston continues to deliver the best outcomes for the community.

literature review.

local.

The **Council Plan** provides clear direction for the master plan, particularly 'Goal 2 – Our sustainable green environment with accessible open spaces' that states Council will:

- Provide for a variety of sport and recreation opportunities across Kingston;
- Determine and respond to the current and future needs of sports clubs for facilities and open space planning;
- Improve passive open space and promotion of sport and recreation opportunities; and
- Develop and implement park and reserve improvement plans in conjunction with the community.

The development of the **Kingston Planning Scheme** has been strongly guided by our understanding of the critical land use issues which are likely to challenge Kingston's future growth and development into the new millennium. It focuses on ensuring that the location and development of existing and proposed open space is appropriate to the current and projected recreational needs, fulfils an identified user need, and is able to cater for a variety of lifecycle needs. It also encourages the development of 'multi-use' open space facilities to maximise flexibility in facility use and to assist in reducing costs of facilities.

The **Public Health and Wellbeing Plan** provides a strategic direction for Council's work to improve the health and wellbeing of the community and identifies a number of key objectives focused on: Increasing participation in physical activity, community activities and volunteering; improving community safety, social cohesion and reducing social isolation; while ensuring facilities, service and open spaces are accessible and equitably provided.

Interestingly, it also highlights the following key statistics which highlight the need for effective and efficient planning for sport and recreation facilities and reserves:

- Less than one-third of the Kingston population meets the recommended amount of physical activity each week;
- Kingston residents spend on average 4:37 hours sitting at work on a usual day
- Just over half (57%) of our population is overweight or obese;

The **Sport and Recreation Strategy** provides the guiding framework for the future planning, provision, development and management of sporting and recreation opportunities. Of particular note for Namatjira Park it notes:

- Complete renewal of sports pavilion to meet sporting needs was a high priority
- Existing oval lighting was non-compliant
- Only small growth in lawn bowls likely and existing number of greens is sufficient
- Future investment should be focused on increasing participation e.g. floodlighting, surface upgrades, and provision of female friendly pavilion facilities; and
- Investigate opportunities to embellish reserves with active recreation facilities.

The **Open Space Strategy** guides the future provision of accessible, safe and well utilised open spaces in Kingston, and specifically notes to provide an additional free access court at Namatjira Park to assist in the provision of tennis participation in the Clarinda/Clayton South area, reinforce the skate park as a District standard active youth precinct, improve access for residents west of Frank Ave, and provide dog off-leash areas.

The **Active Youth Spaces Strategy** provides a dependable and robust framework for the provision of Active Youth Spaces in Kingston, and suggests to reinforce the Namatjira Park skate park as a District standard active youth precinct by improving the quality, standard and scope of facilities available.

The **Gambling Policy** notes that Council will not support new agreements for Council owned or managed land or facilities to be provided to any groups who undertake gambling activities in Kingston or elsewhere, unless there is significant community benefit demonstrated – which may impact any development of the existing Bowls Club premises (which includes EGMs).

The **Integrated Water Cycle Strategy** includes targets to provide alternative water sources to improve amenity across council assets - including open space; and to provide best practice stormwater treatment. It provides direction for utilising harvested stormwater to irrigate sports fields and other open space.

The **Urban Cooling Strategy** establishes actions for utilising harvested stormwater to irrigate areas of active and passive recreation to enhance amenity, provide water for enhanced greening and provide cool refuges.

state.

The Victorian Government's **Active Victoria** provides a strategic framework for sport and recreation in Victoria. In particular, it highlights the need for increasing the capacity of sport and active recreation infrastructure and creating flexible and innovative participation options, supporting non-organised and unstructured physical activity, and investing in infrastructure that enables active recreation. A renewed focus on supporting active recreation is an important consideration for proposed developments within the Master Plan.

Plan Melbourne is the Victorian Government's Metropolitan Planning Strategy and outlines a number of key challenges that we face including managing population growth, growing the economy, creating affordable and accessible housing, improving transport, responding to climate change, and connecting communities. Of particular note for the Master Plan is the Strategy's direction to 'Strengthen protection and management of green wedge land', 'Develop a network of accessible, high-quality, local open spaces', 'Support a cooler Melbourne by greening urban areas, buildings, transport corridors and open spaces to create an urban forest' and an overarching commitment to responding to climate change through energy, water and waste performance.

AFL Victoria's **Melbourne South Football Facilities Strategy** highlights an expected increase in participation that will require an additional 3 grounds in Kingston in the future. As such, it pays particular attention to the need to increase the quality and functionality and maximise the use and carrying capacity of existing facilities to ensure they can support existing and new demand.

The **Victorian Cricket Infrastructure Strategy** provides an integrated and strategic approach to the future provision of, and investment in cricket facilities for the next 10 years. It states that the South East Bayside region should focus on improving turf management and the condition of synthetic pitches and practice facilities, increase access to underutilised space (e.g. schools), improve provision of inclusive facilities and pavilion/change room facilities (e.g. female friendly design) and review the current ratio of synthetic/turf pitch provision. The Master Plan will particularly benefit from following Cricket Victoria's guidance regarding inclusive facilities, practice facilities and practical provision of turf pitches.

national.

Sport 2030 - National Sport Plan articulates the Australian Government's clear and bold vision for sport in Australia — to ensure we are the world's most active and healthy nation, known for our integrity and sporting success. This is underpinned by the key priority of 'More Australians, more active, more often' which provides a clear mandate to continue to invest in recreation facilities at a local level.

The Australian Government and CSIRO's **Future of Australian Sport** report further states that sports played in Australia, as well as how and why we play them, are changing over time. Individualised sport and fitness activities are on the rise - participation rates in aerobics, running and walking, along with gym memberships, have all risen sharply over the past decade, while participation rates for many sports have held constant or declined.

Cricket Australia's **Community Cricket Facility Guidelines** defines community cricket facilities, their purpose and core cricket uses. It notes that club 'satellite' venues, such as Namatjira Park, do not require any turf pitches and only require 2 synthetic practice pitches to be a suitable venue for this level of cricket.

covid-19 impacts.

The COVID-19 pandemic continues to disrupt and impact Australians and their communities. In particular, the coronavirus pandemic has had a significant impact on organised sport as these gatherings were put on hold to adhere to health advice.

A number of research groups/projects have commenced investigating the short and long-term impacts of the COVID-19 pandemic on physical activity and wellbeing finding:

- COVID-19 appears to have prompted the need for more frequent participation with an increase in adults saying they had deliberately been more active, however children were more impacted
- Non-sport-related activities kept adults active during lockdown. Recreational and fitness activities (such as walking, jogging and cycling) were most popular
- Australia's 70,000 sports clubs have lost an estimated aggregate \$1.6bn due to COVID-19. Nearly 70% predict a decline in participants and 43% in volunteers
- Overall over 16,000 community sports clubs nationally are at risk of closure
- This would have a devastating impact on health and wellbeing for millions of Australia's sports participants

participation trends.

An analysis undertaken by SportAus, utilising aggregated data from 2015-16 FY to 2019-20 FY, notes the following key insights nationally:

- Participation in sport and physical activity has increased overall in the last two decades. More adults participate more frequently in 2020 compared to 2001.
- Female participation has remained on par with male participation throughout. However more women have constantly participated more often.
- The ACT has always had the highest participation rates over the years, while Victoria and SA has seen most progress (Victoria has grown from 77.4% to 91.0%).
- Participation in sport-related activities hasn't increased, while at the same time non-sport physical activities have increased significantly
- non-sport related activities has grown from 46% to 74%
- Participation in non-sport recreational activities such as walking and fitness/gym have increased the most. Individual sport activities such as running/jogging and cycling have seen upticks, while golf and tennis have significantly dropped.

The SportAus analysis also identifies the following key insights at a state level:

- Participation rate of 75.9% for children (73.5% national) with participation peaking at ages 9-11 (91.8%) before dropping off between 12-14 (85.8%) and then increasing again at age 15-17
- Indigenous (80.3%) children have a higher participation rate than the state and national total participation rate, while CALD (67.8%) and LOTE (65.8%) children participation is significantly lower
- Participation rate of 90.1% for adults (higher than national average of 89.4%) with participation peaking at ages 15-17 (95.5%), remaining relatively steady from 18-54 (around 91%), before dropping off from 55 onwards (89.4% and 86.8% for 65+)
- Indigenous (85.8%), CALD (86.3%) LOTE (84.2%) and PWD (81.4%) adults all have lower participation rates than the state and national total participation rate
- 58% participate in sport-related activities and 72% in non-sport activities
- 34.9% met Australia's Physical Activity and Sedentary Behaviour Guidelines

- Importantly, the same analysis by SportAus identifies the following key insights from local participation data for Kingston:
- Participation rate of 93.1% for adults, higher than both state and national averages
- Participation rate of 85.0% for children, higher than both state and national averages
- Pilates is the only activity in Kingston's top 10 participated activities that is not represented in the state and national top 10 activities
- Kingston also has a significantly higher participation rate in golf, likely testament to the wealth of golf courses throughout the Sandbelt region
- Kingston's top 5 activities, all of which are 'recreational' activities, all have higher participation rates than state and national averages

Figure 1. Top 10 participated in activities (all ages)

| Activity | Participation rate (%) | |
|-------------------|------------------------|--|
| | Kingston | |
| Walking | 38.9 | |
| Fitness/gym | 32.9 | |
| Swimming | 23.7 | |
| Running/athletics | 14.9 | |
| Cycling | 11.1 | |
| Golf | 7.3 | |
| Pilates | 6.0 | |
| Tennis | 5.7 | |
| Basketball | 5.1 | |
| Yoga | 5.1 | |

Figure 2. Top 10 participated in activities (adults)

| Activity | Participation rate (%) | | |
|-------------------|------------------------|------|----------|
| | Kingston | Vic | National |
| Walking | 47.3 | 45.4 | 43.9 |
| Fitness/gym | 39.0 | 35.5 | 34.7 |
| Swimming | 19.8 | 14.3 | 15.4 |
| Running/athletics | 17.2 | 16.5 | 15.9 |
| Cycling | 13.2 | 13.3 | 11.7 |
| Golf | 8.6 | 5.3 | 4.8 |
| Pilates | 7.3 | - | - |
| Yoga | 6.0 | 5.4 | 5.2 |
| Tennis | 5.7 | 5.1 | 4.5 |
| Bush walking | 5.3 | 5.7 | 6.0 |

Figure 3. Top 7 participated in activities (children)

| Activity | Participation rate (%) | | |
|---------------------|------------------------|------|----------|
| | Kingston | Vic | National |
| Swimming | 41.4 | 36.5 | 33.5 |
| Australian football | 20.3 | 14.6 | 8.3 |
| Netball | 14.9 | 7.0 | 6.8 |
| Gymnastics | 14.4 | 9.4 | 9.3 |
| Dancing | 13.3 | 9.2 | 9.0 |
| Basketball | 11.5 | 12.7 | 7.2 |
| Cricket | 8.4 | 6.7 | 5.3 |

demographics.

kingston.

- The City of Kingston population for 2020 is 165,982 and is forecast to grow to 198,340 by 2041 - an increase of 19.5%.
- Nearly one-quarter (21%) are born in a non-English speaking country.
- There are 380 people living in Kingston who are of ATSI background.
- The total number of people estimated to have any type of disability is nearly 20% of the population. 5% need help with their daily living tasks due to a disability.
- The areas predicted to experience the strongest population growth are the linear precinct along the Nepean Highway incorporating Moorabbin, Highett, Cheltenham and Mentone.
- The number of households in Kingston is forecast to grow by 20%. The largest growth will be in people living alone.
- The population has a slightly older age profile when compared to Melbourne, and of importance is that Kingston has a lower proportion of residents in the traditionally active 5-34 years age cohort.
- Kingston also has an ageing population into the future – those aged over 70 are forecast to grow the most.
- Whilst there will be an overall ageing of the population, the number of residents within the active age cohort is still projected to increase by 14,000+ people.

surrounding precinct.

In taking a closer look at the precinct surrounding Namatjira Park, incorporating Clarinda, Clayton South, Heatherton and Oakleigh South, these key insights are seen:

- In 2020 there was a total of 29,362 people living in and around Namatjira Park.
- The Clayton South population is forecast to increase by 20.7% but all other suburbs are forecast to increase less than 6%. This growth is expected to reach 32,737 by 2041, an increase of 3,375 people.
- In line with the ageing population, the age groups forecast for a large growth to 2041 are mostly in the older age groups of 70+ years. However, it is important to note, Clayton South is forecast to experience the majority of its growth between 18 to 49 years.
- There are potentially 5,137 people who have a disability living in the precinct. Of these there are less people who need

help with their daily activities due to a disability, of which the majority are aged over 60 years old, however the proportion of the population is higher than the Kingston average of 5%.

- The suburbs in this profile have the most multicultural populations in Kingston. In 2016, over half of people in Clarinda (50.7%) and Clayton South (63.6%) were born overseas, while Oakleigh South (42.6%) and Heatherton (36.2%) also had higher proportions than Kingston (31%).
- The suburbs in the precinct all also have a higher proportion of their population that spoke a language other than English at home compared to Kingston. The most common language spoken at home (other than English) is Greek with other leading languages including Mandarin, Russian, Punjabi, Khmer and Italian.
- The largest change in birthplace countries of the populations in the precinct over recent years was increases in people born in India and China. Clayton South also had a notable increase in the number of people who spoke Mandarin at home.
- The dominant households in the four suburbs of this profile are families (single parent or couples with children), both are higher than the Kingston average.
- Lone person households are forecast to have the greatest increase in this area.
- The highest unemployment rate was in Clayton South (9.1%) followed by Clarinda (6.8%). Heatherton and Oakleigh South had similar rates as Kingston with 5.4%, 5.7% and 5.4% respectively. Heatherton also has more households in the highest income quartiles than Kingston, while Clayton South has more in the lowest quartiles.
- The precinct had a relatively high proportion of its population on JobSeeker while JobKeeper applications in the precinct were mid-range or at the lower end when compared to Kingston.
- The Clayton South and Clarinda IRSD scores are the lowest in Kingston, indicating they are the most deprived.
- A greater proportion of households in Clayton South have one or less cars compared to Kingston. Households in Clarinda, Heatherton and Oakleigh South are more likely to have two or more cars. All areas show a greater propensity for public transport use.

demand analysis

Utilising the findings outlined in the strategic context, participation trends and demographic profile sections, in conjunction with key strategic documents such as the Sport and Recreation Strategy, the following key impacts on demand for sport and recreation participation can be identified for the site:

- There will be an additional 1,100+ people in the 'active age range' of 5-34 years (nearly 13,000 in total) in the broader precinct area potentially looking to utilise Namatjira Park as a key location to participate in sport and active recreation activities, driven by strong growth expected in the Clayton South area.
- With a large growth in lone person households, the use of Namatjira Park as a place of congregation and social interaction will be intensified and thought must be given to non-sport facilities and ancillary amenities that support and improve its function for activities outside of traditional sport. This will likely also result in a strong focus on dog friendly facilities and dog off-leash areas, which needs to be considerate of providing separation and protection to wildlife.
- The high proportion of CALD communities within the surrounding precinct, combined with Clayton South and Clarinda being identified as the most disadvantaged areas in Kingston, less than one-third of the Kingston population meeting the recommended amount of physical activity each week, and over half of the population being overweight or obese, suggest that the provision of free, unstructured recreation opportunities may be of significant benefit to the community. Consideration of upgraded and/or additional infrastructure that supports improved physical activity outcomes at low-to-no cost to participants should be prioritised.
- The low proportion of the community that either cycle or walk to work provides insight to a community that may feel it does not have access to appropriate facilities to support active transport, while the greater propensity for public transport use suggest an area that is supported by a good network of train and bus services - Clayton South has a train station (Westall) on the Pakenham line and there are six bus routes that travel through Clarinda, Oakleigh South, Heatherton.
- Ensuring Namatjira Park and its surrounds has appropriate infrastructure to continue to support active travel options (such as integrated walk/cycle paths connecting roads into and through the reserve) and public transport access (such as commuter friendly shelters, road crossings etc.) will be important to ensure it continues to serve the communities needs into the future.
- Consideration of the existing form and function of Namatjira Reserve must factor in the expressed future demand for facilities.
- Rationalisation of the current mix of user groups should be investigated, whilst analysis of the current usage of ovals and associated pavilion, and requirement to retro-fit, renew or redevelop should be undertaken to ensure the facility can be utilised to its maximum potential
- Council and state sporting association planning documents state that there is a shortage of indoor courts in the Northern region and there is a need for additional ovals (AFL/cricket) and soccer fields (particularly for the projected growth area along the Nepean Highway).
- It was also noted that the region, and Kingston in particular, has a significantly high provision of turf cricket wickets, providing an opportunity to reconsider the demand for the provision of turf facilities at Namatjira Park in consideration of the higher associated costs and decreased hours of use available as a result.
- In addition, there are recommendations that a complete renewal of the existing sports pavilion and floodlights is required, and the opportunity to reinforce the skate park as a District standard active youth precinct by improving the quality, standard and scope of facilities and support infrastructure available.



where?

existing conditions.

overview.

Namatjira Park is a 12.1 HA site on Springs Rd, Clayton South that provides a diversity of opportunities including social and family recreation, sport, play and environmental experiences.

The site is irregular in shape, with a frontage of approximately 410 metres to Springs Road, and a total site area of 17 hectares.

Land use in the vicinity of the site is largely residential but includes the St Andrews Catholic Church and Primary School to the south-west and Bald Hill Park to the west.

The reserve has a single oval, single tennis court, sporting pavilion, bowls club and bistro, skate park, playground, tennis wall, basketball half court, and dog off-leash park.

It is currently home to four organised sporting tenants, including traditional training and competition use for gridiron, competition only use for cricket, and year-round use for lawn bowls.

The Namatjira Wetlands sits adjacent to Namatjira Park and has a catchment area of 634 hectares. The wetlands treat stormwater before it reaches Port Phillip Bay, and in 2012 was subject to an upgrade of an existing retarding water basin that now provides for flood protection of local properties, a sheltered wetland home for native wildlife and an improved public amenity to the local area and surrounding community.

site context.

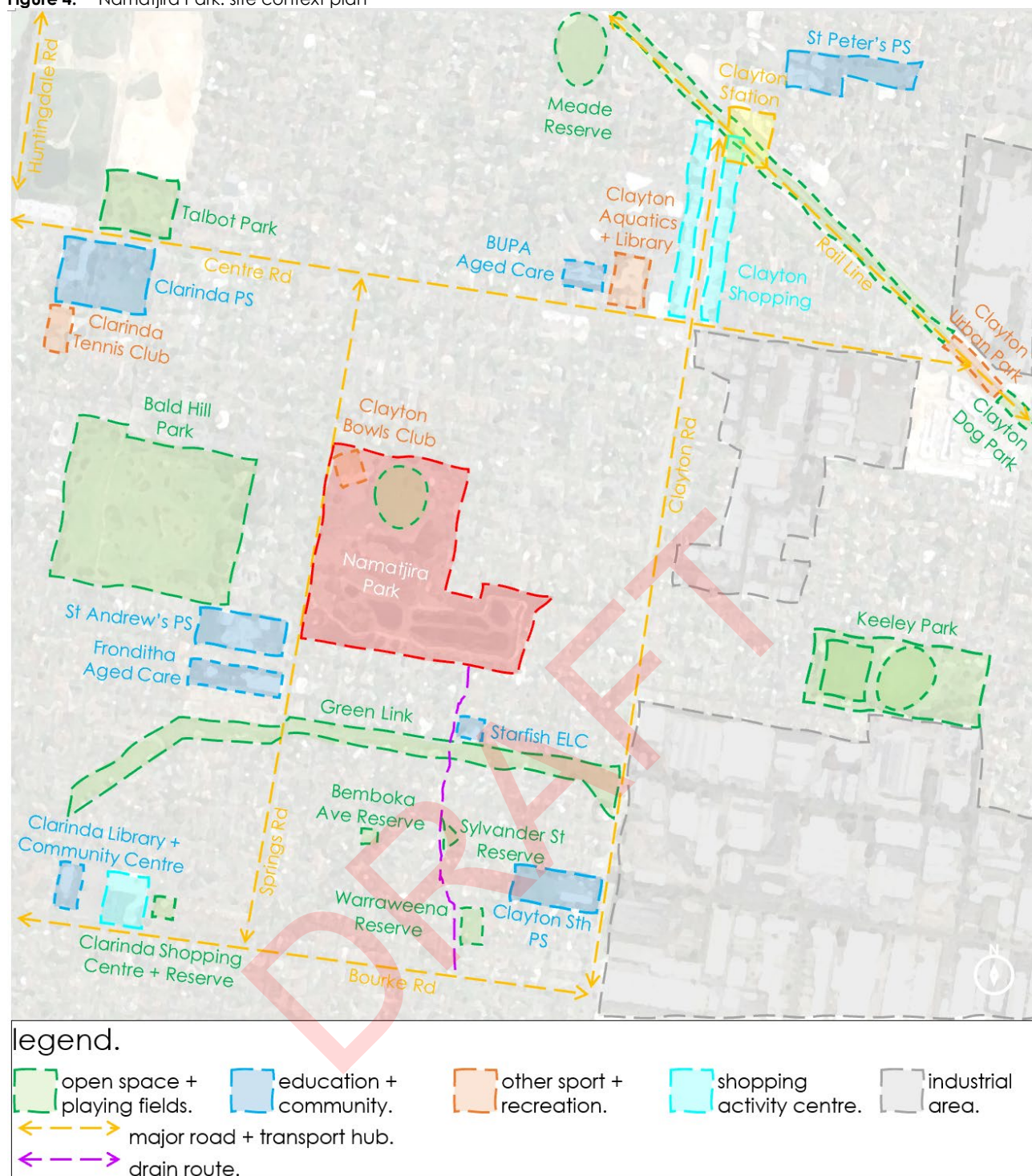
Namatjira Park is located approximately 1km from Clayton train station and shopping activity centre to the North/East and 700m from Clarinda Shopping Centre to the South/West. The park is relatively central in a 1,600m (North/South) x 800m (East/West) key road grid, bound by Centre Rd to the North, Bourke Rd to the South, Springs Rd to the West and Clayton Rd to the East. It is surrounded by residential properties, with industrial pockets between 400-800m away to the East.

The area is well served by open space, with a large informal park 200m to the West (Bald Hill Park), East-West walking trail 200m to the South (Green Link) and an additional four pocket parks further South, formal sporting reserves 700m to the East (Keeley Park) and 1km to the North (Meade Reserve), an informal park 600m to the North/West (Talbot Park) and an enclosed dog park 1.3km to the North/East under the rail line.

The park is also in close proximity to a range of other sport and recreation facilities including Clarinda Tennis Club 700m to the North/West, Clayton Aquatics + Library 600m to the North/East and the Clayton Urban Park (3 x basketball courts + exercise equipment) 1.3km to the North/East under the rail line.

There are a number of education and community facilities in the area, including St Andrews PS 50m to the South-West, Clayton South PS 500m to the South/East, Clarinda PS 600m to the North/West, and St Peters PS 1.3km to the North/East. The BUPA aged care facility is 600m to the North/East and the Fronditha aged care facility is just 150m to the South/West. The Clarinda Library and Community Centre is 800m to the South/West.

Figure 4. Namatjira Park: site context plan



history.

The history of Namatjira Reserve and its naming is not widely known. The limited background information below has been obtained from a wide variety of sources:

- When the Clayton Bowls Club was established in 1961, it was built on swampland located next to the Namatjira Springs.
- Namatjira Springs was a watering hole used by early horse drawn coaches on route from Melbourne to Dandenong.
- Nearby Bald Hill Park is a converted landfill site.
- The naming of Namatjira comes may suggest a local connection to the aboriginal artist Albert Namatjira
- He was a widely-regarded pioneer of contemporary Indigenous Australian art from the MacDonnell Ranges in Central Australia.
- He was the first Northern Territory Aboriginal person to be freed from restrictions that made Aboriginal people wards of the State, when in 1957, he was granted restricted Australian citizenship, giving him the right to vote and have limited land rights.

Further exploration into the historical significance of the site, and in particular connection to the Namatjira name, is recommended.

wetlands.

The Namatjira Wetlands sits adjacent to Namatjira Park and has a catchment area of 634 hectares.

The wetlands treat stormwater before it reaches Port Phillip Bay, and in 2012 was subject to an upgrade of an existing retarding water basin that now provides for flood protection of local properties, a sheltered wetland home for native wildlife and an improved public amenity to the local area and surrounding community.

The wetlands currently have walking paths that weave in and out of the 5 bodies of water, with viewing platforms and benches for bird watching and a rest along the way.

ownership + management.

Sections of the park is classified as Crown land (Department of Land, Water and Planning) with Council as the Committee of Management and land administrator. Council has control of the land to maintain and administer, however any major works consent will be required from DELWP.

The northern section of the park is classified as Crown land with Council as the Committee of Manager and land administrator. A section of land is currently leased to the Clayton Bowls club under a lease agreement.

As part of a partnership with Melbourne Water, Council took on the management of the land previously used as a retarding basin and pay Melbourne Water an annual fee for extraction of storm water for watering street trees and other plantings in Council's open spaces. The bulk of the terrestrial vegetation is indigenous and continues to be managed for this purpose, while the water bodies and the vegetation contained within these areas is managed by Melbourne Water.

Community groups such as Friends of Namatjira have worked to grow and maintain the native plants and have made significant contributions to the area before and after the retarding basin works in 2012, which have seen it flourish as a home for native birds and plants.

The land is partially owned by Melbourne Water, managed by Council's Parks department with maintenance schedules in place. There is no lease agreement in place with Melbourne Water. Melbourne Water will need to have key involvement in future projects at the site – including working alongside them with storm water management and flood mitigation, irrigation, drainage, and soil contamination.

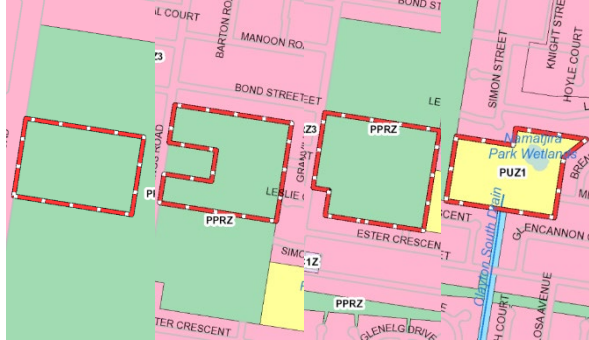
The park also resides within a cultural heritage site sensitivity area, and any works done would need to take this into account.

planning.

The site is split into distinct land parcels:

- 9A7/PP3186 (sports reserve)
- 9B7/PP3186 (carpark/bowling green)
- 3/LP19954 (retarding basin)
- 1/TP709464 + 2/TP709464 (wetlands)

Figure 5. Land parcels



Zone

The majority of site is designated PPRZ – Public Park and Recreation Zone, which has the following purposes: To implement the Municipal Planning Strategy and the Planning Policy Framework; To recognise areas for public recreation and open space; To protect and conserve areas of significance where appropriate; To provide for commercial uses where appropriate.

The wetlands area is designated PUZ – Public Use Zone, which has the following purposes: To implement the Municipal Planning Strategy and the Planning Policy Framework; To recognise public land use for public utility and community services and facilities; To provide for associated uses that are consistent with the intent of the public land reservation or purpose.

Areas of cultural heritage sensitivity

All or part of this parcel is an 'area of cultural heritage sensitivity' – as shaded in green.

Areas of cultural heritage sensitivity are defined under the Aboriginal Heritage Regulations 2007, and include registered Aboriginal cultural heritage places and land form types that are generally regarded as more likely to contain Aboriginal cultural heritage.

Under the Aboriginal Heritage Regulations 2007, 'areas of cultural heritage sensitivity' are one part of a two-part trigger which require a 'cultural heritage management plan' be prepared where a listed 'high impact activity' is proposed.

If a significant land use change is proposed (for example, a subdivision into 3 or more

lots), a cultural heritage management plan may be triggered. One or two dwellings, works ancillary to a dwelling, services to a dwelling, alteration of buildings and minor works are examples of works exempt from this requirement.

Under the Aboriginal Heritage Act 2006, where a cultural heritage management plan is required, planning permits, licences and work authorities cannot be issued unless the cultural heritage management plan has been approved for the activity.

Figure 6. Area of Cultural Heritage Sensitivity

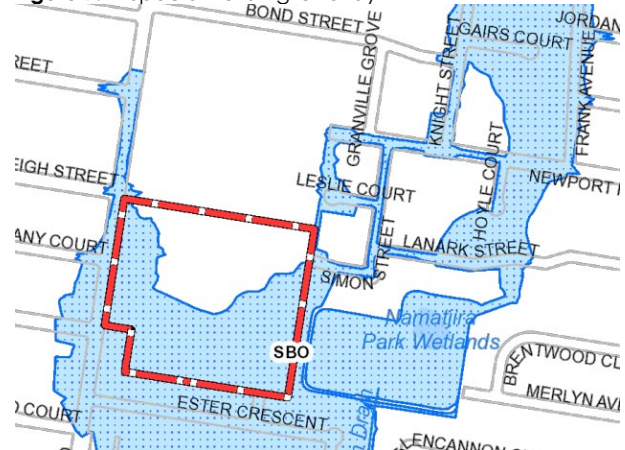


Overlays

The site has an SBO – Special Building Overlay, predominantly in the south as outlined in blue.

An SBO is a planning scheme control that identifies areas prone to overland flooding. The purpose of these overlays is to set appropriate conditions and floor levels to address any flood risk to developments. These overlays require a planning permit for buildings and works.

Figure 7. Special Building Overlay



site survey.

Moonland Group were commissioned to undertake a feature and level survey (Appendix 5) on the site to inform the development of the master plan.

site usage.

Namatjira Park is currently home to several organised sporting tenants, including traditional training and competition use for gridiron, competition only use for cricket, and year-round use for lawn bowls. The clubs that currently use the site include:

- Clayton Bowls Club
- South Eastern Predators Gridiron Club
- Parkdale United CC
- Clayton District CC
- Carnegie United CC
- Kingston United CC

The site is also sometimes used for cross-country and other sporting events by local schools including:

- St Andrew's Primary School
- Clayton South Primary School
- Clarinda Primary School

Froniditha Care is a nearby 150-bed aged care facility and many of its residents frequent Namatjira Park for recreational and leisure pursuits.

Previously the site was used for Kingston's annual Globe to Globe Festival (ceased 2018) and is also home to smaller community driven events throughout the year, utilising the open spaces that Namatjira offers.

The Friends of Namatjira is a local community group who have made significant contributions to the area working tirelessly over the years to facilitate community planting days and ongoing maintenance of the native plants, which have seen it flourish as a home for native birds and plants.

Figure 8. Summer 2020/21 council bookings

| | Bowls Courts | Bowls Pavilion | Sports Pavilion | | Sports Oval | |
|------|--------------------|----------------|-----------------|-----------------|-----------------|-----------------|
| Mon | | | | | | |
| Tues | CBC 10am-10pm | | | | | |
| Wed | CBC 12:30pm-4pm | | | | | |
| Thu | CBC 4pm-7pm | | | | | |
| Fri | | CBC 10am-10pm | | | | |
| Sat | CBC 12:30pm-4:30pm | | Pucc 12pm - 6pm | | Pucc 12pm - 6pm | CDCC 12pm - 7pm |
| Sun | | | Kucc 11am - 9pm | Cucc 11am - 7pm | Cucc 12pm - 7pm | Kucc 12pm - 6pm |

Figure 9. Winter 2020 council bookings

| | Bowls Courts | Bowls Pavilion | Sports Pavilion | | Sports Oval | |
|------|--------------|----------------|--------------------|--|--------------------|--|
| Mon | | | | | | |
| Tues | | | SEPGC 6pm - 9:30pm | | SEPGC 6pm - 9:30pm | |
| Wed | | | | | | |
| Thu | | | SEPGC 6pm - 9:30pm | | SEPGC 6pm - 9:30pm | |
| Fri | | CBC 10am-10pm | | | | |
| Sat | | | SEPGC 9am - 7pm | | SEPGC 9am - 7pm | |
| Sun | | | SEPGC 9am - 7pm | | SEPGC 9am - 7pm | |

Figure 10. Summer 2019/20 council bookings

| | Bowls Courts | Bowls Pavilion | Sports Pavilion | | Sports Oval | |
|------|--------------------|----------------|--------------------|-----------------|--------------------|--|
| Mon | | | | | | |
| Tues | CBC 10am-10pm | | SEPGC 7pm - 9:30pm | | SEPGC 7pm - 9:30pm | |
| Wed | CBC 12:30pm-4pm | | | | | |
| Thu | CBC 4pm-7pm | | SEPGC 7pm - 9:30pm | | SEPGC 7pm - 9:30pm | |
| Fri | | CBC 10am-10pm | | | | |
| Sat | CBC 12:30pm-4:30pm | | Pucc 12pm - 7pm | Pucc 12pm - 7pm | CDCC 12pm - 7pm | |
| Sun | | | Cucc 11am - 7pm | SEPGC 9am-12pm | Cucc 12pm - 7pm | |

Figure 11. Winter 2019 council bookings

| | Bowls Courts | Bowls Pavilion | Sports Pavilion | | Sports Oval | |
|------|--------------|----------------|--------------------|--|--------------------|--|
| Mon | | | | | | |
| Tues | | | SEPGC 7pm - 9:30pm | | SEPGC 7pm - 9:30pm | |
| Wed | | | | | | |
| Thu | | | SEPGC 7pm - 9:30pm | | SEPGC 7pm - 9:30pm | |
| Fri | | CBC 10am-10pm | | | | |
| Sat | | | SEPGC 9am - 6pm | | SEPGC 9am - 6pm | |
| Sun | | | SEPGC 9am - 6pm | | SEPGC 9am - 6pm | |

current facilities.

- **Tennis court and hitting wall** - tennis court in poor condition with evidence of concrete surface cracks and fence lean. Hitting wall in fair condition but noticeably short in height.
- **Skate Park** - small concrete skate park, upgraded in recent years, but additional facilities required for all ages and abilities.
- **Basketball half court** - small concrete half court in good condition.
- **Outdoor exercise equipment** - 5 equipment stations, average condition, one item broken at time of inspection and indication of removal of old item.
- **Playground** – wooden unfenced playground and 3 sets of metal swings in fair condition. Improvements to accessibility and extra features required.
- **BBQ facilities and shelter** - located next to playground and gym equipment, sheltered and in good condition
- **Sports oval** - utilised as an overflow oval for weekend competition for cricket and during gridiron season. Surface in fair condition but requires renewal.
- **Pavilion** - extremely poor condition, poorly located, limited parking/ access
- **Bowls club and bistro** – spacious, in good condition, apparent strong visitation.
- **Wetlands** - catchment area of 634 hectares that treats stormwater, provides flood protection, and a sheltered wetland home for native wildlife
- **Cycling and walking** – strong network of mostly gravel paths that connect facilities with site access points
- **Off-leash dog area** - located within the wetlands area of the park.

Refer Appendix 4 for site assessment photos.

Figure 12. Namatjira Park current facilities



traffic assessment.

onemilegrid were commissioned to undertake a Transport Impact Assessment (Appendix 6) to assist the development of the master plan.

General findings for the site include:

- Access to the site via public transport is limited, with the Route 631 operating along the site frontage (with stops located to the south of the main access, and north of Bond Street), and Routes 821 and 824 accessible a short distance to the east. Both services link to an interchange at Clayton Railway Station.
- Cycling access is relatively poor, with Springs Road providing the only connection in the site's vicinity, as an informal route. The site is will served for pedestrian access, with multiple points of entry provided from Springs Road, and a number of entry points from local roads to the south and east including Russ Street, Merlyn Avenue, Simon Street and Newport Road.
- Social data obtained via Strava identifies that the site is a popular location for cycling and walking for fitness and recreational purposes, largely utilising the network of walking tracks within the southern portion of the site.
- Car parking on-site is provided in three main parking areas, located adjacent to the bowls club and restaurant, the sports field pavilion, and the playground.
- On-street parking around the periphery of the park is largely unrestricted, with some sections adjacent to the primary school south-west of the park, subject to No Stopping or 5 minute restrictions during school pick-up/drop-off.

As part of planning for the future of Namatjira Park, four use scenarios were asked to be considered from a transport perspective:

- Scenario 1 - No change
Based on current usage and layout
- Scenario 2 – Full utilisation
If current reserve layout is maintained but facilities are utilised to full potential (i.e. training every night of the week and games all day Sat/Sun)
- Scenario 3 – Additional sports field
If a second oval was to be developed
- Scenario 4 – Bowls Upgrade
The bowls club are considering and an upgrade to existing facilities, which would likely result in an increase in membership and usage

scenario 1 – no change.

parking.

Surveyed parking demands associated with the bowls club are all comfortably accommodated within the on-site car park, with demands not exceeding 50% of capacity during any stage.

It is acknowledged however that the survey dates may not have captured a tournament or club match which are likely to be critical for parking. It is estimated that peak use may generate demand for in the order of 130 spaces during (likely weekend evenings). The existing supply of 139 spaces is therefore expected to be sufficient to cater for peak demands generated by the existing uses.

Similarly, when used for cricket over summer, demands associated with cricket matches (maximum of 21 spaces) are readily accommodated within the on-site car park with ample capacity remaining. Assumptions for Winter gridiron use suggest a peak demand for approximately 50 car spaces, which would also be accommodated within the existing parking supply.

For the central car park adjacent to the playground, it was observed that demands exceeded the supply of parking by approximately 10 spaces, suggesting additional parking should be provided.

It is understood that parking is often observed along the accessway servicing the central car park during busy periods, and it is recommended that this arrangement is formalised, and the spaces line marked to provide additional parking supply and mitigate any potential issues that uncontrolled parking may present.

In addition, it is recommended that the parking design be modified to provide a turn around bay to ensure that all drivers may exit the site in a forwards direction, even if all spaces are occupied. This may result in the loss of one space.

traffic.

All existing accesses to Springs Road operate under excellent conditions, with minimal queues and delays and considerable capacity for growth.

While it is acknowledged that surveys undertaken on-site may not have captured peak activity, it is not expected that the increase in traffic would be problematic given the capacity available.

scenario 2 – full utilisation.

parking.

This scenario considers no increase in the number of people using the facilities on-site at any one time but considers the possibility of more regular usage, including multiple matches on the weekend, or regularly scheduled training during the week.

This scenario will have minimal impact on car parking demands, with any demands associated with training expected to be less than those of a match day and accommodated within on-site supply.

traffic.

This scenario does not consider any increase in the intensity of use, rather it will generate the same volumes of traffic to the site more often. With more regular use of the field on weekdays, traffic to the car park accessed from Newport Rd will naturally increase.

While volumes will be low (approx. 20 movements in an hour) and well within capacity, this may attract criticism from nearby residents due to increases in traffic.

scenario 3 – additional sports field.

parking.

In the event that an additional sports field were to be developed on the site, we would expect a doubling in parking demands associated with match play, giving potential demands for 42 spaces associated with cricket matches, and 100 spaces for gridiron.

While the existing supply of parking would cater for demands associated with concurrent cricket games, there would be a shortfall of approximately 50 spaces during the winter gridiron games.

The additional field may in practice be utilised for an alternative winter sport (e.g., soccer, Australian rules football) in which case the shortfall in demand may reduce, but a shortfall of some description will likely persist.

With limited capacity within the other parking areas on-site, and a desire to limit impacts to residential areas east of the park, it is recommended that additional car parking be provided to offset any shortfall generated. This parking would be preferentially located central to the park site to allow for more efficient use by others in periods of low demand for the sports field.

traffic.

The addition of another sports field on the site will double the existing traffic volumes generated to the site during the critical weekend peak periods.

The site access performance is expected to marginally reduce, however it will remain operating under excellent conditions, with average delays increasing by no more than 0.5 seconds, and queues by in the order of one metre. This will have no material impacts, and not require any mitigation measures.

scenario 4 – bowls upgrade

parking.

Any additional court constructed is likely to attract parking demands for 15 additional spaces, potentially generating total demand for 75 parking spaces during peak operation.

With a supply of 139 spaces shared with the restaurant, and largely disparate peak periods of operation, this expansion will likely not have any considerable impact to parking availability.

The renovation or modernisation of existing facilities may drive some increase in attendance but is not expected to materially alter existing parking demands.

traffic.

The additional parking demand for 15 spaces, and the associated traffic movements generated to the bowls facility are not expected to have any material impact on the operation of the Springs Rd intersection.

active transport recommendations.

None of the master plan scenarios will have direct impacts, positively or negatively, on pedestrian or cyclist access, however they do offer an opportunity to provide for improvements to existing facilities as part of any development works, including:

- Internal pedestrian links to the sports field, with no formal connections providing access from either Springs Rd or the playground car park.
- Establish bicycle parking hoops at strategic locations across the site to service the key uses (restaurant, playground, sports pavilion/field).
- Provide pedestrian refuge adjacent to northbound bus stop at southern Springs Rd access point

tree investigation.

Homewood Consulting were commissioned to undertake a Preliminary Tree Assessment (Appendix 7) to assist the master plan.

tree overview.

346 trees have been assessed. All assessed trees are within Namatjira Park and are owned by Kingston City Council.

Assessed trees have a range of maturities from newly planted staked trees to large remnant indigenous trees. Assessed trees are of native and indigenous origin. No exotic trees have been assessed on site.

The most prolific species on site is Eucalyptus camaldulensis (River Red Gum) with 113 individuals. River Red Gums are indigenous to the area and multiple large and mature individuals can be seen across the site.

The majority of trees are in 'Good' health and 'Fair' structure. Hollows can be seen in large trees with decay located in upper canopies. Trees 30, 33 and 313 are dead.

90 trees have a high landscape contribution. These are large trees that add character and aesthetic value to the landscape.

Majority of assessed trees are expected to remain in the landscape long term with 265 of the assessed trees having a useful life expectancy greater than 20 years, 28 of the 346 trees assessed have a useful life expectancy of under 10 years. Useful Life Expectancy is an approximation of how long a tree can be retained safely and usefully in the landscape with an acceptable risk level.

retention value.

92 trees have a 'Very High or 'High' retention value. Trees in these categories are generally large trees and the most significant trees on site. These trees are all mature specimens with good or fair health and structure and a high or medium landscape contribution. They are expected to be assets in the landscape for the long-term. All efforts should be made to incorporate these trees into any designs.

94 have a 'Medium' retention value. Trees in this category are generally mature trees in good or fair condition with a structural fault that may require arboricultural input or semi-mature trees that are well established and in good condition. Where practical, design modifications should be considered to retain and protect these trees.

160 have a 'Low' retention value. Trees in this category may be trees with poor health and/or structure, environmental weed species, young/small trees that can be easily replaced in the landscape, or trees which are otherwise not suitable to be retained with a new development. These trees are not worthy of impeding development and generally do not need to be incorporated into the development design.

Replacement planting should be undertaken on site to compensate for the removal of any trees, with a general 3(planted):1 (removed) replacement ratio favoured by Council.

tree protection factors.

Any design for development of the site needs to consider the existing vegetation. Tree protection measures need to be employed to ensure trees worthy of retention are identified and are incorporated into the design so they can continue to be assets in the landscape following development. All retained trees require protection and the best way to protect trees is to establish a Tree Protection Zone (TPZ).

The Tree Protection Zone (TPZ) is the principal means of protecting trees on development sites. It is a combination of the root area and crown area which is isolated from construction disturbance, so that the tree remains viable. The TPZ incorporates the Structural Root Zone (SRZ); the area around the base of a tree required for the tree's stability in the ground, with the woody root growth and soil cohesion in this area necessary to hold the tree upright.

Arboricultural impact is determined based on the level of encroachment into the TPZ of a tree as specified in Australian Standard AS 4970-2009 Protection of Trees on Development Sites.

If the proposed encroachment is less than 10% of the area of the TPZ and is outside the SRZ ('minor' encroachment), detailed root investigations should not be required. The area lost to this encroachment may require compensation by extending the TPZ into the undeveloped area.

Where the proposed encroachment is greater than 10% of the TPZ or inside the SRZ ('major' encroachment), the Project Arborist must demonstrate how, or if, the tree will remain viable.

high and very high retention value trees.

The report found that there were 6 x Very high and 86 x High retention value trees identified.

It notes that all efforts should be made to retain these. Of note are the following trees adjacent to built form:

- 2 x High tree sited on Southern side of sports pavilion, adjacent to water tank
- 1 x High tree adjacent to tennis court – TPZ encroaching significantly on court
- 3 x High trees through playground area – TPZ essentially covers entire area
- 4 x High and 1 x Very High trees are sited near bowls club boundary, with a further 4 x High trees in the bowls club carpark
- Large number of High trees adjacent to central car park on North / East border
- Remaining Very High and High trees dispersed throughout reserve and wetlands not adjacent to any built form



Southern Mahogany (#14)
Native, 40+ years
Good health, Fair structure
21m x 13m, 12.72m TPZ
Located where access road meets central carpark



Southern Mahogany (#23)
Native, 40+ years
Fair health, Good structure
17m x 15m, 11.28 TPZ
First tree in row of trees just South of sports pavilion



Brittle Gum (#27)
Native, 40+ years
Good health, Fair structure
22m x 14m, 15m TPZ
Furthermost tree in North-East corner of reserve



Blue Gum (#46)
Native, 40+ years
Good health, Good structure
16m x 15m, 15m TPZ
On North-East bowls club boundary fence



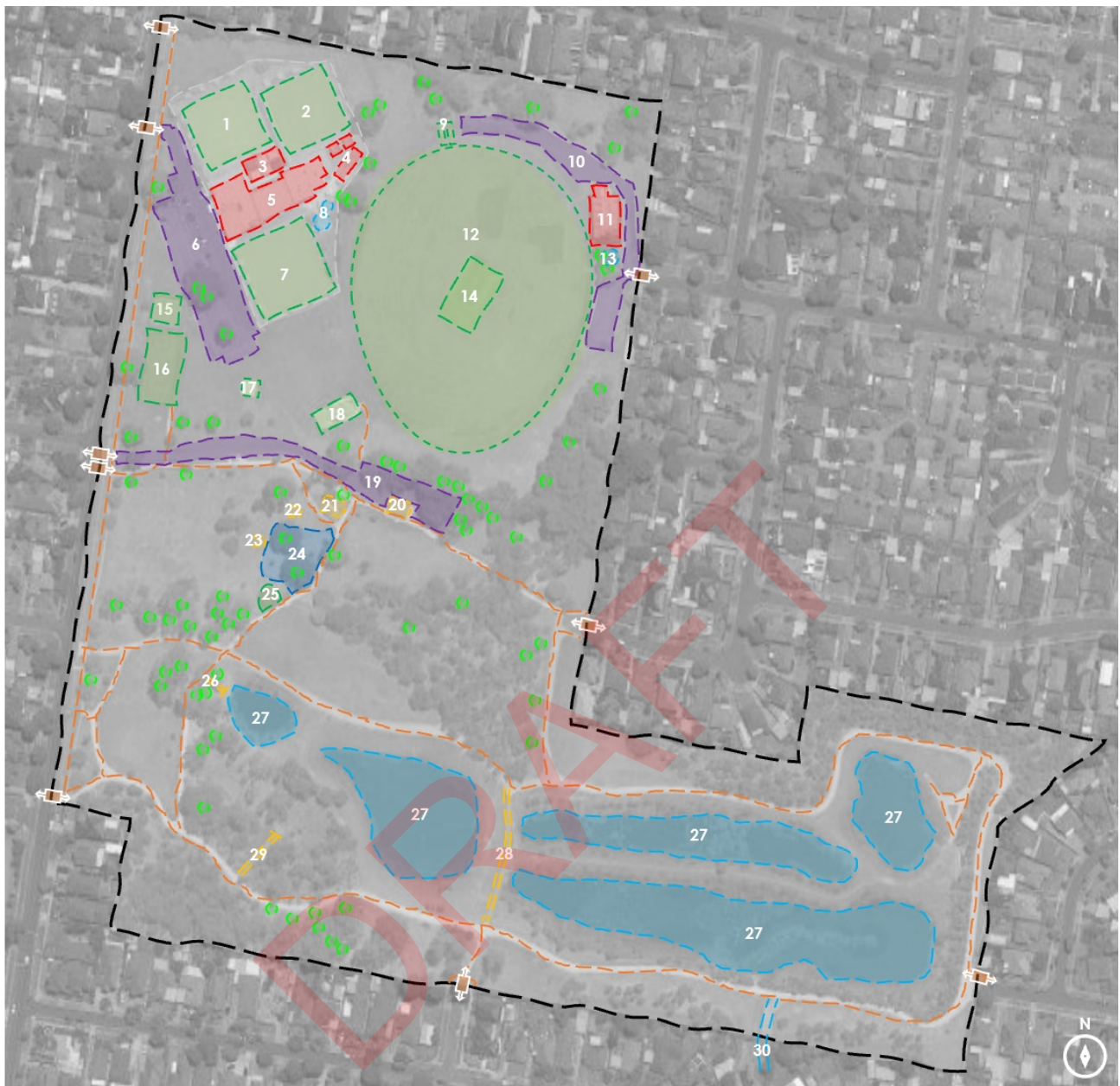
Southern Mahogany (#54)
Native, 20 to 40 years
Good health, Fair structure
18m x 8m, 14.04m TPZ
Between playground and central car park access road













River Red Gum (#314)
Indigenous, 40+ years
Good health, Fair structure
25m x 12m, 13.68m TPZ
Along path on Southern side of retarding basin

existing conditions site layout plan.

Figure 13. Namatjira Park: existing conditions site layout plan



legend.

| | | | | | | | | | |
|---|--------------------------------------|---|-------------------------------|---|-------------------------------------|--|----------------------------------|---|--|
|  | sport + active recreation. |  | playspace. |  | buildings + pavilions. |  | parking. |  | path network. |
|  | water bodies. |  | public amenity. |  | high value trees. |  | bowls club. |  | subject site. |
| 1 | Bowls green #1 37m x 37m | 2 | Bowls green #2 37m x 37m | 3 | Bowls alfresco 225m ² | 4 | Bowls storage | 5 | Bowls Club 1500m ² |
| 6 | Bowls club parking 139 spots | 7 | Bowls green #3 40m x 40m | 8 | Bowls club water tanks | 9 | Remnants of old practice wickets | 10 | Pavilion parking 50 spots |
| 11 | Sports pavilion 360m ² | 12 | Sports oval 130m x 158m | 13 | Pavilion water tanks | 14 | Turf wicket 26m x 17m | 15 | Rebound wall 15m x 15m |
| 16 | Tennis court 18m x 37m | 17 | Basketball ½ court 8m x 8m | 18 | Skatepark 285m ² | 19 | Playspace parking 24 spots | 20 | Public toilet 60m ² |
| 21 | BBQ + shelter 10m x 4m | 22 | Park bench/seat | 23 | Park bench/seat | 24 | Playspace 850m ² | 25 | Fitness equipment 115m ² |
| 26 | Viewing platform | 27 | Wetlands | 28 | Bridge/deck | 29 | Viewing platform | 30 | Melbourne Water drain |



who?

stakeholder views.

engagement program overview.

community engagement.

We have undertaken a comprehensive stakeholder engagement program to understand the current uses, parameters and needs of Namatjira Park.

A Project Working Group consisting of Council staff was established and met to discuss issues and opportunities at the site.

A wide-range of council staff were then interviewed to obtain information regarding site history, asset condition and functionality, and identification of issues and opportunities.

A Stakeholder Reference Group workshop was held to introduce the master plan project and identify early stakeholder feedback.

Key stakeholders were then invited to complete a 'Stakeholder Needs Statement' which asked a number of key questions about site usage, issues and improvements.

A community survey was developed and hosted online via Council's 'Your Kingston Your Say' webpage, with onsite signage and a letter sent to all homes within 400m.

A second Stakeholder Reference Group workshop was held to further discuss issues and opportunities at the site, generating robust discussion and identifying the best possible outcome for the site.

We received some important feedback through this process, with a particular focus being on retaining the wetlands, trees and 'naturalness' of the site, traffic management, community safety improvements, sports facility upgrades, skate/ bmx development, and playground upgrades.

stakeholders.

Shown below are all groups who were engaged as part of the process (greyed out are yet to be engaged / respond):

- | | |
|---------------------------|---------------------------|
| ▪ Council staff | ▪ St Andrew's PS |
| ▪ Clayton Bowls Club | ▪ Clayton South PS |
| ▪ South Eastern Predators | ▪ Clarinda PS |
| ▪ Parkdale United CC | ▪ Fronditha Care |
| ▪ Clayton District CC | ▪ Friends of Namatjira |
| ▪ Carnegie United CC | ▪ Bowls Victoria |
| ▪ Kingston United CC | ▪ Melbourne Water |
| ▪ Cricket Victoria | ▪ Boon Wurrung Foundation |
| ▪ Gridiron Victoria | ▪ Bunurong Land Council |

design development.

Based on the feedback received, draft concept plans were developed that pose possible site improvements and upgrades.

Another round of Stakeholder Reference Group and Project Working Group engagement sessions were undertaken to test and challenge early design thinking.

Following this, the concept plans were further refined into a preferred Draft Master Plan.

This will be released for public consultation with feedback anticipated via a range of methods including:

- a dedicated project page on the 'Your Kingston Your Say' website;
- public submissions;
- tenant club submissions; and
- a community drop-in session.

community survey.

The following section outlines the **community survey results** as at 25 January 2021.

- the project specific 'Your Kingston Your Say' page has generated 227 visits and 26 survey responses.
- The majority of respondents visit the site 2+ times per week (40%) or every day (36%), indicating a strong connection to the park.
- The key reason for visiting the site was exercise (running jogging, walking) as noted by 88% of respondents. The next highest reasons were leisure (sit, read a book, birdwatch, bbq) with 50% and active recreation (playground, skate park, tennis wall) with 38% of respondents noting they also participate in these activities.
- The majority of respondents indicated that they visit the site alone (69%) or with children/family (69%) and tend to mostly visit in the afternoon (38%), followed by early morning (27%) and evening (23%). Minimal visitation occurs between 9am-2pm.
- Walking (81%) was by far the leading transport option to the site, again indicating a strong local connection and catchment to the site.
- Unsurprisingly, walking (92%) was the key activity undertaken at the site, followed by bird watching (50%), jogging/running (46%), and visiting the playground (46%).
- When considering the performance/quality of various items at the site:
 - Wetlands (10) and footpaths/trails (10) received the highest number of 'excellent' ratings
 - Cricket practice nets (4) received the highest number of 'very poor' ratings. Skate park and off-leash dog area were the only other items to receive multiple responses
 - Open lawn areas (21), wetlands (19), public toilets (17), footpaths/trails (17), and signage (17) received the highest combined number of 'excellent' and 'good' ratings.
 - Cricket practice nets (6), tennis wall (5), and security lighting, public toilets, sports facilities, fitness equipment and off-leash dog area (4) received the highest combined number of 'very poor' and 'poor' ratings.
- When considering how important various items at the site are:
 - Wetlands (18), public toilets (15), landscaping (15), security lighting (15) and footpaths/trails (14) received the highest number of 'very important' ratings.
 - Cricket practice nets (9), skate park (9), basketball half court (8), tennis wall (8) and sports pavilion (8) received the highest number of 'not important' ratings.
 - Wetlands (24), public toilets (22), landscaping (22) and footpaths/trails (21) received the highest combined number of 'very important' and 'important' ratings.
 - Skate park (14), cricket practice nets (14), bowling club building (13) and sports pavilion (13) received the highest combined number of 'not important' and 'less important' ratings.
- These findings indicate that the wetlands, public toilets and landscaping are both important to the community but are also performing very well.
- While cricket nets in particular perform quite poorly currently, they are not overly important to the community. There was however a clear disconnect between the poor performance of the existing security lighting and public toilets on site and their perceived high importance by the community.
- In a possible explanation for the relatively low ratings of the importance of sporting facilities at the site, only four respondents noted that they were involved with any of the sporting clubs.
- The overwhelming majority (92%) of survey respondents also noted that they would like to be kept notified about the project into the future, further indicating a strong local connection to the park.

An opportunity to provide comment was also provided as part of the survey, which yielded the following **key excerpts from comments**:

- keep the gravel trails
- impressed with upkeep, naturalness of the environment, quality of tracks and leash free area
- wetlands and trees are great, more rubbish prevention/clean up needed
- additional trees and homes for native animals i.e. bird boxes and possum boxes
- appreciate shade coverage from trees and note it's not too dense so provides good views/surveillance
- Question how a gaming venue can be on council land
- puddles around wetlands are an issue
- tennis court is increasing in popularity, so the tennis wall is important for those waiting – it is too low
- Numerous comments about the exercise equipment always breaking down, and some instances of conflict between adults and children using equipment at same time
- skate park is too small and no variety
- basketball should be full court with path
- playground needs upgrade – waterplay was requested a couple of times
- bushland and trees feel unsafe for people on their own
- off leash area should be fenced off and in a different area
- Opportunity for a new community centre with all sports and activities together
- Onsite cafe with indoor/outdoor seating
- Swimming Pool
- More bbq facilities & shelter. Everyone competes for the same area. Is it possible to have a 2nd area for this on the other side of the playground?
- Signage around the walking track showing distance.
- connect the trail to the drain trail planned in the chain link of parks project in the future
- Possibly a 2nd sheltered area closer to the bird watching / sitting areas for the hotter months.
- Public toilets should be replaced with the self-cleaning variety.
- More lighting & security cameras around the toilet block in the evening. Undesirables congregate there.

The following are some **quotes** of feedback and ideas taken from the survey:

- Thank you for the new bench. We use the wetlands walk track once or twice a day. Essential to our wellbeing and one of the reasons we moved to Clarinda.
- There should be exercise/fitness equipment for both Adults (18+) and Children in the same area with better signage that children are not permitted to use the Adult Equipment. It becomes difficult when a parent is using the equipment and their young children are playing on the other equipment, limiting my use.
- I am impressed with the upkeep of the park along with the naturalness of the environment for the water birds. I appreciate the quality of the track for running but also for walking the dog. I enjoy having a large area that is leash free.
- Plenty of open spaces that are under utilised, a great example of use of space is Caloola Reserve, City of Monash.
- Please do not take out any established trees and replace with concrete or buildings as has been done in other reserves. Trees, birds and green are essentials.
- Children are travelling to Jack Edwards reserve to use the synthetic soccer pitches. To keep activities local, an all-purpose synthetic pitch for year round use; Caged synthetic small soccer pitches; Seating tables when waiting for tennis court availability; Chess/Checker tables; Multiple areas for BBQs and gatherings.
- Please don't change anything about the off leash area around the wetlands, it is enjoyed by so many dog walkers on a daily basis.
- Park is set as a shining example of the diverse types of vegetation we should rise to, to be true to the local indigenous plants of the area and the wildlife they attract. It is a very special park. If COVID taught me anything, it's a reminder how important our parks are to the community - it was a busy park indeed, and how we can take the learnings from well managed flora and fauna to attract people and give them their sanctuary. THANK YOU for all you are doing to preserve these for the future.
- We love the park just as it is!

We have also received two **direct pieces of feedback** submitted to Council as summarised below:

- Just some feedback for Namitjira park master plan. Our street backs onto the park and we often walk the kids to school through the park so we are there most days. My kids would enjoy a better skating ramp as that one is suitable for skateboards. Something larger and suitable for scooters would be great. Also in the evening I often walk through and the lights around the lake area are not switched on, this is around 8:30pm.
- Further to your recent Information Bulletin inviting feedback on the above project, I would like to express my displeasure at the suggestion that this park should be developed further. I have lived in this area for over 40 years and I applaud the Council for instigating the many changes made to the park but I think enough is enough. Don't let us take away any more of this lovely green patch and turn it into a park of tar and cement. I refer to your map of the area: At the moment this 12.1 HA site hosts nine opportunities for sporting and social events (all only sporadically utilized). In comparison, Bald Hill Park which is very close to similar size, hosts a mere three. I fail to understand why this site is so underutilized and would strongly suggest a concentrated effort be made to develop this so far unattractive green area. What better "open space" than Bald Hill Park to put a central sporting club, away from residential housing and with the potential of proper parking. Namatjira Park is not an open space! I totally agree that we have seen a population growth but from real estate agents in this area I understand the predominant migrants are Indian and Chinese working class people who happily congregate on sunny summer weekends but for the most part there is little activity in this park to warrant further development. Now that Covid-19 is under control there is no sign of the dog walkers or joggers so please leave the locals to enjoy the tranquility of this natural environment and take the tar and cement to Bald Hill Park, it awaits development.

City of Kingston **Mayor and local Bunjil Ward Councillor Steve Staikos** also provided the following points for consideration as part of the consultation:

- upgrade or replace the pavilion, including female-friendly, accessible changerooms, modern umpires' facilities, and appropriate social rooms
- the retention of the natural turf wicket, and the installation of turf cricket nets
- all-weather, synthetic surface at the bowls club
- add to the playground with additional equipment including the provision of a liberty swing
- improved footpaths and seating to the north of the reserve, to improve accessibility within the reserve
- improved fencing, wayfinding and animal management signage (dog on leash areas and instructing people to clean up after the dogs)
- provision of dog litter bag dispensers
- provision of improved security lighting to increase site safety and surveillance
- future installation of sportsground lighting on oval to improve access and use of sporting infrastructure through winter months
- confirm direction on the indoor/undercover bowling green proposal, including requesting funding from state/federal governments

sports clubs and associations.

South Eastern Predators.

needs statement.

- Estimate that 80% of members live within Kingston, quite evenly distributed across the whole municipality.
- Currently have 120 playing members, of which 50 are u18 years old and all are male. This is made up of two senior men's teams, an u19's team and an u15's team.
- Membership has nearly doubled from 65 members 5 years ago, and the club expect this trend to continue albeit by the more conservative 25-30% mark.
- Have turned prospective players away this season, most notably interested female participants, and are 'stacking' more players into each team than they would have five years ago.
- The cricket pitch, in its current location and design, ensures the pitch is in the field of play and is a danger to the safety of the players.
- The car park currently services their needs but concerns that if a redevelopment were to occur which facilitates club growth, parking would become an issue.
- General park amenity could be upgraded, such as shade, toilet access etc.

submission.

Have previously submitted a development proposal to Council which included the following key points about the club:

- founded in 2013, started at Namatjira in 2014
- successful club with various state and national representatives, most recently in the 2019 season they had 5 x u19 Victoria and 2 x u19 Australia players, Senior men's team finished 3rd, and were awarded the Gridiron Victoria Coach of the Year award
- culturally inclusive club with members from: Australia, Aboriginal, New Zealand, Fiji, Samoa, Tonga, Maori, Indonesia, Malaysia, Thailand, Philippines, Vietnam, China, Korean, India, Sri Lanka, England, Scotland, Ireland, Holland, Germany, France, Poland, USA, Canada, Sudan
- Over 100 players across 3 teams in 2019: mens (seniors), u19's (colts) and mixed u15's (JV)
- in conjunction with Team Touchdown and Gridiron Victoria have been working

with a number of local schools to educate and increase participation

- Team touchdown have run over 100 clinics across 26 Secondary schools throughout Victoria during 2020
- in the midst of the COVID-19 shutdown and the delay of the season, there has been a large increase in interest in the sport
- committee planning to add a 2nd men's team and establish a women's team
- have received a high level of interest over the past 3 years for a women's team, but unfortunately the feedback has been consistent and highlighted as our major roadblock being the facilities and lighting at Namatjira Park are not acceptable nor an inviting environment suitable for women in sport
- Namatjira Reserve, is only used as an overflow cricket ground that is not utilised to its potential, because of the restrictions of use issued to the South Eastern Predators
- Over the past 3 seasons we play only 2 games a season at home, and the rest at other venues outside the City of Kingston as we are required to handover the grounds for the cricket season

As part of the proposal, the club outlined the following facility development requests:

- development of new club rooms with designated change rooms and toilets for both male and female teams (2 x home, 2 x away, 2 x referees), canteen, storage
- modification of existing oval to cater for two rectangular fields (110mx55m)
- maintain multi-use cricket wicket
- upgrade to 100 lux lighting
- increased parking, access roads and security lighting
- the security and carpark lighting, floodlights and provision of women's toilet and changerooms were noted as short term priorities (12 months)
- ground reconfiguration and new club rooms were noted as midterm priorities (2-5 years)
- the upgrade of 1 x rectangular field to a synthetic surface was noted as a long-term priority (5-10 years)

Gridiron Victoria.

needs statement.

- Participation has nearly doubled over the last five years, up from 522 to over 1,000.
- Significant growth has been seen in junior males and senior females. This is likely to continue over next five years.
- Biggest issue faced in the Kingston region is the facility and surface standards.
- The league was forced to investigate the playing surface several times in the last 5 years due to injuries – particular concerns with it not being level and has a 'hill'.
- Note that the Predators are one of GV's most active clubs in recruiting and development, but have been limited in their ability to host games and to enter a Women's team into the GV competition due to the clubroom facilities being substandard and not meeting guidelines.
- Support facilities noted for improvement include lighting for training/games, seating and shade for spectators and formalised parking.
- Also note that the league is rapidly expanding which has forced expansion to include night games.

submission.

The following key statewide information has been adapted from the South Eastern Predators submission:

- Gridiron was first played in Victoria in 1984. 2019 competition saw 14 teams competing across 2 divisions:
 - Monash Warriors & Barbarians – Monash University (City of Monash)
 - Casey Spartans – Sydney Pargeter Reserve (City of Casey)
 - Pakenham Silverbacks - Lakeside Recreation Reserve (Cardinia Shire)
 - Peninsula Sharks – Victoria Park, Frankston (Frankston City Council)
 - Croydon Rangers – Ranger Field (Maroondah City Council)
 - Melbourne Uni Royals – Melbourne Uni (City of Melbourne)
 - Northern Raiders - DR Atkinson Reserve, Reservoir (City of Darebin)
 - Western Crusaders (1 & 2) – Henry Turner Oval (Maribyrnong City)
 - Melton Wolves - Mt Carberry Reserve, Melton South (City of Melton)
 - Ballarat Falcons – Alfredton Reserve, Ballarat (City of Ballarat)
 - Bendigo Dragons – Tom Flood Sports Centre (City of Greater Bendigo)

Clayton Bowls Club.

needs statement.

- Estimates that over 60% of its members are from within Kingston, majority of which come from Clarinda, Clayton South and Oakleigh South. Also notes that 85% live within a 5km radius of the club, and the 40% outside of Kingston is likely due its location on the edge of the Council boundary.
- Playing membership has held constant over the past 5 years, but the club believes it will increase by 50% across most age groups.
- Note that the façade of the whole club needs to be greatly improved. The surrounding green fence is both outdated and certainly not agreeable to the local amenity.
- Noted that the current carpark size services their needs, but traffic flow is an issue – it needs to be one way with a separate entry and exit point. The current dual exit/entry is angled and unsafe. Pedestrians walk in all directions and, kids are often running. In addition, it needs some 10K speed signs.

submission.

Have previously submitted a development proposal to Council which included the following key points about the club:

- The Club reports a total membership of over 350 members, comprising 110 bowls and 250 social. Even though bowls has a reputation for being a sport that is attractive to older citizens, the club continues to buck that trend. In 2018 the average age of the club's Premier League bowls team was 26 years old.
- The Club provides participation opportunities seven days per week for its members and non-members via tournaments, pennant bowls, barefoot bowls, triple bowls and social activities (cards, trivia etc).
- Clayton Bowls Club's current impact on the community is significant, with the club (in 2019) employing 20 part-time, full-time and casual staff to the value of \$900,000, plus a dedicated band of volunteers who contribute over \$240,000 (8,000 hours) to the club every year. Almost half a million dollars (\$499,284 audited September 2020) poured back into the local community annually.
- Four major renovations –in 1982, 1994, 2005 and 2011 have all been fully funded by the club itself.

- Green # 1 was also fully renovated and replaced with Tifdwarf turf in 2015. Green # 2 was fully renovated and replaced with Bent turf in (February) 2020 – combined cost of \$35,000. Green # 3 is in need of replacement.
- The club's gardens are fully maintained by volunteers; they are a glowing picture of floral health.
- The venue is fully maintained by the club itself; this costs approximately \$60K per annum
- In 2006 the club was drought-proofed with federal funding and the installation of 150,000 litre above ground water tank. The tank is filled from the below-ground spring which was enhanced in 1980 with two water tanks.
- Clayton Bowls Club currently has 29 Electronic Gaming Machine entitlements with the VCGLR. Current entitlements extend through until 2032. This agreement was signed with the Minister for Consumer Affairs, Gaming and Liquor Regulation in July 2018.
- Clayton Bowls Club will appraise its gaming machine operations from 2028 (gaming machine entitlements are due for renewal in 2032) with the intent of transitioning out of gaming over the following years in accordance with the club's financial capability.
- Clayton Bowls Club has a team in Victoria's Premier League and boasts three Commonwealth Games champions as part of this elite Premier League team. In 2018, three club members represented three different countries in bowls at the Commonwealth Games. One of these, Aaron Wilson, won gold for Australia in the men's singles event.
- To remain competitive, the opportunity to play and practise on a synthetic carpet surface is critical as many other Premier League clubs, and clubs vying to enter this prestigious division, have access to such world-class synthetic greens.
- Clayton Bowls Club lies within the Sandbelt Bowls Region, which is home to 41 lawn bowls clubs in the South and South Eastern area of Melbourne. This includes over 5,000 affiliate members.
- Only two of these clubs have undercover facilities. Neither of those clubs have a team in the Victorian Premier League.
- One such club's indoor / synthetic green facilities was built several years ago; while it has been relatively successful, it continues to have light and temperature

issues and is not fully enclosed nor protected against the elements.

- The other club's facility was completed in February 2019. However, this facility is not totally weatherproof. It comprises a semi-covered marquee style dome structure which is still susceptible to prevailing winds and driving rain.

As part of the proposal, the club outlined the following facility development plans:

- installation of a synthetic carpet green in an all-weather facility
- Green #3 is the ideal location to re-develop the grass green into a carpet green that is securely and temperately covered, to enable bowls to be played and sporting and entertainment activities to occur all year round irrespective of external weather conditions.
- This includes converting the current functions kitchen to a terrace café/bar, re-developing the bowls information office and adjoining passageway into offices and establishing a terrace bar viewing area adjacent to the new covered in green.
- The plan includes purchasing temporary flooring to cover the (bowls) carpet playing surface so it may be used by multiple community groups.
- The north and south ends of the facility will be climate controlled with gas heaters and evaporative cooling systems. Doors and louvre windows will support air flow throughout, while the southern end will resemble glass portholes, in keeping with the adjacent Namitjara parks and gardens.

The Club claims the following benefits of the Project:

- Help attract additional events, eg potential State and National events;
- Provide a competition and training facility for its talented teams (Premier League);
- Help it maintain its status of the region's elite pathway club for lawn bowls;
- Attract a broader range of new facility users i.e. schools, mothers/fathers bowling with babies, all abilities etc; and
- Enhance the financial sustainability of the Club.

Architectural drawings of the club's proposal are provided as Appendix 5.

Bowls Victoria.

No formal comment provided to date.

Parkdale United CC.

needs statement.

- Parkdale United Cricket Club (previously Parkdale Methodist Cricket Club) was established in 1967 and have been playing cricket at Namatjira for 15+ years.
- It has been the home ground for 3rd XI senior team for that time and was also the home ground to 4th XI senior team for a number of years.
- The club utilise Jack Grut Reserve as its main home ground, with overflow use of five other grounds including Namatjira.
- Estimate that over 75% of members are from within Kingston, predominantly Aspendale Gardens and Parkdale.
- They have 142 playing members across 15 teams, including 8 teams and 67 junior male players, 2 teams and 13 junior female players, and 5 teams and 62 players over 18 years.
- They have doubled membership over the past 5 years, from 70 players across 6 teams (with no females) and expect continued growth of around 10-15% in the junior age groups, no growth in senior men, and around 25% growth in females.
- Would like to field a senior female team in the future, however this would likely be hosted at the club's main home ground at Jack Grut as the facilities at Namatjira are not conducive to female sport.
- Note that the support facilities at Namatjira are not adequate to facilitate family and junior attendance at the site and upgrades should be considered, particularly for seating, shade and formalising the parking near pavilion.
- The majority of the ground is now playable since it has been re-thatched, but there are still a few areas of the ground that are quite sandy / just dirt.
- The ground is also extremely slow. Ideally, the type of grass would be changed for the entire ground to be more suitable for cricket.
- There are also no cricket nets.
- Council has allocated Namatjira Park to four cricket clubs over the summer with two teams sharing usage on Saturdays and the other two teams sharing usage on Sundays.
- PUCC have purchased curating equipment such as mowers and rollers and coordinate the ground maintenance for the four clubs including paying curating costs and then recovering the other cricket clubs' proportionate share of the costs.

Clayton District CC.

needs statement.

- Clayton District Cricket Club was founded in 1924 by local market gardeners and flower gardeners and originally known as Clayton Vale CC.
- In 1993, Clayton Footballers went into recess and as a result, Clayton District was given tenure for Namatjira Park, which it has held to this day.
- The club utilise Namatjira for its senior teams, and Keeley Park for its juniors.
- Estimate that 45% of members are from Kingston, with 30% from Clayton South specifically.
- The club has 161 playing members across 11 teams. 8 teams are juniors, of which 16 female players participate.
- Membership has increased from 103 members five years ago, and the club expect continued growth over the next five years, particularly in junior males.
- The club is approaching its centenary year in 2024 and are buoyed by the strong population growth in Cayton South and Westall.
Wish to grow to four senior sides, all playing on turf. Saw a drop off of U15s and U17s in recent years. Now with the growth of people and families looking to join, expect to field two U15 & one U17 team over the next three seasons.
- Milo Blasters and Milo in2 Cricket has been a large success for the Club in recent seasons. An aspect that is really heartening, is parental involvement as volunteers, or otherwise coming to watch their children. In the past the Club has been a 'drop off' centre for parents.
- Note that the outfield has been dominated by couch grass for decades and makes it difficult to 'get value for your shots', and that the pavilion is dated, on the wrong side of the ground and provides no protection from the sun.

Carnegie United CC.

needs statement.

- Inaugural premiership winner of the formation competition known as the South Suburban Churches Cricket Association in 1900/01, under the name Rosstown Wesley.
- In 1920, the Club changed its name from Rosstown Wesley to Carnegie Methodist Cricket Club and shifted to its present location at Lords Reserve Carnegie in 1923.
- In 1982, the club underwent another name change to Carnegie United Cricket Club.
- CUCC Kings has a membership of about 60-75 playing members across 6 teams, which has doubled from 30 players across 2 teams five years ago. They expect growth in sub-juniors and female participants, for which they currently don't provide teams.
- The club note that they have many social members, and many life members who frequent the club in the cricket season and support the club at social functions and games.
- Storied history of success including premierships in 2012/13, 18/19 and 19/20.
- CUCC Home ground for synthetic games is at Keeley Park and for turf games it is at Namatjira Park and Highett Res (OVAL 2).
- Have been using Namatjira for past 5 years or so.
- Estimate that 100% of members are from Kingston, predominantly Clayton South.
- The club is keen to make Namatjira their permanent ground on Sunday's.
- They note that the pavilion and facilities are at the end of their life and need refurbishment, request an electronic scoreboard be provided on site, provision of cricket nets, better parking arrangements and improved exercise equipment/playground area.

Kingston United CC.

needs statement.

- Started using Namatjira back in 2017 with a different club, however, from last year established Kingston United Cricket Club to solely focus on turf cricket and to make Namatjira sole home ground.
- Currently train at Keeley Park on Wed/Fri and play at Namatjira on Sundays.
- Estimate that 50% of members come from within Kingston, predominantly from Clayton South and Oakleigh South.
- Currently note that they have 58 players, including juniors and sub-juniors, but only field one senior men's team. As a result, they do have to rotate players. This has grown from 37 players 5 years ago.
- Plan to develop junior turf team at Namatjira for girls and boys in the years to come, which will facilitate expected growth of 50% in sub-junior members (11 years and under) and 30% growth in juniors (12-18 years).
- Note that the playing square needs improvement, additional lighting on site is required, and the car park near the pavilion could be formalised.
- Other suggested improvements include:
 - Playground need upgrades
 - Walk ways and bicycle path needs to be extended around the cricket oval to the wetlands.
 - Parking and traffic need to be redesigned.
 - More BBQ facilities should be setup around the park and wetland.
 - New cricket nets to be erected.
 - Fence around the cricket oval need to be fixed.
 - New electronic scoreboard for multi sport usage.
 - Better drainage and watering system for the main oval.
 - Adding basketball facility near skating area.
 - Connect the cricket oval and facility with the parklands.
 - Building a new multi-purpose hall – to use for club functions and commercial/community hire.

Cricket Victoria.

No formal comment provided to date.

schools + community groups.

St Andrew's PS.

needs statement.

- 360 students currently, down from 460 five years ago. Expect a 5% growth over next 5 years.
- Estimate that 90% of students are from Kingston – specifically Clayton South and Clarinda.
- Currently have 1 indoor hall/basketball court, 2 outdoor basketball courts, 1 mini soccer field, 1 football/athletic oval.
- Currently use Namatjira for interschool sport - 3 times for home games in summer and 3 times for home games in winter.
- Note that the bowls club and playground on site are very good facilities.

Clayton South PS.

needs statement.

- 110 students, estimate 95% of students are from Kingston, with 85% from Clayton South alone.
- The school currently has a basketball court, soccer field, football oval, cricket nets, and netball courts.
- Don't currently use Namatjira Park, nor any specific intention to.

Clarinda PS.

needs statement.

- 361 students, down from 290 five years ago. Expect enrolments to stagnate.
- All students are from Kingston, with three quarters from Clarinda.
- School has 2 x basketball courts / netball courts, football oval, soccer pitch, running track, cricket nets and a long jump pit
- Note that as a school, they do not use the site due to the proximity of Baldhill Park. As a school group, they would welcome the increase in playgrounds with shade at this venue.
- The needs of Namatjira Park would be for increased lighting, tennis/basketball court access and an area to showcase local art work.

Froniditha Care.

needs statement.

- Note that their elderly residents, their families, friends and staff use the site.
- It is accessed mostly during the warmer months – spring and summer.
- The residents participate in lifestyle programs arranged by the aged care home, picnics, family gatherings, BBQs.
- Elderly residents have raised the need for shading, wheelchair access and pathways to public areas, more seats and tables and soft fall areas to minimise injuries from falls. Disabled and bus parking should also be considered.
- Staff hold their end of year celebrations at the bowls club and feedback has been positive.

Friends of Namatjira.

No formal comment provided; however representatives have participated in Stakeholder Workshops.

Boon Wurrung Foundation.

No formal comment provided to date.

Bunurong Land Council.

No formal comment provided to date.

council staff + government agencies.

active kingston.

Council Officer's from the Active Kingston department who are leading this project, providing the following key data/information:

- sportsground bookings data, which has been utilised in the 'where?' section of this report
- customer request management system data (resident complaints, local laws issues etc.), which yielded no significant trends or findings of note
- documentation pertaining to the Clayton Bowls Club development proposal (refer below)

clayton bowls club proposal.

The following project history was provided:

- The Club has approached Council to seek partnership funding, landlord consent/support and extended lease to construct a fully enclosed indoor bowling green on one of its existing greens. The Club's proposed project scope also includes some minor modifications to the existing clubhouse to support an integrated and accessible facility. The internal modifications include remodelling of the existing bar/kitchen areas, ramps/access paths and additional storage facilities.
- The Club has engaged an architect to prepare concept level plans to demonstrate its proposal. Council has provided advice and support to the Club including the provision of a Quantity Survey report to determine the likely construction cost. This report identifies the total cost of the Project at \$5.6Million
- The Club has also prepared a project feasibility and submitted its Strategic Plan 2018/22
- a Council report was tabled and endorsed in September 2019 in which Council acknowledged the request from Clayton Bowls Club and agreed to receive a comprehensive and detailed business plan, including an independent financial assessment of the Clayton Bowls Club's financial model for the development of an indoor bowling green and consideration of alternative strategic options. This report is yet to be finalised and considered by Council.

The following officer comments have been adapted from interviews and Council reports:

- Club has occupied facilities under various Crown Land lease agreements since 1961.
- Club has progressively upgraded its facilities overtime which now include: Three outdoor turf bowling greens; A large club house containing a 120-seat bistro, 200 capacity functions room, alfresco entertaining area for 400 guests and 29 electronic gaming machines; and Car parking.
- The Club's current lease agreement is due to expire in June 2020. In the absence of funding support for the Project, a future lease term is likely to be 9 years (similar to the current lease term).
- A longer 21-year term could be negotiated if the proposed redevelopment progresses. This approach would be consistent with Council's Lease and License Policy where long term leases can be offered to tenants who make considerable investment into the facilities. This would allow any funding partners surety they would receive adequate return on investment for a financial contribution towards to the project
- Preliminary town planning advice has been sought for the project as below:
 - The subject site is located in the Public Park and Recreation Zone and has a Special Building Overlay;
 - The land is subject to 'Areas of Aboriginal Cultural Heritage Sensitivity' and a Cultural Heritage Management Plan may be required;
 - Environmental Site Assessment (ESA) - The proposed construction area adjoins with the existing car parking area, which is identified as contaminated land. An ESA may be required prior to any works;
 - If the Clayton Bowls Club were to lead and fully fund the development, pursuant to the Clause 36.02-2 – Public Park and Recreation Zone, a planning permit is required; and
 - If Council were to deliver the works, a planning permit would not be needed as it is considered to be undertaken by the Public Land manager and an exemption would apply.

- The Club's proposal does not appear to have strong multi-use sport and recreation outcomes when compared with other similar indoor sporting facilities such as high ball courts (basketball, netball, badminton etc). This is due to indoor bowling green's having a single use specialised performance surface, which do not cater well for other activities such as dance or corporate events. Indoor bowling green manufacturers advise that the indoor carpeted surfaces should only be used with specific footwear and the placement of chairs/tables etc should be avoided. For non-bowling use, the carpeted surface must be covered with a suitable material i.e plywood.
- In addition, investigations have not been able to demonstrate a substantive need or demand for the provisions of more community space within Kingston. Most of the services documented in the submission by the Clayton Bowling Club are already existing services offered in Kingston and surrounding municipalities.
- Officers also have concerns with the likelihood of schools and other community groups accessing a facility that has a gaming machine enterprise.
- Whilst the new facility helps establish the Club as a leading regional club, its proposal does not present a compelling case for increasing participation in lawn bowls and or other sport and recreation activities. It is therefore questionable as to the broader public value the project offers for Council investment.
- The Club has limited funding to meet the \$5.6M Project cost. Other considerations include:
 - The Club's current financial position demonstrates it has limited cash reserves;
 - The Club has indicated that it is willing to take out finance, potentially through an interest free loan offered by the State Government. Given the significant construction cost, the total amount the Club can secure is unknown at this time and subject to independent financial assessment;
 - The ongoing costs associated with the operation, maintenance and renewal of the Project has not been identified i.e. renewal, utility costs, programming etc;
 - The Club is seeking, but has not secured, funding from

Commonwealth and State governments; and

- Council's Forward Capital program does not identify funding for the Project.

- The Club's business and feasibility planning for the Project is limited and does not present a strong proposition for investment by parties, including Council.

social development.

Officer's provided a demographic profile of the precinct area surrounding Namatjira Park which can be found as Appendix 3.

events.

Officers provided feedback that the site is well used by numerous community groups, most notably the following in recent years:

- School and district cross country events
- Rock Ministries Holiday programs
- Birthday parties including jumping castles
- Disc golf
- AVAVI Church Family Picnic day
- Monaro Club Christmas party
- Bible exhibition and seminars

community buildings.

Condition audits undertaken in 2018 of each of the buildings on site were provided, which highlighted the following:

- the public toilet (audit score of 3.70) appears to have been constructed in 2000, has not been recently refurbished, is well maintained and in good order. There is no indication of any structural problems and if the current level of maintenance is kept up then the building has a useful life for the foreseeable future
- the sports pavilion (5.97 audit score) appears to have been constructed in the seventies, has been partially refurbished, but the building has not been well maintained and will require ongoing maintenance to extend the serviceable life of the building. There is indication of minor structural problem, with structural cracking to the external brick walls
- the bowls club (5.10 audit score) appears to have been constructed in the eighties, has been recently refurbished, is well maintained and in good order. There is no indication of any structural problems and if the current level of maintenance is kept up then the building has a useful life for the foreseeable future.

sportsfield maintenance.

Officer interviews noted the following points for consideration:

- Current field of play is about 80-90% kikuyu
 - looks good visually, but does not perform optimally
 - extremely wet under foot, saturated for 3-4 months during Winter with inability to get mowers/vehicles on it during this time
- Remainder of field of play is couch
 - section in front of pavilion
 - doesn't look good visually, but holds up really well.
- Site is a clay, loamy soil - not typical Kingston soil
- Needs a good drainage upgrade
 - Suggest AG drains 1-2m apart with sand slits in between, no sand cap etc. necessary – similar to recent Kerr and Chadwick reserve projects
 - likely cost of around \$100,000
- Existing irrigation in acceptable condition
 - performs as required
 - however, if were to rebuild entire field of play like recent Chadwick project, suggest to redo the irrigation to ensure optimal performance
 - particularly pertinent when considering ongoing access to water supply via stormwater harvesting project at wetlands
 - likely cost of around \$100,000
- Need to consider the demand/need for provision of turf wicket
 - current plans to rebuild turf table as priority project after current cricket season finishes
 - mainly identified as priority as there is optimal 'downtime' during Winter season available at the site
 - likely cost of around \$20,000
 - should this be delayed pending Master Plan? If implementation of any field changes is not likely within next 5 years, there would be minimal regret spend for still delivering a rebuild of the turf table

parks.

Council Officers provided the following background:

- In 2009, Council and Melbourne Water entered into a joint application for a Commonwealth Government Scheme called 'Water for the Future' which offered matching funding for storm water harvesting schemes.
- The main objectives from Melbourne Water's perspective was the improvement of storm water quality, improved flood mitigation (which would reduce of the amount of land subject to inundation in the surrounding residential areas), and the integration of the flood retarding basin and open space.
- The overall proposal presented an exciting opportunity for improved recreational and environmental opportunities by creating a regional open space facility at Namatjira Park by integrating the two sites and creating significant indigenous wetlands, extensive walking trails and a bridge with extensive tree planting.
- Council modified the scope of the project to include a storm water harvesting facility at the new wetlands to provide irrigation water for Namatjira oval and a water collecting point for tree irrigation in the northern end of the municipality.
- This project worth \$5mil, effectively doubled the size of the open space area for passive recreation and enabled a greater use of land previously dedicated as a flood retarding area.
- As part of this agreement Council took on the management of the land previously used as a retarding basin and also paid Melbourne Water an annual fee for extraction of storm water for watering street trees and other plantings in Council's open spaces.
- Council is responsible for the grassed areas, board walks, footbridge, pedestrian paths and tracks, and stormwater reuse system, while Melbourne Water is responsible for all other items including the wetlands, sediment pond, litter trap, rock weirs, and flow control structures.
- The bulk of the terrestrial vegetation is indigenous and continues to be managed for this purpose, while the water bodies and the vegetation contained within these areas is managed by Melbourne Water.

environmental planning.

Officer interviews noted the following points for consideration:

- Not long after being created in 2012, due to its proximity of being 1km from a landfill site, more than 7,500 silver gulls descended on Namatjira Park Wetlands, scaring off native bird species. Over an 18 month period, a combination of deterrents was implemented including installing red bunting at ground level, changing the vegetation, and erecting a network of overhead lines. The overhead wires, strung five metres up from seven metal poles placed between 20 and 40 metres apart, discouraged large groups of gulls from gathering, as they are hard to avoid when a flock takes off en masse. The measures have proven successful with the wetlands now a thriving biodiversity precinct.
- Opportunity to develop a shared path along the Melbourne Water (MW) Mordialloc Settlement Drain (see below image) to link Namatjira Wetlands to the shared path along the Dingley Bypass. Vision for naturalising the 8km drain, which is a large concrete lined trapezoidal channel. Some discussions were held with MW when the Dingley Bypass Bridge was built over it and allowance made for the additional width to potentially naturalise a section of this channel. May be opportunities via the 'Reimaging Your Creek Program'.
- In referencing the intention to upgrade the playing surface, there is an opportunity to ensure the playing fields (and passive open space) are irrigated with treated stormwater, particularly given the locations proximity to readily available resources via the wetlands.
- Also interested in considering the irrigation of passive open space to ensure urban cooling and provide 'cool refuges' for the community in heat events – refer Urban Cooling Strategy.

Figure 14. Mordialloc Settlement Drain



traffic.

Officer interviews noted the following points for consideration, particularly in reference to cycle/pedestrian links:

- Possible cycle routes through the park have been identified (refer map below). The red routes are main routes, green are municipal routes (Springs Road) and yellow are other cycling links. Anticipated that these routes would be shared use, 3m in width, surface type not specified (possible granitic sand in keeping with park aesthetic).
- Should consider cycle/pedestrian links into the Bowling club via the park rather than via Springs Road.
- Whilst it is appreciated that part of the Wetlands area is a dogs off leash area – and cyclists don't always mix with dogs – however, the cycle routes are critical for wider networks through the municipality.
- Should consider how cyclists cross Springs Road to access the park – perhaps something similar to the kerb outstands at Bontany Ct and at the transmission reserve would work (subject to drainage considerations) - see below for examples.
- Refer to Parking Management Policy when considering parking changes:
 - local roads less than 5m in width – no parking either side of the road
 - local roads between 5m-7m width – parking on one side only
 - local roads greater than 7m – parallel parking is generally allowed on both sides of the road, subject to safety

Figure 15. Cycle routes

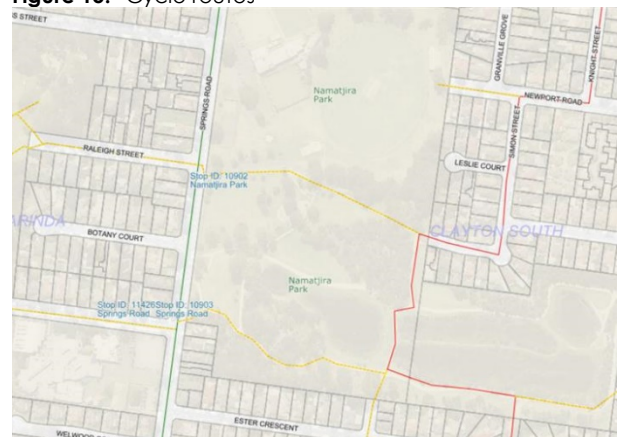


Figure 16. Kerb outstand examples



engineering design.

Officer interviews noted the following points for consideration:

- draw attention to the existing 1350mm diameter Melbourne Water drain that runs through the length of the park (refer black arrowed depiction in map below)
- The Special Building Overlay does impose some restrictions on the site, but this can be further reviewed and plans generally amended to accommodate as required.
- Council is aware that the existing carparks and access roads are in need of reconstruction.
- Not aware of any soil contamination/landfill across the site. However, while working in the northern part of the park we did encounter a substantial amount of rubble (concrete etc) buried near to the bowls club. This caused quite a bit of pain at the time and is worth taking note of.
- In terms of Council's Soil Contamination Policy, there may need to be an investigation if we will be doing excavation over 20m³. The outcomes could have significant impact on future costs etc. events.

Figure 17. Melbourne Water drain route



public places.

Passed on a resident request received in September 2020 that noted:

- Namatjira Park playground in Clayton South needs some renovation and upgrade.
- This playground has been like this for more than 20 years now.
- There are hundreds of kids visiting this park every day and not much to do for them with very old equipment.
- Request you to please consider some uplift of the park similar to Booran Reserve - Glen Eira.

Also noted another resident request received in September 2020 that noted:

- I reside in Clayton. I am an avid BMX rider and have nowhere to ride park wise.
- The skatepark at Namatjira is appallingly designed and very old. It's extremely hard to ride because of its small size and lack of space.
- Similarly, the park under Clayton railway is very skateboard friendly, but is useless for a BMX.
- My friends and I would really like to see a new park added or the park at Namatjira expanded or redesigned.
- Thanks for taking the time to read this email. I hope something can be done.

A third resident request was received in November 2020 that noted:

- I am one of the regular users to the tennis court in Namatjira Park. With the summer season is coming and it is getting too hot, we are only able to use the court in the evening, after 6pm. Therefore, so many people coming at the same time, but only few can play, as it is only couple of hours to be dark.
- Could you please take this in consideration and add night lights to the tennis court? In this way, the community can enjoy playing tennis at night as well.

melbourne water.

No formal comment provided to date.



how?
when?

our game plan.

how?

future direction.

issues + opportunities.

The following issues and opportunities have been identified throughout analysis of the 'What?', 'Why?', 'Where?' and 'Who?' sections of this report.

| TOPIC | ISSUES | SOURCES | OPPORTUNITIES |
|-------------------------|---|---|---|
| Sporting infrastructure | | | |
| General | As we become increasingly time poor, sport is being tailored to meet personal needs. Health, rather than competition, is becoming a major driver for participation in sport Traditional sports now compete with less organised physical activities such as bushwalking, cycling, gym and parkruns We know that more Victorians participate in active recreation than in organised sport The three most common activities – walking, fitness and gym, and jogging or running – make up 44 per cent of all recorded activity | National participation trends State participation trends | The ability of our open space areas to meet the changing leisure and recreational needs of our population is becoming an increasingly important issue The noted trends in participation suggest that increasing participation in active recreation offers the best opportunity to improve the health and wellbeing of our community An increased focus on infrastructure that supports active recreation pursuits is needed, while continuing to ensure facilities provided for traditional sport are fit-for-purpose |
| | We are becoming older, more ethnically diverse and time-poor Kingston is home to over 165,000 people and is forecast to grow to nearly 200,000 by 2041. There will be an additional 1,100+ people in the 'active age range' of 5-34 years (nearly 13,000 in total) in the broader precinct area Large growth in lone person households high proportion of CALD communities within the surrounding precinct Clayton South and Clarinda identified as the most disadvantaged areas in Kingston Low proportion of the community that either cycle or walk to work, while a greater propensity for public transport use | Demographic profile | These additional people will be potentially looking to utilise the site as a key location to participate in physical activity. The use of the site as a place of congregation and social interaction will also be intensified and thought must be given to non-sport facilities and ancillary amenities that support and improve its function for activities outside of traditional sport. This will likely also result in a strong focus on dog friendly facilities and dog off-leash areas. Suggest that the provision of free, unstructured recreation opportunities may be of significant benefit to the community. Consideration of upgraded and/or additional infrastructure that supports improved physical activity outcomes at low-to-no cost should be prioritised. Ensuring the site and its surrounds has appropriate infrastructure to continue to support active travel options (such as integrated walk/cycle paths connecting roads into and through the reserve) and public transport access (such as commuter friendly shelters, road crossings etc.) will be important to ensure it continues to serve the communities needs into the future. |
| | | | |

| TOPIC | ISSUES | SOURCES | OPPORTUNITIES |
|-------|--|---|--|
| | <p>Less than one-third of the Kingston population meets the recommended amount of physical activity each week</p> <p>Kingston residents spend on average 4:37 hours sitting at work on a usual day</p> <p>Just over half (57%) of our population is overweight or obese</p> | Kingston Public Health and Wellbeing Plan | <p>The figures show that an alarming amount of the Kingston population are not achieving the health and wellbeing benefits afforded by regular participation in sport and active recreation</p> <p>Continuing to support traditional opportunities (i.e. sports clubs) but embracing innovative and/or alternative endeavours (i.e. outdoor exercise equipment, free programming such as parkruns) is particularly important to ensure Kingston provides a diverse offering that is attractive to a broad cross-section of the community</p> |
| | <p>Encourage the development of 'multi-use' open space facilities to maximise flexibility in facility use and to assist in reducing development and operational costs of facilities</p> <p>Maximise opportunities for co-location of appropriate community and cultural facilities with open space</p> | Kingston Planning Scheme | Proactively investigate the rationalisation of facilities and encourage co-location where practical and relevant |
| | <p>Council and state sporting association planning documents state that there is a shortage of indoor courts in the Northern region and there is a need for additional ovals (AFL/cricket) and soccer fields (particularly for the projected growth area along the Nepean Highway).</p> <p>It was also noted that the region, and Kingston in particular, has a significantly high provision of turf cricket wickets</p> <p>Recommendations that a complete renewal of the existing sports pavilion and floodlights is required, and the opportunity to reinforce the skate park as a District standard active youth precinct by improving the quality, standard and scope of facilities and support infrastructure available.</p> | Literature review | <p>Consideration of the existing form and function of the site must factor in the expressed future demand for facilities</p> <p>Rationalisation of the current mix of user groups should be investigated, whilst analysis of the current usage of ovals and associated pavilion, and requirement to retro-fit, renew or redevelop should be undertaken to ensure the facility can be utilised to its maximum potential</p> <p>Review the configuration of the field of play to accommodate additional rectangular fields and/or secondary oval</p> <p>Opportunity to reconsider the demand for the provision of turf facilities at the site in consideration of the higher associated costs and decreased hours of use available</p> <p>Sport pavilion redevelopment to suitable sporting standards is recommended, with possible co-location with any bowls club development</p> <p>Skate park upgrade to incorporate infrastructure that supports a broader range of ages and abilities should be encouraged</p> |
| Oval | <p>Single oval, approx. 155m x 130m from fence line to fence line</p> <p>Single field of play limits growth of existing clubs</p> <p>Surface is in fair condition, but requires renewal in medium to long term, specifically drainage upgrade</p> | Existing facilities review | <p>Investigate ability of oval to accommodate Australian rules football (as per AFL Victoria guidelines)</p> <p>Investigate ability to increase oval size to that suitable of providing 2 x rectangle field (as per Football Victoria / Gridiron Victoria guidelines)</p> <p>Upgrade drainage and irrigation in line with any field of play development above</p> <p>The above undertaken in response to expected future demand for AFL/soccer facilities which could result in the addition of a new winter season tenant at the site, in addition to gridiron</p> |
| | Post and rail fence in poor condition, missing sections, bent out of shape etc. | Existing facilities review | <p>Consider complete renewal of fence to Council standard black chain mesh with numerous pedestrian access points</p> <p>Consider removing existing fence and keeping sporting facilities 'open and exposed' in keeping with natural setting of the site</p> |
| | Six pole lighting system in place, in poor condition | Existing facilities review | <p>Incorporate development of floodlights to training standard (100 lux), but constructed with capacity to upgrade to playing standard (200/300 lux)</p> <p>The above undertaken in response to expected future demand for AFL/soccer facilities which</p> |

| TOPIC | ISSUES | SOURCES | OPPORTUNITIES |
|---|---|---|---|
| | | | could result in the addition of a new winter season tenant at the site, and gridiron growth |
| Sports pavilion | Pavilion is reaching end of life Limited facilities does not support growth of existing clubs particularly for females and juniors Location does not provide sun and prevailing wind protection | Stakeholder consultation | Sport pavilion redevelopment to suitable sporting standards is recommended Possible relocation to opposite side of field of play and/or co-location with any bowls club development |
| | Evidence of equipment storage throughout unauthorised areas of pavilion, such as disabled toilet, umpires room etc. | Existing facilities review | Consider improved storage options as part of pavilion upgrade, particularly in consideration of high storage requirements for gridiron equipment |
| Cricket nets | No nets provided | Stakeholder consultation | Consider provision of cricket nets to support increased site usage and future 'home' tenants |
| Bowls club | Request conversion of green #3 to covered all-weather synthetic surface and supporting facility upgrades | Stakeholder consultation | Consider redevelopment in tandem with sports pavilion redevelopment to cater for all user groups |
| User groups | The reserve is primarily utilised as an 'overflow' venue for cricket and limited gridiron use There is significant scope to increase the field of play and pavilion usage | Existing facilities review | Consider establishment of multiple rectangle fields to support gridiron growth and future alternative sporting tenant (e.g. soccer) and/or winter oval use by football club as and when anticipated demand comes to fruition |
| Public amenity | | | |
| General | There is a large concentration of lone person households in the precinct area, the use of the site as a place of congregation and social interaction will be intensified | Demographic profile | Thought must be given to non-sport facilities and ancillary amenities that support and improve its function for activities outside of traditional sport |
| Playground | Wooden unfenced playground and 3 sets of metal swings in fair condition. | Stakeholder consultation | Improvements to accessibility and provision of additional features to increase use by all ages and abilities |
| Exercise equipment | The exercise equipment is in average condition and regularly out of order | Existing facilities review / Stakeholder consultation | Improve equipment offering to include upgraded mechanical equipment (moveable parts emulating indoor gym equipment) Such equipment provides an entry-level physical movement as most items of equipment either use a predetermined resistance level that is set relatively low to enable use by all, or utilise a counter-weight system to limit the resistance to a proportion of the users body weight (typically 30%) These pieces of equipment are also very intuitive and simple in design and are installed with instructional signage to ensure ease of use Equipment design, selection and installation to be guided by the State governments 'Guidelines for planning, installing and activating outdoor fitness equipment' |
| Tennis court and hitting wall | Tennis court in poor condition with evidence of concrete surface cracks and fence lean. Hitting wall in fair condition but noticeably short in height. | Existing facilities review / Stakeholder consultation | Consider redevelopment of tennis court, hitting wall, skate/bmx park, and basketball half court into co-located urban recreation zone inclusive of supporting infrastructure (shade, seating, taps etc.) Consider lighting this recreation zone to facilitate longer hours of use |
| Skate park | Small concrete skate park - additional facilities required for all ages and abilities. Upgrade to facilitate BMX use requested | | |
| Basketball half court | Concrete half court in good condition Extension to full size court requested | | |
| Public toilet | Well maintained and in good order | Existing facilities review | Improve security lighting in and around public toilet and surrounding connecting paths/trails |
| | Poor lighting at night | Stakeholder consultation | |
| Social recreation (shade, seating etc.) | Lack of formal shade, particularly an issue at playground | Stakeholder consultation | Improve location and function of park amenities inclusive of shade, seating, water taps throughout reserve |

| TOPIC | ISSUES | SOURCES | OPPORTUNITIES |
|-----------------------|--|----------------------------|--|
| Safety | | | |
| Lighting | Site security was an issue raised by stakeholders due to a lack of security lighting, both around the pavilion, public toilets and existing path network | Stakeholder consultation | Improve security lighting throughout reserve. Recommend path lighting every ~30m for public safety and activation |
| Wayfinding | Excellent signage throughout reserve, inclusive of both wayfinding and animal management practices | Existing facilities review | Support continued provision of wayfinding signage throughout reserve |
| Traffic | | | |
| Parking | Existing parking numbers sufficient for use Parking around pavilion could be formalised Central carpark near playground regularly results in issues due to no turning circle Existing carparks and access roads are in need of reconstruction | Stakeholder consultation | Incorporate Traffic Study recommendations: <ul style="list-style-type: none">▪ formalise line marked parking along accessway to central carpark▪ modify central carpark design to accommodate a turnaround bay▪ provide additional carparking to accommodate any additional sports fields developed, preferably in central location▪ improve pedestrian links to sports field from all carparks▪ establish bicycle parking hoops at strategic locations across the site▪ provide pedestrian refuge adjacent to bus stop |
| | Parking caters for existing demand, except in central car park near playground Anticipated shortfall of up to 50 spaces if additional sports field is provided | Traffic Study | |
| Ecology | | | |
| Trees | There are 6 x Very high and 86 x High retention value trees identified. Of note are the following trees adjacent to built form: <ul style="list-style-type: none">▪ 2 x High tree sited on Southern side of sports pavilion, adjacent to water tank▪ 1 x High tree adjacent to tennis court – TPZ encroaching significantly on court▪ 3 x High trees through playground area – TPZ essentially covers entire area▪ 4 x High and 1 x Very High trees are sited near bowls club boundary, with a further 4 x High trees in the bowls club carpark▪ Large number of High trees adjacent to central car park on North / East border▪ Remaining Very High and High trees dispersed throughout reserve and wetlands not adjacent to any built form | Tree investigation | When planning and designing developments consideration should be given to minimise impacts as far as practical to high and very high retention value trees. Medium and low retention value trees may, if space allows, be replaced elsewhere in the reserve if development precludes their retention. Individual medium retention value trees could be removed without significant impacts on the landscape amenity of the reserve although removal of contiguous tree groups that may contribute significantly as a whole to the area should be avoided. |
| Wetlands | Strong community sentiment for wetlands area | Stakeholder consultation | Continue to preserve wetlands ensuring it remains a 'natural oasis' while providing suitable connections to other site infrastructure. |
| Mobility and access | | | |
| Path network | Strong network of existing paths providing numerous recreational options Missing link between sports pavilion and public toilets, playground and wetlands Lack of formal cycling routes throughout site | Existing facilities review | Provide granitic sand path to link existing trails to sports pavilion and other infrastructure Provide shared path network linking main cycling routes, municipal routes and other cycling links to Bald Hill Park for example Improve signage, including consideration of distance markers throughout trail network to support recreational walkers/runners |
| Melbourne Water drain | Mordialloc Settlement Drain runs through the length of the park | Stakeholder consultation | Opportunity to develop a shared path along the Mordialloc Settlement Drain to link the site to the shared path along the Dingley Bypass, and provide shared path connection through wetlands area |
| Sustainability | | | |
| Urban cooling | Irrigation of sporting and passive open space areas with treated stormwater | Stakeholder consultation | Ensure stormwater connections are maintained in any irrigation upgrades and consider installing irrigation of open space areas as part of any future works to support provision of 'cool refuges' |

major development considerations.

bowls club development.

The Club's proposal sought partnership funding, landlord consent/support and extended lease to construct a fully enclosed indoor bowling green on one of its existing greens, as well as minor modifications to the existing clubhouse to support an integrated and accessible facility. The Club supported its funding request with the provision of a feasibility plan, Strategic Plan 2018/22 and indicated an ability to secure \$900,000 financed via a loan at the time.

Utilising the concept plans provided by the Club, Council supported the Club in obtaining a quantity surveyors report, which indicated an estimated project cost of \$5.6 million for the indoor facility development.

The Club is seeking to achieve the following benefits from the proposed development:

- Help attract additional events e.g. State and National events;
- Provide a competition and training facility for its Premier League teams;
- Help maintain its status of an elite pathway club for bowls;
- Attract a broader range of new users i.e. schools, all abilities etc; and
- Enhance the Club financial sustainability.

In March 2020, Council officers engaged DJK Consulting to undertake an independent financial assessment of the Club's financial model, with key considerations being:

- A review of the Club's current and recent financial information;
- The Club's ability to finance the project, including the need for financial contributions;
- Provide commentary on the performance of the Club, considering similar enterprises; and
- Consider the capacity of the Club to meet forecast operational and asset renewal costs associated with the current and proposed redeveloped facilities.

DJK Consulting worked closely with the Club and reported the outcome of its review in May 2020. In summary, DJK Consulting noted that the Club's financial performance has improved demonstrably over the past three years, and that its request for funding to construct the indoor bowling green is considered worthy of further consideration, subject to further detailed development of a

business plan and evaluation of the impact from the COVID-19 pandemic.

Whilst DJK Consulting's report indicates the Club has much improved financial results, which provides increased confidence that the Club could have the ability to partly finance (contribute) to a new asset and trade profitably into the future, capital funding for the proposed development remains unsecured.

key concerns.

1. Financial capacity of the Club within the current COVID-19 Environment

Whilst DJK Consulting's report found that the Club has demonstrably improved its financial position over the past two years, in particular with the stabilisation of the Club's bistro operations, consultation with the banking sector indicates that the Club's ability to secure a significant financial contribution would be optimistic in current environment.

Should Council provide a guarantee for a loan this would improve the Club's ability to secure finance. There is considerable risk for Council to act as a loan guarantee for a food, beverage and gaming enterprise that was financially challenged three years ago.

Furthermore, the Club's operations have been impacted as a result of the current COVID-19 restrictions. Whilst Council has assisted the Club with a waiver on its rental, the impacts of COVID-19 on the Club's long-term business is unknown.

2. Community demand for the proposed facility

There are currently 16 bowling greens at 8 venues across Kingston. Utilising the industry benchmark of 1 green per 10,000 people, current and future population trends indicate that the current provision of 16 bowling greens is adequate to absorb future demand.

The development of an all-weather green (synthetic green) at bowling clubs is an effective approach to sustain all year bowling and grow club memberships. Bowls Victoria has indicated that the conversion of one of the Club's greens to an all-weather facility may increase membership up to 300% (based upon increased membership rates at other bowling clubs).

The development of an all-weather green is viewed by Council Officers as a positive development to sustain bowling activity but

may lead to an oversupply of bowling facilities within the city.

A key element of the Club's feasibility plan includes an increase in community usage through school usage, health and fitness programs, gymnastics, cheerleading, archery and other bowling and non-bowling uses. Officer's conducted a detailed review of local community needs, including consultation with schools and have concluded that there is limited need for access to the Club's proposed facility.

Simply put, groups such as gymnastics, cheerleading and archery require purpose build facilities with specific items, such as high ceiling heights, and are unable to conduct their activities as a secondary user of an indoor bowling green.

Local schools indicate that whilst access to an indoor green would provide a further option for the Physical Education curriculum, their access and use of this facility would be minimal.

3. Gambling Policy

As the Club's facility is licensed with Electronic Gaming Machines, it is subject to Council's Gambling Policy.

Key Policy Statements within the Gambling Policy that relate to future facility developments at the Club include:

- "Policy Statement 6 - Council will not provide community grants, funding, sponsorship, publicity or promotion for community groups/organisations that undertake or promote gambling, unless there is significant community benefit demonstrated. Council will encourage any community group/organisation to transition away from gambling.
- Policy Statement 7 - Council will not support new agreements for Council owned or managed land or facilities to be provided to any clubs, community groups, organisations or associations who undertake gambling activities in Kingston or elsewhere, unless there is significant community benefit demonstrated. Council will encourage any community group/organisation to transition away from gambling."

alternative options.

There are several alternative approaches that could improve the Club's ability to extend playing time and provide all-weather protection for its members.

One common approach is to provide an all-weather green (synthetic) and/or standalone shelter, such as a tension membrane structure, to provide all-weather protection. In addition to providing a roof, these structures can also taper at the sides to further enhance the weather protection afforded to bowlers and spectators.

The cost of a tension membrane structure is generally much lower than the cost of traditional construction. As tension membrane structures are standalone structures, they can be installed without triggering the need for additional building compliance issues. However, they do have maintenance requirements and require replacement sooner than a traditional roof.

recommendation.

In the current environment, with a lack of expressed demand for additional indoor community space, and in the absence of a strong financial model and the likely inability of the Club to secure a loan, it is suggested that Council officers continue to work with the Club to identify suitable alternative facility improvements that boost improved bowls participation in the short-to-medium term.

Primarily, this includes the consideration of an all-weather bowling green and/or covered structure at the Club, rather than a fully enclosed indoor facility, which could be considered as a long-term option should the an expressed demand/need eventuate.

To strengthen the demonstrable significant community benefit required under Council's Gambling Policy, the Club have indicated that they would be willing to consider transitioning away from EGMs when their current entitlements period ends (circa 10 years). An agreement that sees Council invest in facility improvements to support improved sporting participation, in exchange for achieving long-term policy objectives of supporting community groups to transition away from gambling could be seen as a significant win-win.

In addition, any bowls club facility development also lends itself to considering an alternative venue entrance that removes the current requirement for patrons to access the venue via an entrance lobby directly adjacent to the gaming room, while also promoting the possibility of a combined development with the proposed sports pavilion upgrade, promoting the use of shared multi-use spaces.

cricket pitch provision.

The Victorian Cricket Infrastructure Strategy states that:

- the South East Bayside region recorded the second most participants per Region across the State, with the majority of the Region's participation occurring within Kingston (6th ranked LGA overall).
- Like several other landlocked inner Metropolitan Regions the area is faced with the challenge of accommodating increased participation levels and subsequent demand for additional facilities with limited access to green space for facility development.
- To compound this issue is the Region's higher than average ground to player ratio, lower than average synthetic pitch to population ratio, above average player penetration rate, and higher than average turf pitch provision level (35% of this provision falls within Kingston).
- It notes that Cricket Victoria is working with existing metropolitan cricket associations to deliver a more strategic approach regarding pitch type provision. Ensuring current and future turf/synthetic pitch playing field provision is strategic, financially sustainable, balances player pathway and development while at the same time increasing grassroots participation opportunities is a key focus.
- With ground access and availability continuing to be challenging, it is important Cricket Victoria continue to work with local association/ competition providers, clubs and local government to ensure cricket grounds and supporting infrastructure are being used to optimal capacity, and furthermore promote club and overall sport growth.
- Noting the limited flexibility and multi-use opportunities associated with turf pitch only grounds, CV note that they will prioritise the sustainable provision of turf wickets at venues that support player pathway and development initiatives and assess the suitability and current balance of synthetic and turf cricket pitches in-line with future demand.

Given the above directions from Cricket Victoria and the fact that the majority of competition currently played at Namatjira Park is for many of the clubs lower grades and/or the Mercantile Cricket Association (which somewhat falls outside of the formal Cricket Victoria turf cricket pathway under their proposal for all of turf cricket within a geographic zone to be combined i.e. Cricket

Southern Bayside), the ongoing provision of a turf table into the future must be reviewed.

The proposed changes to the field of play layout and associated ground redevelopment is the optimal time to install a synthetic cricket wicket to support increased participation outcomes.

Doing so would enable the conduct of junior and additional senior matches on site that are currently not available due to the provision of turf wickets.

Improved participation outcomes do need to be considered in comparison to the environmental impact of synthetic turf's contribution to the urban heat island affect.

field of play layout.

Given the South East Predators request for the provision of two gridiron fields to facilitate growth, particularly for females, and the expected demand for additional football (soccer) facilities within the region due to projected population growth, there is a unique opportunity to relocate the sports pavilion and expand upon the existing large oval in order to facilitate the space to provide two rectangular fields.

It is recommended that the field of play is developed with two rectangular fields running parallel to each other in a North-South orientation, with the provision of a cricket wicket in between the fields to limit any impacts on gridiron/football competition.

active recreation zone.

Given the existing tennis court is in extremely poor condition, the hitting wall is noticeably short in height and poorly located, the skate park requiring improvements to facilitate all ages and abilities and an extension of the basketball key area, there is an opportunity to consider redevelopment of these facilities into a co-located multi-use urban recreation zone.

As an example, this could consist of a full size tennis court running North-South, and modified size basketball and futsal courts running East-West on the same area. Adjoined to this could be additional facilities such as a ping pong table, double sided wall with tennis on one side and bouldering on the other, shade, seating etc.

An upgraded skate park incorporating BMX and/or pump track facilities could also be located alongside.

design approach.

The following vision and guiding principles have been adapted from the recently completed GR Bricker Reserve and Le Page Park Master Plan's to ensure a consistent and contemporary design approach to reserve development across Kingston.

vision.

The overarching design vision for the reserve is: *"Create a high-quality public realm that includes multi-functional built infrastructure and green open spaces suitable for a diverse mix of passive and active sport and recreational activities."*

guiding principles.

1. sport and active recreation infrastructure

1.1. Design infrastructure and open spaces that blur the boundaries between formal and casual, active and passive, to ensure the provision of a diverse offering that is attractive to a broad cross-section of the community

1.2. Ensure spaces are flexible enough to meet the needs of this generation and the next as needs morph and change

1.3. Be courteous to noise impacts on adjoining residents

2. Public amenity

2.1. Provide diverse, safe, attractive, vibrant, active open space with supporting infrastructure that encourages and promotes use

2.2. Balance the provision of natural and built infrastructure (i.e. trees for shade)

2.3. Integrate creative public art into the design of the landscape and/or buildings where appropriate

3. Safety

3.1. Create active and accessible places for all people with a high degree of both real and perceived safety

3.2. Maintain visibility throughout a majority of the site and use CPTED principles to ensure all public areas have good passive surveillance

3.3. Carefully consider the incorporation of park lighting to encourage and support night time activities and use

4. Mobility and access

4.1. Ensure easy, safe, and appealing access and circulation for pedestrians, cyclists, motorists and public transport users to and throughout the site and surrounds

4.2. Provide a network of walking and cycling paths throughout the reserve, including oval perimeter paths and paths to encourage recreational and fitness uses

4.3. Appropriately define and frame reserve entry and access points

5. Parking/traffic

5.1. Provide car parking that is easily accessed, safe and provides direct and universal access to all facilities and services

5.2. Parking should not dominate the public realm and should be sensitively located and detailed

5.3. Ensure safety is paramount in cohabitation of vehicle and pedestrian circulation

6. Tree and vegetation management

6.1. Retain existing trees with a very high or high retention value and support preservation of moderate or low retention value trees where possible

6.2. Retain existing park character of tree canopy, grassed open spaces and site lines throughout reserve

6.3. Plant new canopy trees and indigenous tree planting throughout the reserve, including buffers along the reserve boundaries and to frame sporting facilities

7. Sustainability

7.1. Demonstrate sustainable use of resources through the design of the reserve in terms of energy efficiency, water usage and materials selection, and ensure an integrated approach to social, economic, and environmental success and performance of the reserve

7.2. Integrate stormwater management approach and water sensitive urban design infrastructure into overall design

7.3. Promote use of energy efficient infrastructure such as solar-power and LED lighting

proposed directions.

The Namatjira Park Master Plan must propose facilities and elements to support an existing demand for sport and active recreation and an increase in passive recreation, offering a range of opportunities for the improvement of the health and wellbeing of the community.

A range of active sport and recreation infrastructure upgrades could be proposed, such as provision of cricket nets, floodlight upgrades and a pavilion redevelopment.

However, a key component of the Master Plan should be supporting the existing passive, social and non-competitive spaces such as increasing pedestrian access to the site, improving the path network throughout the reserve, additional gathering spaces and shade/seating areas etc.

The benefit of getting the balance between active and passive just right ensures use of the reserve is maximised, boosting the local amenity of the site and building whole of community ownership.

Supporting additional use of the site beyond traditional sporting pursuits will also assist in increasing site safety and surveillance through more 'eyes' around the space, deterring anti-social behaviours.

sport.

- Upgrade changerooms and pavilion with a particular focus on promoting universal design principles, providing female friendly facilities, and increasing multi-purpose spaces
- Investigate relocation of pavilion to South-West of oval - opportunity for combined development with bowls club
- Facilitate provision of two rectangular fields overlaid on existing oval
- Include provisions for player/coaches boxes, scoreboard and other ancillary facilities (as predicated by relevant sporting code standards)
- Upgrade of floodlights to training standard (100 lux), but constructed with capacity for future upgrade to playing standard (2/300 lux)
- Complete renewal of fence to Council standard black chain mesh
- Provide cricket nets
- Improve drainage and irrigation with any field of play development
- Accommodate new sporting club during winter sporting season when demand requires

active recreation.

- upgrade outdoor exercise equipment
- upgrade the existing playground to be suitable for all ages and abilities
- develop urban recreation zone that incorporates tennis court, basketball court, tennis hitting wall, skate/bmx facilities and other recreational infrastructure in single concentrated area

wetlands.

- continue to preserve area as a 'natural oasis' with limited formal development

parking.

- formalise accessway parking for central car park and provide turning bay
- development of additional car parking area if additional sporting field provided

safety.

- improve security lighting throughout reserve. Recommend path lighting every ~30m for public safety and activation

trees + vegetation.

- a range of well vegetated areas will support landscape improvements throughout the site.

mobility + access.

- improve pedestrian links to sports field from all carparks
- establish bicycle parking hoops at strategic locations across the site
- provide ped refuge adjacent to bus stop
- provide granitic sand path to link existing trails to sports pavilion and other infrastructure
- provide shared path network throughout site linking existing and proposed cycling routes
- improve signage, including provision of distance markers throughout trail network
- formalise existing pedestrian access entry points and promote adherence to CPTED principles to improve visitor access and safety
- develop a shared path along the Mordialloc Settlement Drain to link the site to the shared path along the Dingley Bypass

public amenity.

- create places of congregation and social interaction (such as shade and seating)
- provision of water drinking stations, paying particular attention to high use areas
- Improve location and function of park amenities inclusive of shade, seating, water taps throughout reserve, paying particular attention to high use areas and areas of social gathering such as playground

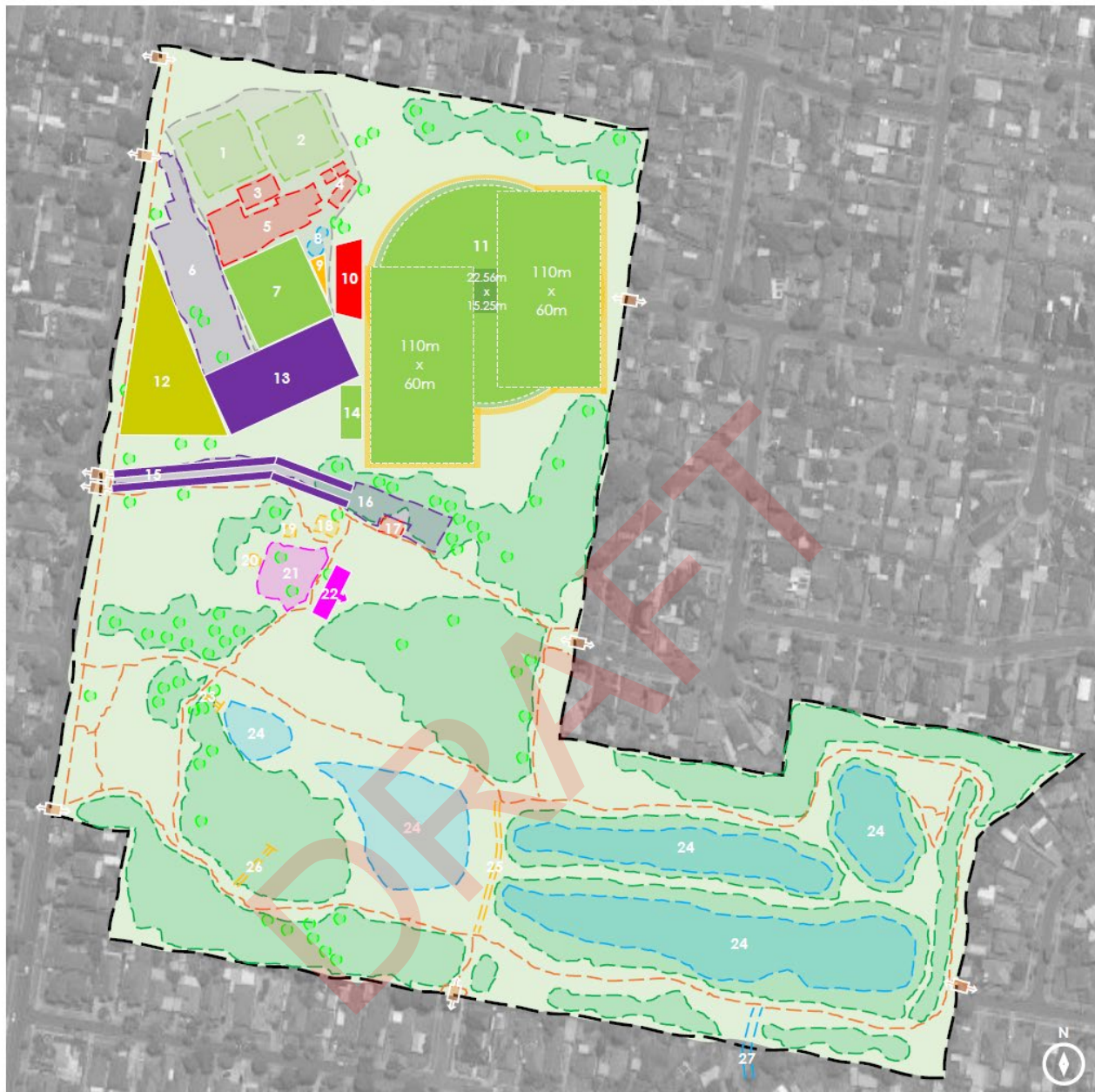
sustainability.

- Ensure stormwater connections are prioritised and consider installing irrigation of open space areas as part of any future works to support provision of 'cool refuges'

early ideation plans.

The following early ideation plans were developed as part of the design process to determine what functional layout could be achieved at the site.

Figure 18. EIP - Option 1



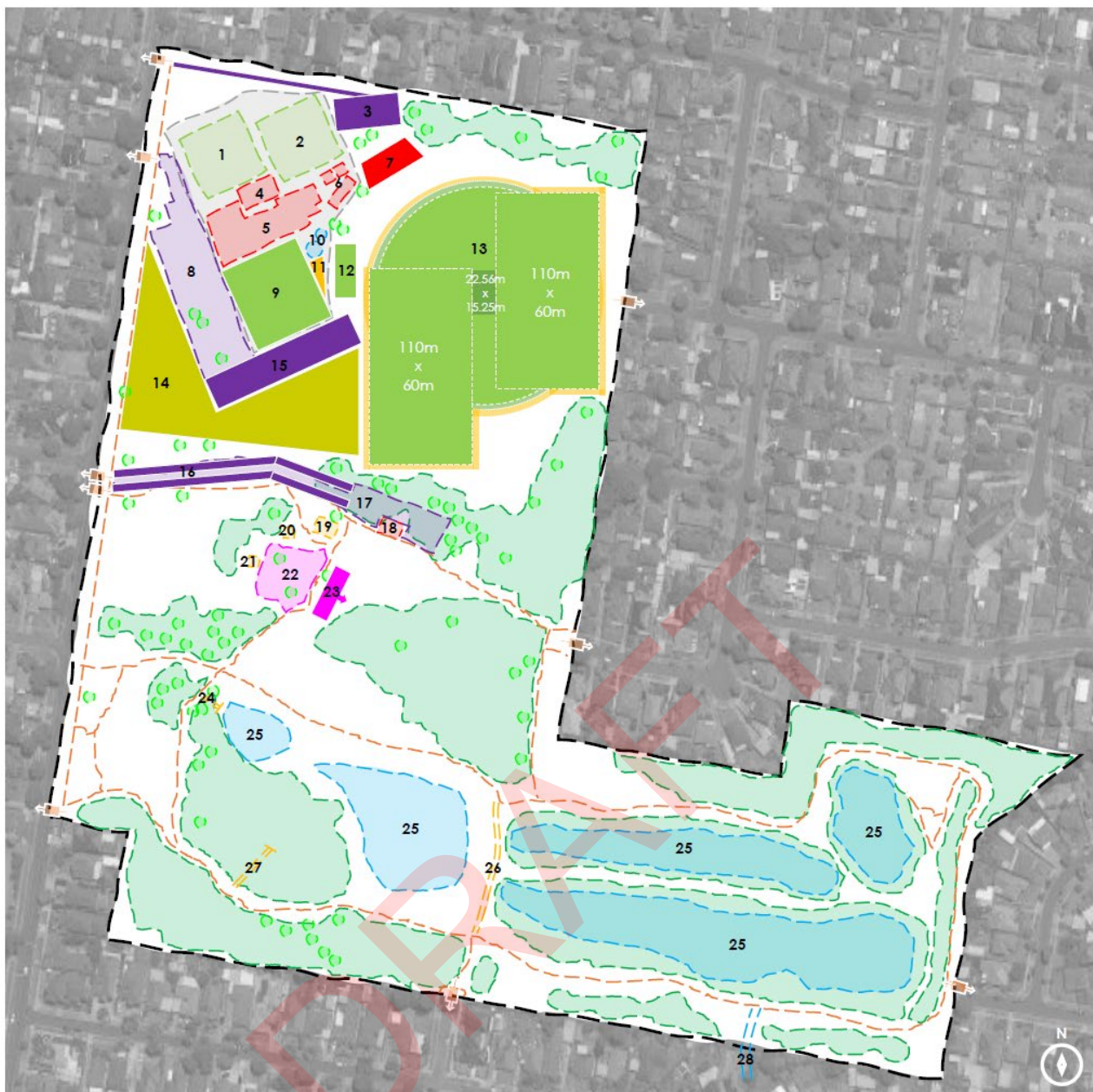
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| | | | | | | | | | |
|----|--|----|--------------------------------------|----|--|----|---------------------|----|---|
| | sport. | | playspace. | | buildings + pavilions. | | parking. | | path network. |
| | water bodies. | | public amenity. | | high value trees. | | active recreation. | | heavy vegetation. |
| 1 | Bowls green #1 37m x 37m | 2 | Bowls green #2 37m x 37m | 3 | Bowls alfresco 225m ² | 4 | Bowls storage | 5 | Bowls Club 1500m ² |
| 6 | Bowls club parking 139 spots | 7 | All-weather green development | 8 | Bowls club water tanks | 9 | Landscaping | 10 | Sports pavilion 500m² |
| 11 | Playing fields 2 x rect. / 1 x oval | 12 | Active recreation zone | 13 | Parking extension 50 spots | 14 | Cricket nets | 15 | Parking extension 15 parallel spaces |
| 16 | Playspace parking 24 spots | 17 | Public toilet 60m ² | 18 | BBQ + shelter 10m x 4m | 19 | Park bench/seat | 20 | Park bench/seat |
| 21 | Playspace 850m ² | 22 | Nature based play extension | 23 | Viewing platform | 24 | Wetlands | 25 | Bridge/deck |
| 26 | Viewing platform | 27 | Melbourne Water drain | 28 | LED sensor lighting along paths | | | | |

*new developments in bold / filled colour.

**refer to cost estimate for additional item detail.

Figure 20. EIP - Option 2

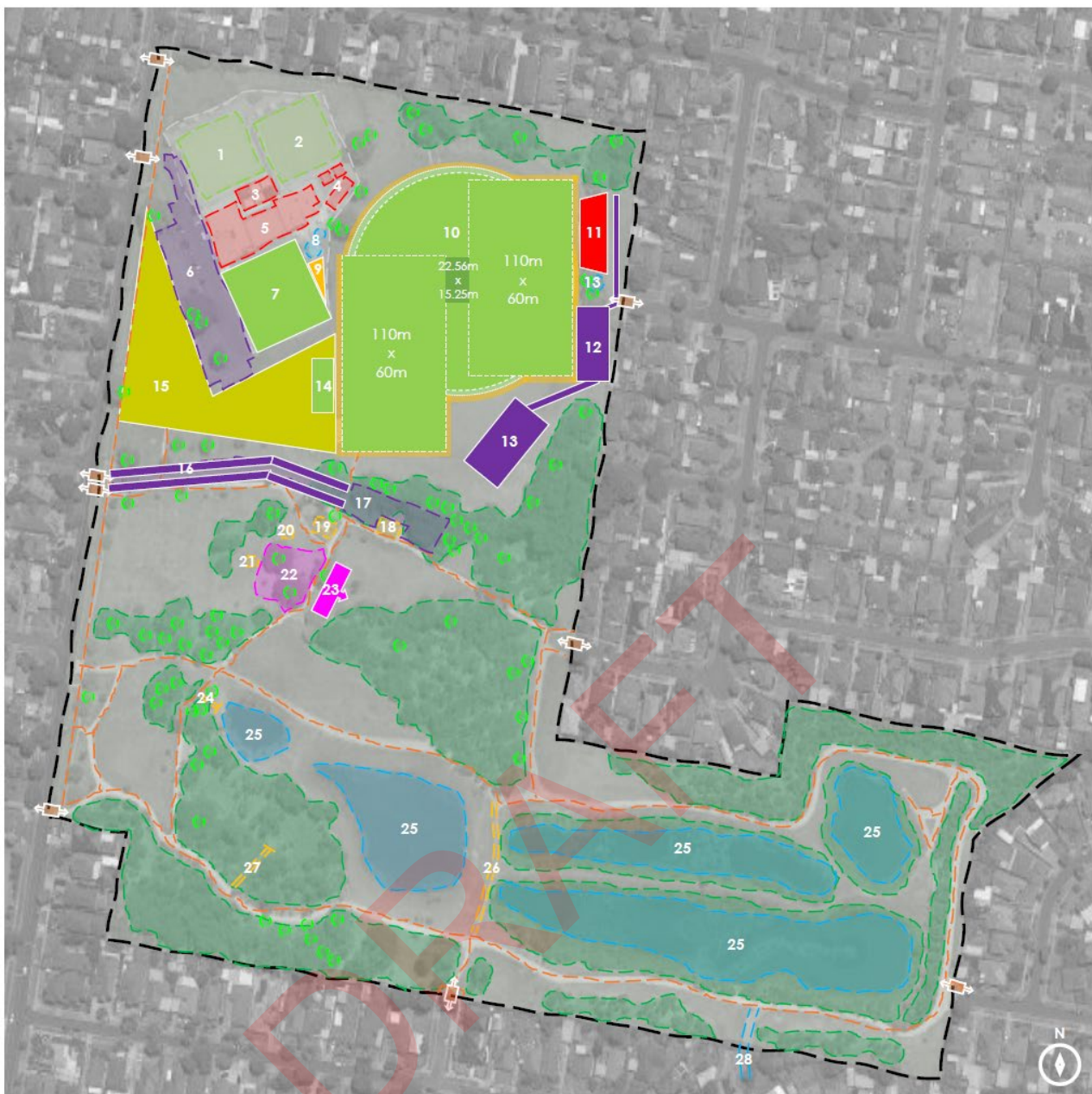


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| | | | | | | | | | |
|----|---|----|--------------------------------------|----|--|----|-------------------------------------|----|----------------------------------|
| | sport. | | playspace. | | buildings + pavilions. | | parking. | | path network. |
| | water bodies. | | public amenity. | | high value trees. | | active recreation. | | heavy vegetation. |
| 1 | Bowls green #1 37m x 37m | 2 | Bowls green #2 37m x 37m | 3 | Pavilion parking 20 spots | 4 | Bowls alfresco 225m ² | 5 | Bowls Club 1500m ² |
| 6 | Bowls club storage | 7 | Sports pavilion 500m ² | 8 | Bowls club parking 139 spots | 9 | All-weather green development | 10 | Bowls club water tanks |
| 11 | Landscaping | 12 | Cricket nets | 13 | Playing fields 2 x rect. / 1 x oval | 14 | Active recreation zone | 15 | Parking extension 30 spots |
| 16 | Parking extension 15 parallel spaces | 17 | Playspace parking 24 spots | 18 | Public toilet 60m ² | 19 | BBQ + shelter 10m x 4m | 20 | Park bench/seat |
| 21 | Park bench/seat | 22 | Playspace 850m ² | 23 | Nature based play extension | 24 | Viewing platform | 25 | Wetlands |
| 26 | Bridge/deck | 27 | Viewing platform | 28 | Melbourne Water drain | | | | |

*new developments in bold / filled colour.
**refer to cost estimate for additional item detail.

Figure 21. EIP – Option 3

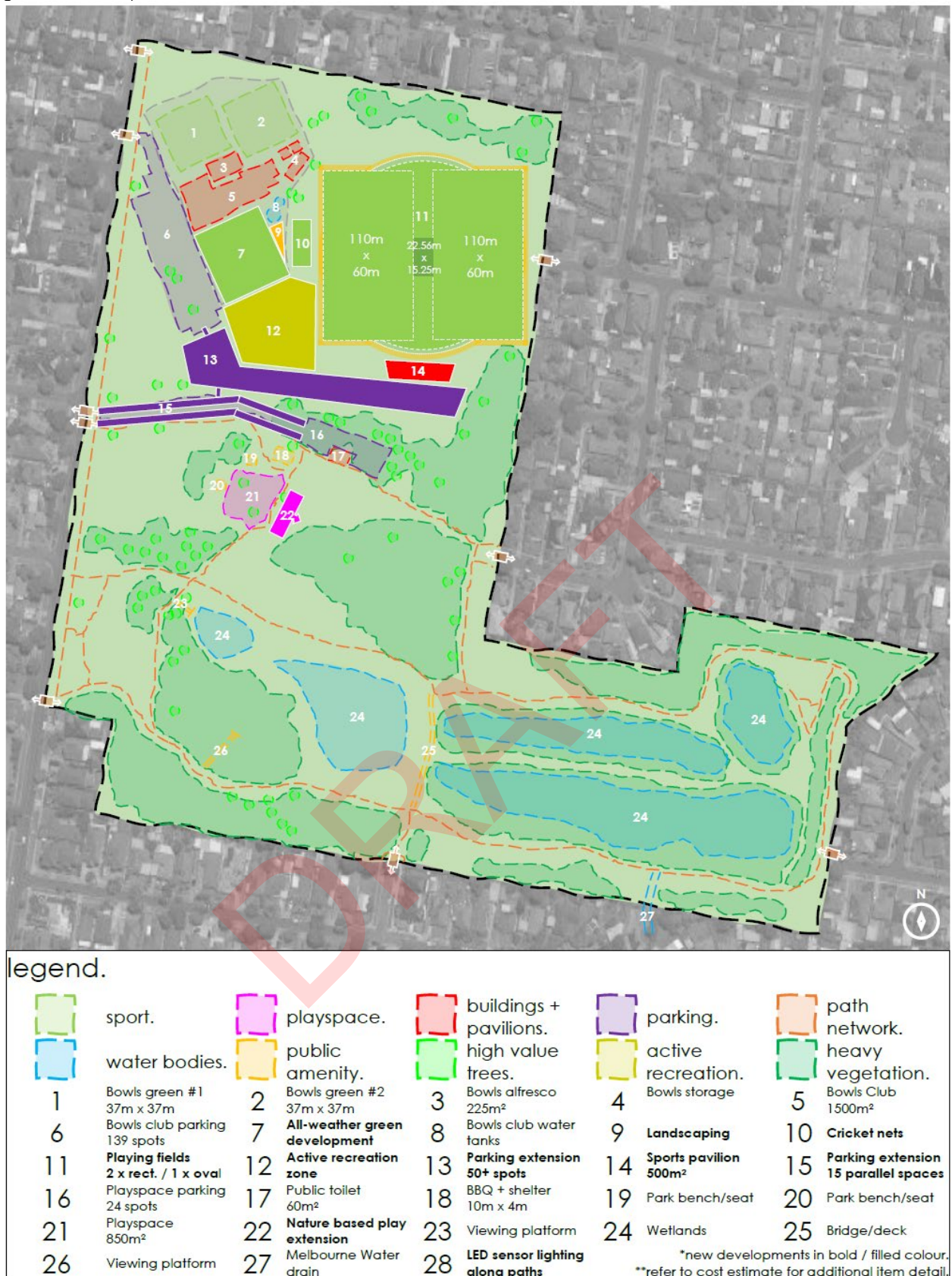


legend.

| | | | | | | | | | |
|----|--|----|---------------------------------------|----|--|----|----------------------------------|----|---|
| | sport + active recreation. | | playspace. | | buildings + pavilions. | | parking. | | path network. |
| | water bodies. | | public amenity. | | high value trees. | | active recreation. | | heavy vegetation. |
| 1 | Bowls green #1 37m x 37m | 2 | Bowls green #2 37m x 37m | 3 | Bowls alfresco 225m ² | 4 | Bowls storage | 5 | Bowls Club 1500m ² |
| 6 | Bowls club parking 139 spots | 7 | All-weather green development | 8 | Bowls club water tanks | 9 | Landscaping | 10 | Playing fields 2 x rect. / 1 x oval |
| 11 | Sports pavilion 500m ² | 12 | Pavilion parking 20 spots | 13 | Pavilion parking 30 spots | 14 | Cricket nets | 15 | Active recreation zone |
| 16 | Parking extension 15 parallel spaces | 17 | Playspace parking 24 spots | 18 | Public toilet 60m ² | 19 | BBQ + shelter 10m x 4m | 20 | Park bench/seat |
| 21 | Park bench/seat | 22 | Playspace 850m ² | 23 | Nature based play extension | 24 | Viewing platform | 25 | Wetlands |
| 26 | Bridge/deck | 27 | Viewing platform | 28 | Melbourne Water drain | | | | |

*new developments in bold / filled colour.
**refer to cost estimate for additional item detail.

Figure 22. EIP – Option 4



revised ideation plans.

In consultation with Council officers, the following revised ideation options were produced as an amalgamation of the four early ideation plans with the key elements deemed most practical included such as:

- the provision of an enlarged and consistent field of play area (rather than two fields off-set from each other),
- the relocation of the sporting pavilion to the South-West flank of the field of play,
- development of a multi-use active recreation zone that consolidates built form to a single area where possible, and
- provision of expanded parking.

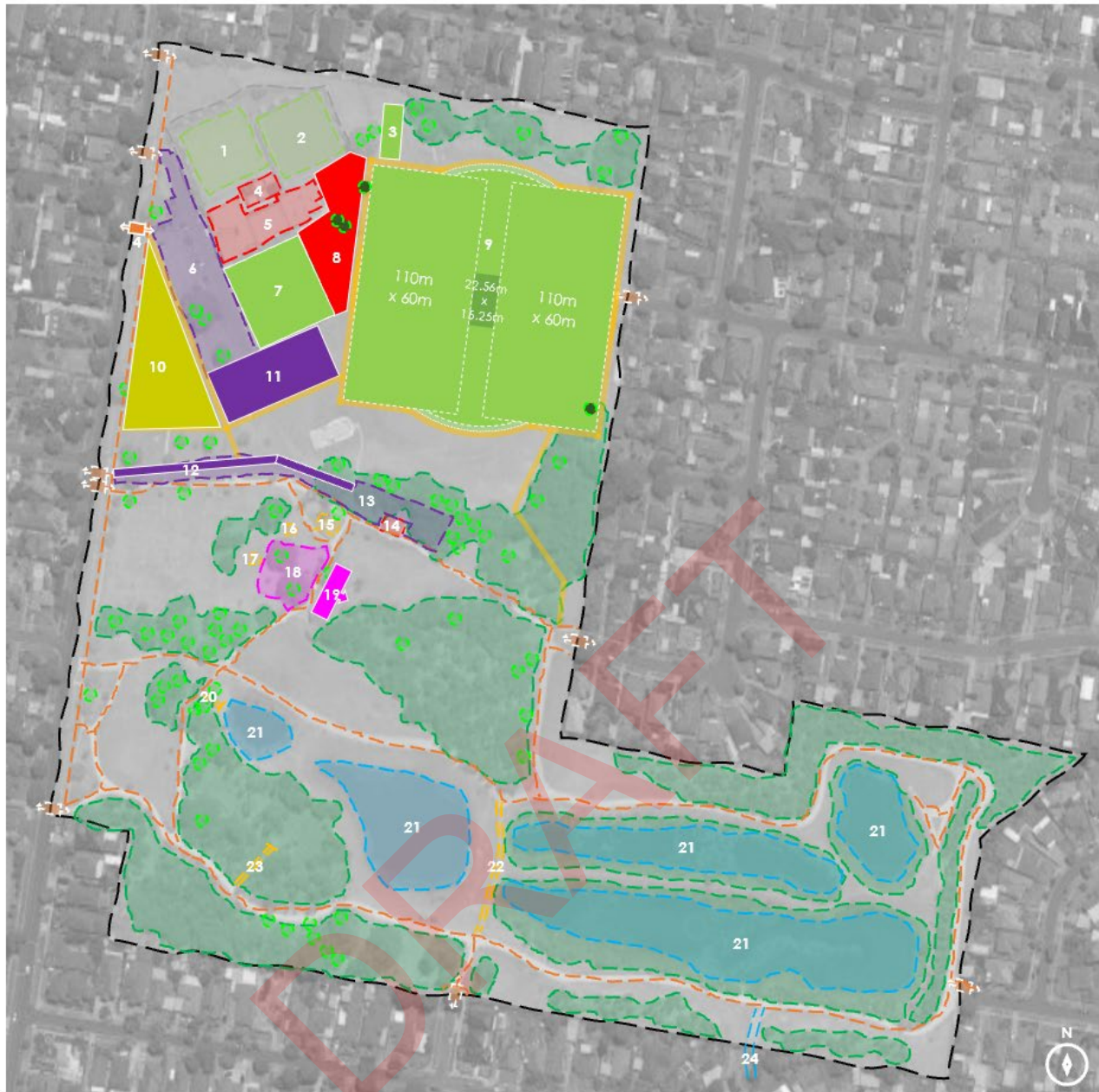
Additional inclusions in each concept option not specifically shown on the maps include:

- the removal of the overhead wire lines previously used to detract gulls,
- formalisation of each access/entry point,
- provisions for player/coaches boxes, scoreboard and other ancillary facilities (as predicated by relevant sporting code standards)
- upgrade of floodlights to training standard (100 lux), but constructed with capacity for future upgrade to playing standard (2/300 lux)
- significant earthworks and ground development (inclusive of drainage and irrigation) with any field of play development
- provision of distance markers throughout trail network
- consider installing irrigation of open space areas as part of any future works to support provision of 'cool refuges'
- ongoing tree and vegetation planting throughout the site
- establishment of relevant public amenity features adjacent to any new developments such as seating, shade, water fountains, bicycle parking etc.
- improve security lighting throughout reserve including LED sensor path lighting every ~30m
- ongoing upgrade and renewal of signage throughout reserve

Field of play design considerations:

- the field of play size is extremely constrained.
- provision of two rectangular fields requires the removal of 3-4 high value trees and additional vegetation on the Eastern side adjacent to Leslie Court.
- existing site is 158m in width (East-West) at its shortest point (from the bowls club fence to residential properties).
- provision of two fields requires a playing surface of 135.25m in width and 5m run-off either side for a total of 145.25m.
- therefore only 6.5m of additional circulation space is available either side of the pitches.
- line marked pitches will be a little over 10m from residential boundaries (similar to the distance of the existing pavilion to residential properties).

Figure 23. RIP – Option 1

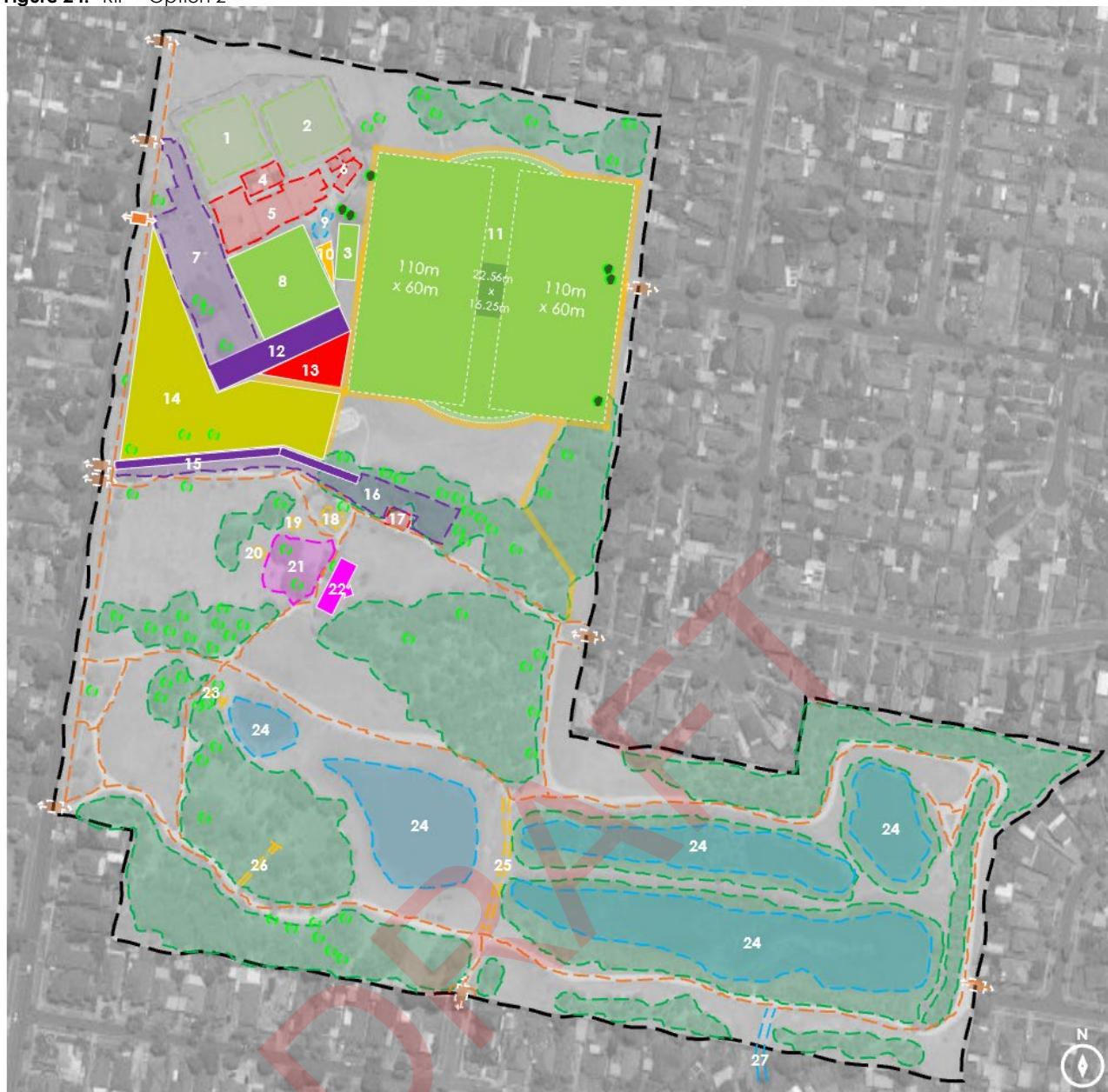


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| | | | | | | | | | |
|----|------------------------------------|----|--|----|--|----|---|----|--|
| | sport. | | playspace. | | buildings + pavilions. | | parking. | | path network. |
| | water bodies. | | public amenity. | | high value trees. | | active recreation. | | heavy vegetation. |
| 1 | Bowls green #1 37m x 37m | 2 | Bowls green #2 37m x 37m | 3 | Cricket nets | 4 | Bowls alfresco 225m ² | 5 | Bowls Club 1500m ² |
| 6 | Bowls club parking 139 spots | 7 | All-weather green development | 8 | Shared multi-use pavilion upgrade | 9 | Playing fields 2 x rect. / 1 x oval | 10 | Active recreation zone |
| 11 | Parking extension 50+ spots | 12 | Parking extension 15 parallel space | 13 | Playspace parking 24 spots | 14 | Public toilet 60m ² | 15 | BBQ + shelter 10m x 4m |
| 16 | Park bench/seal | 17 | Park bench/seal | 18 | Playspace 850m ² | 19 | Nature based play extension | 20 | Viewing platform |
| 21 | Wetlands | 22 | Bridge/deck | 23 | Viewing platform | 24 | Melbourne Water drain | 25 | LED sensor lighting along paths |

*new developments in bold / filled colour

Figure 24. RIP – Option 2



legend.

| | | | | | | | | | |
|----|---|----|------------------------------------|----|---|----|-------------------------------------|----|--|
| | sport. | | playspace. | | buildings + pavilions. | | parking. | | path network. |
| | water bodies. | | public amenity. | | high value trees. | | active recreation. | | heavy vegetation. |
| 1 | Bowls green #1 37m x 37m | 2 | Bowls green #2 37m x 37m | 3 | Cricket nets | 4 | Bowls alfresco 225m ² | 5 | Bowls Club 1500m ² |
| 6 | Bowls storage | 7 | Bowls club parking 139 spots | 8 | All-weather green development | 9 | Bowls club water tanks | 10 | Landscaping |
| 11 | Playing fields 2 x rect. / 1 x oval | 12 | Parking extension | 13 | Sports pavilion 700m ² | 14 | Active recreation zone | 15 | Parking extension 15 parallel spaces |
| 16 | Playspace parking 24 spots | 17 | Public toilet 60m ² | 18 | BBQ + shelter 10m x 4m | 19 | Park bench/seat | 20 | Park bench/seat |
| 21 | Playspace 850m ² | 22 | Nature based play extension | 23 | Viewing platform | 24 | Wetlands | 25 | Bridge/deck |
| 26 | Viewing platform | 27 | Melbourne Water drain | 28 | LED sensor lighting along paths | | | | |

*new developments in bold / filled colour

Figure 25. Route distance options



DRAFT

stakeholder design workshop

A **Stakeholder Design Workshop** was held on Tuesday 23 February 2021 on site at the Clayton Bowls Club and attended by representatives from:

- Clayton Bowls Club
- South Eastern Predators Gridiron Club
- Parkdale United Cricket Club
- Kingston United Cricket Club
- Friends of Namatjira

In general, the feedback was supportive of the proposed plans.

A number of questions were asked about the shared sports pavilion proposal, particularly regarding size, space allowances and storage requirements. This resulted in unified support for the idea, pending more detailed designs and pavilion layout sketches.

Discussion was also held on the provision of two rectangle sports fields, the required removal of trees and vegetation to accommodate the fields, and potential flooding impacts on neighbouring residences.

It was noted that every effort is made to retain all trees, however in some instances their removal may be required to facilitate broader long-term community outcomes. While the establishment of trees can take considerable time, Council's preferred position to plant 3 new trees for every 1 tree removed was noted, in addition to ongoing significant tree and vegetation planting throughout the site to maintain and improve its ecological value.

It was also noted that flood mitigation strategies would be pursued with engineers through a detailed design process for the sports fields redevelopment should that option be pursued.

An opportunity for all stakeholders to provide **formal written feedback** was also provided which yielded the following summarised responses:

- South Eastern Predators Gridiron Club

Request that the turf wicket be replaced with synthetic or the rectangle fields be offset to enable gridiron player boxes to be in the centre of the field (area would otherwise be roped off to preserve turf wicket).

Recommend installation of nets be considered to stop balls from entering backyards.

Install a road and additional parking at presently unused parcel of land north of the bowls club fence line.

Enlarge the active play zone and provide a larger shared pavilion.

- Carnegie United CC

Requested the provision of turf practice cricket nets as few other grounds in the locality have them – mixture of turf and synthetic an option.

- Parkdale United Cricket Club

Noted their preference for revised option #1.

- Kingston United Cricket Club

Noted their preference for revised option #1.

- Cricket Victoria

Noting the plan to introduce a synthetic wicket, maintaining the turf will be vital considering the needs of current users. Option for using Flicx Pitches as an alternative to a traditional synthetic wicket (may also allow junior matches to be played concurrently).

Great to have the Nth/Sth alignment for the nets. Location preference would be Option 1 based on impact to viewing (cricket and grid iron) presented by the West aspect in Option 2. Recommend a three-lane training net structure. Also note the need to consider pathways and parking to net location.

- Clayton Bowls Club

Note that the Club is eager that the re-development of Green #3 is included in the plan. As such, the Board of Management fully supports proposed Option #1, which includes the provision of an all-weather (synthetic) Green under a standalone membrane structure and a proposed combined development with a new sports pavilion.

- Bowls Victoria

Fully supports plans to enhance the club facilities by building a cover over one green. The upgrading of the facility will not only

benefit Club members and assist the development and growth of the Club but will also improve the sporting facilities available within the local community and thereby offer the opportunity for broader community engagement.

Also supportive of intent to extend on the club's existing facility to facilitate a shared pavilion for other sporting clubs that use the playing fields (gridiron and cricket). This ensures no double up on core infrastructure such as public toilets which are already provided for at the bowls club.

- Melbourne Water

In principle, are supportive of Council's endeavours to improve amenity and connections for the community as outlined.

The opportunity to develop a shared path along the Mordialloc Settlement Drain to link the site to a broader network aligns well with Melbourne Water's Healthy Waterways Strategy performance objective for the subcatchment; to increase access to and along waterways and wetlands by filling gaps and improving connections to existing path networks.

Note that any works that are likely to incur changes to current maintenance schedules must be ratified through a formal maintenance agreement.

- Friends of Namatjira

Four separate individual responses were provided by members.

A number of concerns were raised that highlighted a lack of understanding of the project process and design options including:

- The thought that what was provided were final concept plans, or that concept plans would not be developed at all (they were only early design options to be refined further into concept plans)
- That the community would not be involved in decision making (a second round of public consultation is the next stage of engagement).
- 'Creating two fields simply to protect the turf wicket and expand the cricket oval size' and there being no business case that supports two fields (the provision of two rectangle fields is an

effort to 'future-proof' the site for generations to come, inclusive of gridiron expansion and inclusion of additional sporting clubs based on projected population growth as established in the Needs Analysis)

- Use of synthetic turf on gridiron fields (this is not an option being considered)
- Closure/ removal of Newport Rd entrance (under no design options is this entrance to be removed – all options include additional access paths strengthening the connection of this entrance to the existing path network)
- Cricket nets location means that balls would be hit at buildings, properties or paths (intent that cricket nets would be enclosed for safety)

Notwithstanding these misinterpretations, the responses provided a number of requests for consideration including:

- Support enhancing the active recreation area but maintain the separation between items/activities.
- Maintain the exercise equipment in its current location.
- Do not move the existing sports pavilion.
- Do not provide two rectangle fields or enlarge playing area. Establish additional sports fields on other sites, namely former tip sites, not at Namatjira as it has a natural soil profile.
- Amenity impact on local residents from playing field enlargement, lights, noise etc.
- No loss of trees.
- No increase in paved carparks or other impermeable surfaces.
- Plantings to be of local provenance.
- Energy for all lighting to be sourced from 100% renewables. Smart LED lighting for the security lighting.
- Be considerate of drainage and flooding issues at the site, particularly Newport Rd drains overflowing and the need for overland water flow throughout the park.
- Do not water passive areas with purchased water from Melbourne Water, plant shade trees instead.
- Request that alternative options are provided.

draft concept plans.

Draft concept plans and pavilion layouts were then developed based on the stakeholder feedback received during the design development phase. Refer Appendix 9 for full plans.

Figure 26. Namatjira Park – Draft Concept Plan



further investigations.

Following feedback received, two additional sub-consultant reports were procured to better understand the impacts of the proposed master plan development, including an ecological assessment of the proposed tree loss, and an engineer report into the feasibility and effect of the field of play development.

ecological assessment.

biosis pty ltd were engaged to undertake an assessment of the vegetation affected by the proposed master plan development.

The report (appendix 10) notes:

- vegetation affected by the current option consists of scattered planted Australian native trees and one possibly self-sown tree over introduced grass lawn in a woodland vegetation structure.
- Twelve trees require removal under the current option, as follows.

Figure 27. Affected trees

| # | Species | Common name | Native | Origin |
|----|---------------------------------|-------------------|--------|---------|
| 1 | <i>Corymbia ficifolia</i> | Flowering Gum | | Planted |
| 9 | <i>Eucalyptus sideroxylon</i> | Mugga | Yes | Planted |
| 10 | <i>Corymbia ficifolia</i> | Flowering Gum | | Planted |
| 11 | <i>Eucalyptus sideroxylon</i> | Mugga | Yes | Planted |
| 12 | <i>Eucalyptus sideroxylon</i> | Mugga | Yes | Planted |
| 24 | <i>Eucalyptus scoparia</i> | Willow Gum | | Planted |
| 25 | <i>Casuarina cunninghamiana</i> | River Oak | | Planted |
| 45 | <i>Eucalyptus camaldulensis</i> | River Red-gum | Yes | Unknown |
| 46 | <i>Eucalyptus globulus</i> | Southern Blue-gum | Yes | Planted |
| 47 | <i>Casuarina cunninghamiana</i> | River Oak | | Planted |
| 48 | <i>Corymbia maculata</i> | Spotted Gum | Yes | Planted |
| 49 | <i>Corymbia maculata</i> | Spotted Gum | Yes | Planted |

- These trees provide food resources to a range of native vertebrate and invertebrate fauna, particularly birds and insects. They represent a small proportion (3%) of the 346 trees in Namatjira Park (Homewood Consulting 2020) so any

impact of their removal on these fauna would be minor.

- Trees native to Victoria require a planning permit requirement under Clause 52.17 of the Kingston planning scheme unless exempt under the Planted vegetation exemption. All trees except tree 45, a River Red-gum, are clearly planted and are thus exempt from permit requirement.
- The River Red-gum is also likely planted but the possibility of it being natural or self-sown from adjacent plantings cannot be excluded unless there is a detailed planting plan for the park showing it to be planted. The species is correct for the geology (GSV 1981) and pre-1750 ecological vegetation class (EVC) which is Plains Grassy Woodland (DELWP 2021).
- River Red-gum is considered 'secure' within the City of Kingston (City of Kingston 2018).
- Accordingly a permit under Clause 52.17 is required for removal of the River Red-gum. With a diameter at breast height (DBH) of 51 cm it is a 'small tree'. A native vegetation removal (NVR) report and an offset are required under the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017).

Subsequently, revised plans highlight that trees 45 and 46, which were originally thought to be impacted, are indeed unaffected by the proposed development. As such, any concern for the loss of the River Red-gum (tree #45) is null and void.

In addition, biosis pty ltd were asked to provide commentary on the proposed sportsground lighting. The report notes:

- As the site is within an urban area in which there is considerable existing artificial light, it is not expected that the proposed lighting will significantly affect fauna beyond the general environs of Namatjira Park
- The introduction of the new lights is unlikely to significantly add to the quantum of artificial lighting and will not affect migratory birds flying overhead
- If flying insects are attracted to the lights, microbats may in turn be attracted to forage around the lights and this may expose local species to predation
- None of the fauna involved are likely to include any listed threatened species

engineer assessment.

SportEng pty ltd were engaged to undertake a feasibility assessment on the proposed field of play development. This report aids in identifying constraints that might deem this development unfit for the proposed facilities and help aid in the purpose of construction.

The report (Appendix 11) notes that *'the proposed master plan appears to be suitable for the site.'* IT comes to this conclusion based on the following excerpts from the report:

- Based on available information no authority assets are likely to be impacted by the proposed works.
- The proposed carpark extension will be over an easement; however the existing carpark is already of the same easement so this should not be an issue.
- The existing oval surface shape appears suitable for the intended overlay. The current oval consists of an off-centred domed shape playing surface with the height point located northeast off-set from the centre point of the oval.
- A centralised high point with a constant radial gradient should easy be achieved via balance cut-to-fill (assuming appropriate subgrade material). This would likely result in the levels along the eastern boundary line being similar to existing levels, except where the footprint extends across the existing batters. In these locations the design grades would extent and new levels set.
- It is likely Council will require the stormwater discharge from the site to not exceed the predevelopment flows. The proposed master plan does not significantly increase the extent of impervious areas. The larger pavilion, extended carpark and additional hard courts will increase the stormwater run-off, however through typical stormwater detention infrastructure the flow can readily be retarded to meet requirement.
- The overland flow path for the proposed master plan will not vary much than the existing conditions. The natural terrain for the site will direct the overland flow to the south of the site.
- It is assumed that the oval and areas which consist of turf landscaped areas will need to be stripped a minimum of 150mm. This stripped organic layer would likely need to be disposed off-site.
- Assuming preferred subgrade conditions, the bulk earthworks for the oval should be able to be a balanced cut-to-fill

exercise (i.e. no excess materials removed from site) while additional cut generated from the other elements of the masterplan could be lost on site in the surrounding embankments.

The report also provides commentary on a range of additional design considerations, which have been incorporated into designs:

- There is a pinch point in the south-east corner of the site that may require a small height retaining wall. If a footpath is required along the south-east corner of the site, there will likely be the need for a localised 900mm high retaining wall.
- The proposed soccer fields do not comply with Football Victoria (FV) minimum requirements (100m x 64m) however they do comply with the FV rules of competition minimum requirements (96m x 60m) and with FIFA Laws of the Game (90m x 60m)
- Behind goal netting for soccer pitches would clash with footprint of the gridiron fields. Strategically locating grass mounds outside the footprint of the gridiron fields would aid with soccer balls rolling away
- Utilising the cricket wickets as run-off for soccer will impact the ability to curate the wickets for the cricket season post-soccer season. This may delay the use of these wickets
- Consider tweaking the orientation of the nets towards the east to avoid the chance of cricket balls being hit into the lawn bowl facility
- The eastern tennis court location directly adjacent to the carpark may result in balls landing hitting cars
- The proposed 3-on-3 courts are orientated east-west. Recommend rotating to be northsouth in alignment with tennis court and splitting with the goal posts hard against tennis fence
- To develop a larger senior pitch (100m x 64m plus run-offs), the cricket wickets could be shifted off-centre and the second field would need to be used for junior games/training only.
To reduce the need for 5m offset along the whole side of a pitch where the players benches are to be located, indent the location of the players benches so that the 5m is realised locally where the benches are however only 3m for the rest of the sideline.

when?

implementation.

funding + priorities.

The Implementation Plan below provides an indication of probable costs and priority of works. The priority ranking reflects the:

- Dependency of other works;
- Level of design development required;
- Available funding; and
- Statutory and regulatory approvals, where applicable.

The proposed developments within the Master Plan have been estimated at a total cost of \$9,085,000 and is recommended for completion over a 5-7 year period.

Implementation is subject to future Council Budget and/or external funding opportunities.

A cost plan prepared by a reputable Quantity Surveyor will be procured to provide increased certainty of project costs.

Figure 28. Implementation Plan: Namatjira Park Master Plan

| # | ITEM | DESCRIPTION | PRIORITY | EXPECTED COST | |
|---|-------------------------------|---|----------|--|-------------|
| | | | | BASIS | VALUE |
| 1 | Shared multi-purpose pavilion | Relocation of 700m ² equivalent pavilion as extension of bowls club facility, per indicative layout sketches. Inclusive of remodelling of some existing internal areas, new storage areas, relocation of water tanks, adjacent landscaping and demolition of existing. | High | 700m ² @ \$4,000/m ² | \$2,800,000 |
| 2 | Bowling green #3 | Redevelopment as covered, all-weather synthetic green utilising tension membrane structure or similar. Inclusive of adjacent landscaping and renewal of external 'al fresco' areas between existing facility and new covered green. | High | Bowls green @ \$350,000 Roof structure @ \$1,000,000 Landscaping and al fresco development @ \$400,000 | \$1,750,000 |
| 3 | Field of play | Development of expanded field of play area (116m x 155m gross area) to accommodate two rectangle fields (110m x 60m) with a new turf wicket table (23m x 15m) between and an oval (100m x 112m) overlayed. Includes allowance for safety run-offs of 3m at goal lines and between fields and turf table, 5m on external sides. Includes drainage and irrigation upgrades, and provision of covered player boxes, scoreboard and other ancillary facilities. | Low | Full rectangle field ground reconstruction @ \$500,000 x 2 | \$1,000,000 |
| 4 | Sports lighting | Upgrade of floodlights to training standard (100 lux) but constructed with capacity for future upgrade to playing standard (200 lux). | Medium | New 100 Lux LED system for rectangle field @ \$150,000 x 2 | \$300,000 |
| 5 | Cricket nets | Provision of 3 lane minimum cricket net structure. Develop as fully enclosed structure and consider provision of futsal goals built into fence line to promote alternative uses. | High | Similar project comparison | \$70,000 |

| | | | | | |
|-------------------|---------------------------------|--|------------------|--|--------------------|
| 6 | Northern carpark renewal | Renewal of existing 139 parking spots and allowance for kerb extension to provide new exit point onto Springs Rd facilitating one-way traffic flow through carpark. Includes provision of overflow parking area for up to 50 added informal parking spots to accommodate peak usage. | Low | Car park @ \$3,500 x 139 | \$500,000 |
| 7 | Active recreation zone | Renewal of existing infrastructure, including the provision of tennis courts (x2) with basketball/netball (x1) and futsal (x1) courts overlayed, rebound wall and skate/ scooter/ BMX infrastructure. Overlaying of additional courts (i.e. futsal goals running east/west across other courts) and provision of supplementary active recreation infrastructure such as a bouldering wall, ping pong table etc.) subject to detailed design. | High | Single court construction @ \$100,000 x 2 Rebound wall @ \$50,000 Skate infrastructure @ \$150,000 | \$400,000 |
| 8 | Central carpark remodel | Renewal of existing 24 parking spots and provision of an estimated 15 new parallel parking spaces along access road and provision of vehicle turning point at rear of public toilets. | Medium | Car park @ \$3,500 x 39 | \$150,000 |
| 9 | Playspace augmentation | Review accessibility improvements and implement ongoing renewal of infrastructure as required. Develop nature-based play extension into adjacent vegetated areas. | Medium | Similar project comparison | \$100,000 |
| 10 | Outdoor exercise equipment | Complete renewal of existing outdoor exercise equipment. Focus on delivery of both static and moveable items that focus on strength, cardiovascular and flexibility to promote participation by all ages and abilities. | Medium | Similar project comparison | \$70,000 |
| 11 | Wetlands route distance markers | Provision of nondescript distance markers and accompanying signage throughout wetlands trail network to support use as key active recreation site (walking, jogging, running etc.). | Low | Similar project comparison | \$30,000 |
| 12 | Public amenity infrastructure | Allowance for the renewal and/or provision of public amenity features (such as signage seating, shade, water fountains, bicycle parking etc.) adjacent to new developments / key activity nodes such as the active recreation zone, pavilion, playspace and wetlands. Includes four defined public amenity sites and additional infrastructure dispersed along path network. | Medium (ongoing) | Public amenity site @ \$30,000 x 4 | \$120,000 |
| 13 | Trees and vegetation | Allowance for the ongoing establishment of additional trees and vegetation areas in line with existing planting schedule and in partnership with the Friends of Namatjira. | High (ongoing) | Similar project comparison | \$100,000 |
| 14 | Path and trail network | Provision of 1 km ² new paths and trails that connect key activity areas to existing network as depicted. To be developed in line with Council standard park pedestrian network treatment, assumed to be gravel in line with existing. | High | Path/trail @ \$150/m x 1,000 | \$150,000 |
| 15 | Security lighting | Improve security lighting throughout reserve including a focus on key activity nodes (public toilets, active recreation zone etc.) and path network lighting every ~30m. Lighting to be developed in accordance with Council's 'Public Lighting Policy'. | High (ongoing) | Similar project comparison | \$250,000 |
| 16 | Passive open space irrigation | Allowance for ongoing consideration of installing irrigation of passive open space areas as part of any future works to support provision of cool refuges. Includes cost of irrigation system and connections, assuming access to existing water catchment allotment remains. | Low (ongoing) | Irrigation @ \$50,000/HA x 2 | \$100,000 |
| n/a | Power supply upgrade | Upgrade to three-phase electrical power supply to the site to support enhanced facility development. | High | Similar project comparison | \$150,000 |
| n/a | Wetlands overhead wire network | Removal of overhead wire lines previously used to detract gulls. | Low | Similar project comparison | \$10,000 |
| Sub-total | | | | | \$8,050,000 |
| Contingency (15%) | | | | | \$1,207,500 |
| TOTAL | | | | | \$9,257,500 |

delivery implications.

field of play development.

population growth

The Kingston population forecast to grow to 198,340 by 2041 - an increase of 19.5%. The area around Namatjira Park specifically is expected to reach 32,737 by 2041, an increase of 3,375 people. The Clayton South population is to increase by 20.7% alone.

Importantly, there will be an additional 1,100+ people in the 'active age range' of 5-34 years (nearly 13,000 in total) in the broader precinct area looking to utilise Namatjira Park as a location to participate in sport and active recreation activities, driven by the strong growth in Clayton South.

With the increased population expected in the area surrounding Namatjira Park comes increased demand placed on open space and sport and recreation assets.

Council and state sporting association planning documents also state that there is an existing need for additional ovals (AFL/cricket) and soccer fields in Kingston, which will be exacerbated into the future.

maximising use

Kingston's Planning Scheme and Sport and Recreation Strategy pay particular attention to encouraging the development of 'multi-use' open space and recreational facilities to maximise flexibility in facility use and to assist in reducing development and operational costs of facilities.

It is Council's preference to prioritise development that supports increased utilisation of existing assets, rather than look to develop new facilities and additional locations. Given Namatjira Park is already a defined sporting reserve in the North, it makes practical sense to look to maximise the use of this space before developing elsewhere.

increasing club membership

The existing single field of play limits growth of existing clubs. Gridiron Victoria note that participation has nearly doubled over the last five years across Victoria to over 1,000. Significant growth has been seen in junior males and senior females and is expected to continue over the next five years.

The existing gridiron club currently have 120 playing members with membership having nearly doubled from 5 years ago, and the club expect this trend to continue.

The club have turned prospective players away in the most recent season, most notably interested female participants, and are 'stacking' more players into each team than they would have five years ago. The club plan to add a 2nd men's team and establish a women's team.

existing condition

The cricket pitch, in its current location and design, ensures the pitch is in the field of play and is a danger to the safety of the players.

The gridiron league was forced to investigate the playing surface several times in the last 5 years due to injuries – particular concerns with it not being level and has a 'hill'.

The existing field of play requires renewal in the medium to long term, and specifically requires a drainage upgrade as a matter of urgency. As such, it is a prime opportunity to consider broader development of the field of play area at the same time to ensure there is no 'regret spend' from poor future foresight.

proposal to enlarge the field of play

Consideration of the existing form and function of the site must factor in the expressed future demand for facilities outlined above.

The proposal to develop the field of play from a standard oval that can only support a single rectangle field running over the top of a cricket turf table to an enlarged area capable of supporting two rectangle fields off-set either side of a turf wicket table is a defined effort to future proof the site for generations to come.

This will increase the field of play area from an existing 18,500m² to 21,500m². This is equal to a 16% increase in m² of grassed area.

This is undertaken in response to the expected population growth, recent increases in club membership, and poor utilisation of existing facilities due to condition and practicality.

It is believed that while this will support growth of the existing gridiron club, there is a unique opportunity to incorporate the addition of a new winter season tenant at the site, such as football (soccer).

Given the expressed demand is not current, but expected to impact Council in the future, the field of play development is noted as a low priority item to be implemented as and when demand outstrips supply.

carparking.

Investigations undertaken found that if two sporting fields were to be developed there would be a specified lack of 50 carparks at peak usage times (i.e. two games played concurrently).

The master plan identifies a site for future carpark development should the field of play development occur, and demand become apparent. In the interim, there is the option to retain this area as a grassed informal overflow parking area for any large events.

The existing central carpark does still require a level of renewal and in particular would benefit from the development of a new exit point to create a one-way traffic flow.

sportsground lighting.

The existing sportsground lighting is poor. The master plan recommends development of floodlights to training standard (100 lux) but constructed with capacity to upgrade to playing standard (200 lux).

A lighting plan has been developed (Appendix 12) that shows that a 4 x 12 floodlight system, with 30m high poles, can be implemented. The lighting system performance meets the minimum lighting criteria of AS2560.2.3 Lighting for Football and the design is compliant with AS4282:2019 Obtrusive Light, ensuring limited impact on residential amenity.

However, timing will be a key consideration in the implementation of sportsground lighting. Given the recommendation for an impending field of play development, it is recommended that any sportsground lighting upgrade be delivered in a layout that supports the provision of two rectangle fields, even if only to be utilised for the existing single rectangle field in the interim. This is again an effort to ensure there is no future 'regret spend',

sports pavilion.

The existing sports pavilion is referred to as 'one of the worst pavilions in Kingston' and is noticeably reaching end of useful life. It does not meet contemporary sporting standards.

Gridiron Victoria note that the existing gridiron club are one of the most active clubs in recruiting and development but have been limited in their ability to host games and to enter a Women's team due to substandard facilities not meeting guidelines.

They have received a high level of interest over the past 3 years for a women's team, but unfortunately the feedback has been consistent in highlighting the pavilion facilities are not acceptable nor an inviting environment suitable for women in sport.

In any master plan development option, a complete redevelopment of the pavilion is recommended. Its existing location does not provide sun and prevailing wind protection and thus redevelopment is a prime opportunity to consider relocation to the opposite side of the field of play.

ecological impacts.

The proposed masterplan necessitates the removal of 10-12 trees (10 confirmed).

An ecological assessment was undertaken which identified that vegetation affected consists of scattered planted Australian native trees that provide food resources to a range of native fauna, particularly birds and insects. However, they represent a small proportion (3%) of the existing trees, so any impact of removal is minor. Notwithstanding this, the removal of trees is seen as a last resort and it is Council policy to offset any tree loss on a 3:1 ratio, with increased planting beyond this ratio recommended in the plan.

In recognition that the new planting will likely be saplings/nubile trees, proactive planting is recommended as a high priority item for implementation ahead of future tree loss. This will enable the establishment and growth of new trees prior to the loss of established trees, minimising the visual and ecological impact.

The sports field lighting plan also shows that design and construction to relevant Australian Standards can be achieved, limiting light spill and any effects on flora and fauna. An ecological assessment also notes that any impact on fauna is likely to be minor and that none of the fauna involved are likely to include any listed threatened species.

Design considerations such as optical covers around diodes that reduce the scatter of light and focus the light beam in specific directions and ensuring lights are aimed down and into the centre of the oval will be utilised to minimize the lights' ability to reflect into the sky and thus the resulting light pollution.

All other lighting, such as path network lighting and building security lighting will be implemented in line with Council's Public Lighting Policy, focusing on environmentally and ecologically sensitive designs.



appendices

additional info.

DRAFT

appendix 1 - literature review.

national.

Sport 2030 - National Sport Plan

The Australian Government has a clear and bold vision for sport in Australia — to ensure we are the world's most active and healthy nation, known for our integrity and sporting success.

Sport 2030 is Australia's first national sports plan and has four key priority areas which will, when fully implemented, create a platform for sporting success through to 2030 and beyond.

Key principles:

The priorities are:

- Build a more active Australia;

More Australians, more active, more often;

- Achieving sporting excellence;

National pride, inspiration and motivation through international sporting success;

- Safeguarding the integrity of sport;

A fair, safe and strong sport sector free from corruption; and

- Strengthening Australia's sport industry;

A thriving Australian sport and recreation industry.

Key takeaways:

- An important change made is how they define sport for the purposes of Government policy and programs.
- The definition of 'sport' will be broadened to include physical activity, as well as organised and high-performance sport, reflecting ever increasing opportunities for Australians to engage in physical activity throughout life.
- When the Australian Government talks about 'sport', it will now talk about a broad range of physical activities including informal, unstructured activity such as walking, riding, swimming and running as well as traditional, structured sport.
- Where once people planned their weeks around sporting and physical activity, today many Australians now look for sporting and physical activities that work around their week.
- Traditional sports now compete with less organised physical activities such as

yoga, bushwalking, cycling, gym and parkruns for the physical activity demands of Australians.

- There has been an exponential growth in the use of digital technology within Australia, while the demography of Australia continues to change.
- We are becoming older, more ethnically diverse and time-poor. By 2036, one third more Australians will be aged over 65 than in 2012.
- Currently only 25 per cent of Australians over 65 meet the physical activity guidelines, providing a future challenge but also an opportunity.
- Inactivity is the fourth largest cause of chronic conditions in Australia and the nation is now one of the most obese on earth.
- Fifty-six percent of Australian adults — or more than 10 million people — are living sedentary or low-activity lifestyles.
- Only 19 per cent of Australians aged 5 to 17 are meeting the recommended guidelines of 60 minutes of moderate-to-vigorous physical activity each day, with the same age group spending on average two to three hours on screens.



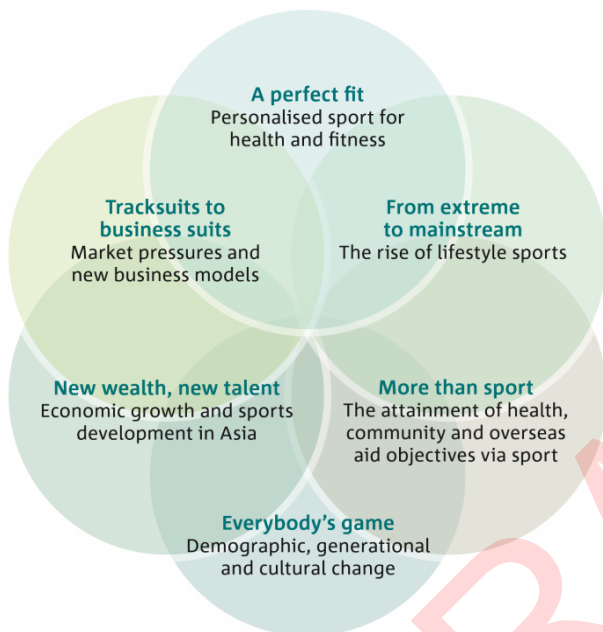
Future of Australian Sport

The Future of Australian Sport report states that sports played in Australia, as well as how and why we play them, are changing over time.

Key principles:

The report identifies six megatrends that may redefine the sport sector over the next 30 years.

A megatrend represents an important pattern of social, economic or environmental change.



Key takeaways:

- As we become increasingly time poor, sport is being tailored to meet personal needs. This is largely being influenced by the increased use of online tools and applications to individualise sport. Health, rather than competition, is becoming a major driver for participation in sport
- Lifestyle, adventure and alternative sports are becoming popular with Australians particularly young Australians, with participation being driven by widespread exposure through digital media.
- There is an increased focus on the broader benefits derived from participation in sport, including physical and mental benefits, crime prevention and social inclusion.
- The types of sports Aussies are likely to play will shift as demographics, including cultural landscapes, change. There are indicators Australians are embracing sport in older age resulting in the need for sport to cater for senior citizens to participate in sport.

- Market forces are likely to put pressure on sport in the future drawing athletes away from sports which have lower salary bases. In addition, the administration of sport may transition from community-based organisations to corporate structures as they face increased accountability.



Community Cricket Facility Guidelines

Cricket Australia's Community Cricket Facility Guidelines aim to provide a consolidated resource of community cricket facility planning, development, management and maintenance information for use by community, government and national cricket industry partners and stakeholders.

The Guidelines are intended to support stakeholders to appropriately scope, plan, design, budget, deliver improved cricket facility projects.

Facility hierarchy

The Cricket Facility Hierarchy model defines community cricket facilities, their purpose and core cricket uses for Premier/Regional and Club level cricket.

Within each level of the hierarchy, facility and amenity provision and the capacity to reach or exceed the desired levels will be influenced by the type and levels of play, as well as by local competition or Association requirements and rules.

Local Government planning schemes, policies, risk management, occupancy agreements and associated site influences (e.g. ground sizes, neighbouring properties) will all play a role in being able to achieve the recommended facility and amenity levels.

| LEVEL | FACILITY PURPOSE | CORE CRICKET USE | OTHER COMPATIBLE USES |
|------------------------------|---|---|---|
| Premier/ regional | Integrates the community cricket pathway and provides connection between Foundation and Talent pathways. Facilities service home clubs, as well as providing for the broader cricket catchment. | Home and away fixtures for Premier Cricket in each state, regional training venue for pathway squads and programs, event/carnival venue for state and regional programs and marquee venue for local competitions (e.g. finals). | Shared training venue for local community (outdoor turf pitches and possible indoor training pitches), under age Association competition venue and location for school holiday camps. Likely to be shared with a winter tenant. |
| Club (home) | Provide a mix of recreational and competitive cricket opportunities within a community | A club's home ground to conduct home and away fixtures for local, Association, metropolitan and country cricket in each | Training facilities and social amenities are provided to promote social activity and community |

| | | | |
|-----------------------------|--|--|---|
| | club environment for local communities – clubs and venues connect with their associated turf or synthetic competition and pathway structure (for all age groups). | state, local club training, facilitating school to club connectivity and providing opportunities for in2CRICKET and modified programs such as T20Blast. | use. Shared venue with a winter tenant. Under age Association competition venue or finals venue at key sites within local Associations. |
| Club (satellite) | Provides opportunities for club and school competition and social/recreational cricket. Venues often used as secondary grounds for junior and lower senior grades. | Satellite or overflow venues away from a club's main home ground that support junior, school and senior club cricket competition (primarily match day use) and formal and informal social cricket use. | Venues typically include parks, recreation reserves and schools and often shared venues for broader community use and access. |

The below table provides a guide as to a desired level of provision (number of pitches and surface types) for differing levels of competition and club size.

| HIERARCHY LEVEL | TURF TABLE | TRAINING NETS | |
|----------------------------------|------------|---------------|------|
| | | Synthetic | Turf |
| Premier / Regional (Turf) | 8-10 | 2-4 | 8-12 |
| Club Home (Turf) | 5-6 | 3-4 | 4-6 |
| Club Home (Synthetic) | n/a | 3-6 | 0 |
| Club Satellite | n/a | 2 | 0 |



state.

Active Victoria (2017)

Active Victoria, is the State government's strategic framework for sport and recreation in Victoria.

Key principles:

The strategy is based on six strategic directions:

- Meeting demand

Increase the capacity of sport and active recreation infrastructure and create flexible and innovative participation options.

- Broader and more inclusive participation

Build inclusion into the system, provide affordable participation options for all with a focus on under-represented communities.

- Additional focus on active recreation

Create a model that supports non-organised and unstructured physical activity, and invest in infrastructure that enables active recreation.

- Build system resilience and capacity

Support volunteers, encourage good governance and diverse leadership, and develop a strong evidence base.

- Connect investment in events, high performance and infrastructure

Invest in state and regional facilities that underpin Victoria's event calendar and develop pathways to excellence.

- Work together for shared outcomes

Develop agreed priorities for collaborative action and ensure complementary investment to create collective impact.

Key takeaways:

- Increasing the level of participation of Victorians in sport and active recreation will boost demand for infrastructure, programs and opportunities.
- Our population will also grow, almost doubling from 5.5 million in 2011 to 10.1 million by 2051, increasing this demand further.
- The mix of sport and active recreation activities enjoyed by Victorians is changing. Time and lifestyle pressures mean Victorians are looking for more flexible options that better fit their circumstances.
- Participation in sport falls significantly in the late teenage and young adult years and there is also a significant drop in total

sport and recreation activity as people age.

- Aboriginal Victorians, people with a disability, people with poor health, recently arrived migrants, and those with little or no English all have significantly lower levels of participation.
- People with low incomes or living in areas of relative socio-economic disadvantage are also much less likely to engage in any sport or active recreation activity.
- More Victorians participate in active recreation than in organised sport.
- Adult Victorians spend 736 million hours a year on physical recreation, exercise and sport. Eighty per cent of these hours are spent in active recreation and 20 per cent in sport.
- The three most common activities – walking, fitness and gym, and jogging or running – make up 44 per cent of all recorded sport and recreation activity.
- This means that increasing participation in active recreation offers the best opportunity to improve Victorian's health and wellbeing.



Plan Melbourne (2017)

Plan Melbourne is the Victorian Government's Metropolitan Planning Strategy and outlines a number of key challenges that we face including managing population growth, growing the economy, creating affordable and accessible housing, improving transport, responding to climate change, and connecting communities.

Key principles:

The strategy notes the following nine key principles:

- A distinctive Melbourne
- A globally connected and competitive city
- A city of centres linked to regional Victoria
- Environmental resilience and sustainability
- Living locally — 20-minute neighbourhoods
- Social and economic participation
- Strong and healthy communities
- Infrastructure investment that supports balanced city growth
- Leadership and partnership

The strategy notes the following seven key outcomes that it aims to achieve, with a number of directions under each outcome:

- Melbourne is a productive city that attracts investment, supports innovation and creates jobs
- Melbourne provides housing choice in locations close to jobs and services
- Melbourne has an integrated transport system that connects people to jobs and services and goods to market
- Melbourne is a distinctive and liveable city with quality design and amenity
- Melbourne is a city of inclusive, vibrant and healthy neighbourhoods
- Melbourne is a sustainable and resilient city
- Regional Victoria is productive, sustainable and supports jobs and economic growth

Key takeaways:

Of particular note for the Master Plan is the Strategy's directions to:

- 'Strengthen protection and management of green wedge land'
- 'Develop a network of accessible, high-quality, local open spaces'
- 'Support a cooler Melbourne by greening urban areas, buildings, transport corridors

and open spaces to create an urban forest'

- And an overarching commitment to responding to climate change through energy, water and waste performance.



Victorian Cricket Infrastructure Strategy (Cricket Victoria)

The Victorian Cricket Infrastructure Strategy provides an integrated and strategic approach to the future provision of, and investment in cricket facilities across both Metropolitan Melbourne and Country Victoria for the next 10 years.

Key principles:

The strategy notes Victorian Cricket's 'Big 6' participation trends as:

- Increased demand for shorter/modified versions of the game
- Increasing female participation
- Changing junior competition formats
- Increasing demand for cricket 12 months of the year
- Increased levels of casual or social cricket
- More flexible programming

Additionally, it states that the South East Bayside region has the following 'Big 6' infrastructure priorities:

- Increase support and education in playing field surface management
- Increased access to underutilised open space (e.g. schools)
- Increase provision of inclusive facilities with a focus on female friendly design
- Improve pavilion and change room facilities and supporting amenities
- Assess the suitability of the current balance of synthetic and turf pitch provision
- Improve condition of synthetic pitches and practice facilities

Key takeaways:

- The South East Bayside Region is one of only four Regions across the State to record participation increases in all player categories in past three seasons.
- South East Bayside recorded the second most participants per Region across the State, with the majority of the Region's 2016/17 participation occurred within Kingston (2,162).
- Kingston is the 6th ranked LGA overall with 2,791 2016/17 total club membership
- Like several other landlocked inner Metropolitan Regions the South East Bayside area is faced with the challenge of accommodating increased participation levels and subsequent demand for additional facilities with limited access to green space for additional facility development.

- To compound this issue is the Region's higher than average ground to player ratio of 1:46 (Metropolitan average 1: 43), lower than average synthetic pitch to population ratio of 1: 6,010 (Metropolitan average 1: 5,464) above average player penetration rate of 1.51% of the population, and 10.5% higher than average turf pitch provision level.
- The region also has a higher than average turf pitch provision rate (10% above Metropolitan average). 35% of this provision falls within the City of Kingston.
- Cricket Victoria is working with existing metropolitan cricket associations to deliver a more strategic approach regarding pitch type provision. Ensuring current and future turf/synthetic pitch playing field provision is strategic, financially sustainable, balances player pathway and development while at the same time increasing grassroots participation opportunities is a key focus area over the next 10 years.
- With ground access and availability continuing to be challenging (particularly in inner urban metropolitan areas of Melbourne), it is important Cricket Victoria continue to work with local association/competition providers, clubs and local government to ensure cricket grounds and supporting infrastructure are being used to optimal capacity, and furthermore promote club and overall sport development and growth.
- Noting the limited flexibility and multi-use opportunities associated with turf pitch only grounds, CV note that they will prioritise the sustainable provision of turf wickets at venues that support player pathway and development initiatives, and assess the suitability and current balance of synthetic and turf cricket pitches in-line with future demand, competition structure and financial capacity of tenant club/facility owners and in consultation with key stakeholders.



Turf Pitch Benchmarking Study (Monash CC)

The consultant team has previously been involved in a benchmarking study across several councils to compare various components for the provision of cricket turf pitches/wickets against the City of Monash's existing practices, including:

- Fees/ charges and methodology applied for facilitating the use of turf wickets by clubs (e.g. seniors/juniors, per team/flat fee)
- Curator costs and responsibilities (e.g. club/ council/ third party, any additional charges)
- Maintenance costs and practices (e.g. pre/ during/ post season)
- Watering costs and regimes (e.g. council or club responsibilities for watering turf wickets)
- Defining council/ club responsibilities and practices (e.g. wicket cover responsibility, use of EziCovers or other equipment, centre wickets vs. practice wickets, etc.)

The key findings of this study, with respect to the City of Kingston, found that:

- The majority of Councils apply fees on a per season basis, while only Kingston and Monash apply fees on a per team basis.
- The majority of Councils do not provide any subsidies, with only Kingston and Boroondara subsidising junior use like Monash, and Kingston subsidising masters/veterans use like Monash.
- Kingston is the only council to apply three or more subsidies including juniors, masters/veterans and CALD, for which a standard subsidised fee is applied for each, while also providing a 5% 'pay on time' discount.
- The average number of pitches provided per turf table is lower in Kingston when compared to the average across all Councils (4-4.5 compared to 5-6).
- The average number of hours of weekly use of a turf table is significantly lower for 'Premier' level cricket in Kingston (5 compared to 9), and similar for sub-district (10 compared to 9) and local level cricket (10 compared to 12).
- some councils specifically noted that there may be increased service levels for higher levels of cricket but there is a relatively consistent renovation program across all councils for all levels of cricket that generally includes scarifying, levelling, seeding and fertilising.
- council is almost unanimously responsible for turf table and practice wicket

preparation across respondents. All councils allow clubs to undertake works if they like, but it is mainly a Council function. Kingston is the only council where clubs undertake all works.

- Cost of maintenance is higher/lower in line with grade played across each council
- Annual costs vary significantly across each council (Boroondara lowest at all levels)



Melbourne South Football Facilities Strategy (AFL Victoria)

Key principles:

The Strategy identifies 3 key priorities for the Region to guide future facility provision:

- Priority 1 - existing facilities

Objective: Increase the quality and functionality and maximise the use and carrying capacity of existing facilities.

- Priority 2 – new facilities and talent pathways

Objective: Plan and develop new facilities in key growth areas across the Region, considering regional needs, program, competitions and talent pathways at key locations.

- Priority 3 – enhance relationships

Objective: Continue to enhance the relationship between football, government and other key stakeholders in the planning and provision of facilities and programs.

Key takeaways:

- Across the Melbourne South region, there were 37,470 registered football participants in Season 2017. Kingston had 16% of these participants.
- The highest participation rate is in the 5-9 age cohort with 11,369 participants or 30% of total registrations.
- For the 10-14 age cohort, Kingston (21.38%) had higher penetration rates than the metropolitan region average of 10.65%.
- In the 15-19 age cohort Kingston (10.72%) had higher penetration rates than the Victorian metropolitan average of 6.9%.
- There were 5,768 registered female football participants across the Melbourne South region in Season 2017. This was an increase of 103% from Season 2016 with an additional 2,927 females participating in football for Season 2017.
- The most significant growth was in the Senior age cohort (age 20-39) with 236% growth (+1,028 participants).
- The majority of female football participants in the Melbourne South region reside in Kingston with 16.2% or 932 participants.
- By 2026, the football market across the Melbourne South region is projected to be 42,535 participants. This is a 14% increase or +5,065 participants.
- Participation growth is centred in Casey, Kingston, Port Phillip, Glen Eira and

Stonnington. Kingston is expected to see 483 additional participants alone.

- Increases in participation based on current penetration rates would result in the need for an additional 3 grounds in Kingston.



Local.

There are a number of Kingston City Council strategic plans and policies that will influence the provision and management of sporting reserves within the municipality. For the purposes of this report, these have been classified as either 'primary' or 'supporting'.

Primary influences generally provide broader strategic direction intended to influence the organisations' business practices as a whole (i.e. Council Plan), have a strong link to strategic planning for sport, recreation and open space (i.e. Public Health and Wellbeing Plan) or note site specific actions related to the Master Plans (i.e. Public Toilet Strategy).

Supporting influences generally provide policy and direction on technical aspects of the organisation's operations that may support ancillary facilities and services (i.e. Cycling and Walking Plan).

An analysis of each of the primary influences including key principles and master plan implications is outlined in the next section.

| | |
|------------|--|
| Primary | <u>Council Plan 2017-21</u> |
| | <u>Municipal Strategic Statement</u> |
| | <u>Public Health and Wellbeing Plan 2017-21</u> |
| | <u>Sport and Recreation Strategy 2018</u> |
| | <u>Open Space Strategy 2012</u> |
| | <u>Active Youth Spaces Strategy 2011</u> |
| | <u>Public Toilet Strategy 2016</u> |
| | <u>Playground Strategy 2010</u> |
| | <u>Gambling Policy</u> |
| Supporting | <u>Positive Ageing Plan 2014-19</u> |
| | <u>Aboriginal Policy and Action Plan 2014-19</u> |
| | <u>Disability Action Plan 2015-19</u> |
| | <u>Family and Children's Strategy 2013-17</u> |
| | <u>Integrated Water Cycle Strategy 2012</u> |
| | <u>Multicultural Action Plan 2018-21</u> |
| | <u>Prosperous Kingston 2016</u> |
| | <u>Creative Kingston 2018-22</u> |
| | <u>Cycling and Walking Plan 2009</u> |
| | <u>Urban Cooling Strategy</u> |

Council Plan (2017-21)

The Council Plan 2017-2021 is a vital roadmap to set our course for the future, provide accountability to the community, direct the organisation and help guide decision making.

Key principles:

The Council Plan features five goals:

- Our well-planned, liveable city supported by infrastructure to meet future needs
- Our sustainable green environment with accessible open spaces
- Our connected, inclusive, healthy and learning community
- Our free-moving, safe, prosperous and dynamic city
- Our well-governed and responsive organisation

Master Plan implications:

The Council Plan notes the following with specific regard to sport and recreation as part of 'Goal 2 – Our sustainable green environment with accessible open spaces':

- 2.5 Provide for a variety of sport and recreation opportunities across Kingston through the Sport and Leisure Strategy
- 2.5.1 Determine and respond to the current and future needs of sports clubs for facilities and open space planning
- 2.5.2 Improve passive open space and promotion of sport and recreation opportunities
- 2.5.3 Develop and implement park and reserve improvement plans in conjunction with the community

Similarly, the Council Plan highlights a number of other key directions that influence how facilities and reserves are planned for:

- 1.1 Intergenerational land use planning for a sustainable community
- 1.2 Effectively influence the urban and architectural design of the City
- 1.3 Infrastructure and property investment for a functional city
- 2.2 Greening Kingston and place making
- 2.4 Review and implement the Open Space Strategy to ensure high quality and increased capacity of the network
- 3.2 Provide equitable access to services and facilities for all community members, irrespective of background and ability
- 3.4 Promote an active, healthy and involved community life
- 4.4 Integrated, accessible transport and a free-moving city
- 4.5 Keeping our community safe and protected



Municipal Strategic Statement

The development of the Kingston Planning Scheme has been strongly guided by Council's understanding of the critical land use issues which are likely to challenge Kingston's future growth and development into the new millennium, including: Future housing need; Residential amenity and neighbourhood character; Retailing changes; Industrial revitalisation; Foreshore enhancement; Protecting and enhancing ecological value; Sustainable management of the Green Wedge; and Managing transport.

Key principles

A key component of the Kingston Planning Scheme is a focus on open space with the following objectives identified:

- To provide fair and equitable access to a range of high quality open space areas located within Kingston's urban and non urban environments which aim to optimise community enjoyment of open space.
- To promote a diverse range of social and recreational opportunities which provide for the changing leisure needs of the municipality's current and future populations.
- To protect significant natural landscapes and open space areas with an identified environmental significance from degradation as a result of community recreational demands
- To promote the creation of a major regional north-south spine of open space within a predominantly non urban context.
- To require appropriate and equitable public open space contributions at the time of subdivision.

Master Plan implications

The following strategies are identified to achieve 'Objective 2 - To promote a diverse range of social and recreational opportunities which provide for the changing leisure needs of the municipality's current and future population':

- Ensure that the location and development of existing and proposed open space:
- Is appropriate to the current and projected recreational needs of the residential catchment it is intended to serve.
- Fulfils an identified user need.

- Is able to cater for a variety of lifecycle needs.
- Enhances the existing mix of regional, district, local and neighbourhood level recreational facilities.
- Has regard to the City of Kingston Open Space Strategy 2012.
- Encourage the development of 'multi-use' open space facilities to maximise flexibility in facility use and to assist in reducing development and operational costs of facilities.
- Maximise opportunities for co-location of appropriate community and cultural facilities with open space.
- Ensure that priority is given to open space acquisitions and location of new recreational facilities in areas of under-provision.
- Support the significant regional tourism/recreational role of golf courses in Kingston.

Kingston

PLANNING SCHEME



Public Health and Wellbeing Plan (2017-21)

Kingston's Public Health and Wellbeing Plan (PHWP) 2017–2021 provides a strategic direction for Council's work to improve the health and wellbeing of the community.

It is an overarching document that addresses key health and wellbeing issues by identifying priorities, objectives and performance measures.

Key principles

The direction of the PHWP is set by four key priorities for promoting and protecting the health and wellbeing of the Kingston community:

- A healthy and well community
- A safe and secure community
- A connected community that participates
- A liveable community

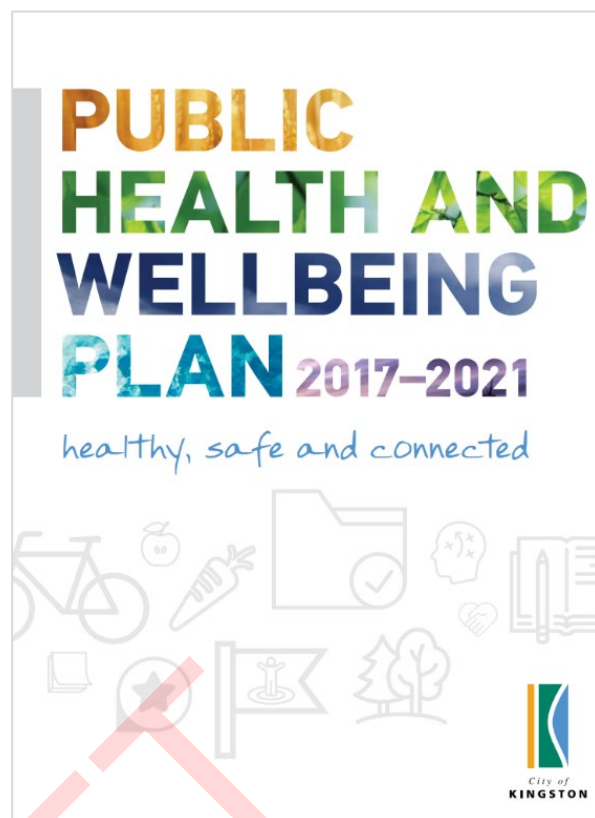
Master Plan implications

The PHWP identifies a number of key objectives that influence how sport and recreation facilities and reserves are planned including:

- 1.1. Increase participation in physical activity
- 2.1. Improve community safety
- 3.1. Increase participation in community activities and volunteering; and reduce social isolation
- 3.2. Improve social cohesion
- 3.3. Ensure facilities, services and open spaces are accessible and equitably provided

The PHWP also highlights the following key statistics which highlight the need for effective and efficient planning for sport and recreation facilities and reserves:

- Less than one-third of the Kingston population meets the recommended amount of physical activity each week
- Kingston residents spend on average 4:37 hours sitting at work on a usual day
- Just over half (57%) of our population is overweight or obese
- 15% of our population sometimes feel isolated
- Under one-third of our population volunteer regularly
- Only half of our population agree that they play an active role in their community



Open Space Strategy (2012)

This study reviews and updates Kingston's Open Space Strategy 2005.

Its purpose is to guide local policy and decision making regarding open space provision, acquisition and management.

It is a guiding document for future provision of accessible, safe and well utilised open spaces in Kingston which details principles and priority actions within local open space planning areas that can assist Council to provide residents and visitors with adequate access to a variety of local open space venues and opportunities.

Key principles

This plan does not classify open space as "active" or "passive". Rather, it classifies open space according to purpose, as well as the sphere of influence and origins of users (catchment) and attributes that affect users' experience of place.

This typology provides the tools to assess distribution, diversity, and quality of open space in relation to its value (i.e. the reasons why open space is important) as well as providing a basis for decision-making and management.

Each open space in Kingston has been classified using the following three-tiered classification:

- A classification based on primary function, taking into account the primary purpose of an open space, important values, or the use of the open space within the network, i.e. what the park is mainly used for
- A classification based on catchment – the sphere of influence and origins of users - i.e. where people come from to use the park. This also has reference to how long people are likely to stay
- A landscape setting classification, considering the physical condition and characteristics of the area that influence a user's experience, i.e. what the park is like.

By ensuring a range of types of open space across the City and within each local area/neighbourhood we can ensure equity and diversity while incorporating the ability to continue to meet local needs when demographics change.

Master Plan implications

The Open Space Strategy identifies the following characteristics of the site:

| | | |
|-----------|----------------|---------------------------|
| Location | Namatjira Park | Namatjira Retarding Basin |
| Catchment | District | Neighbourhood |
| Function | SFR/Play | Drain |
| Setting | Open parkland | Open grassy area |
| Size (HA) | 12.1 | 4.2 |

The above classifications mean that Namatjira Park is generally considered to serve more than the local area and provides this area with a good diversity of opportunities including SFR, sport, play and environmental experiences.

Key recommendations contained within the Open Space Strategy relating to the site include:

- Provide an additional free access court at Namatjira Park to assist in the provision of tennis participation opportunities in the Clarinda/Clayton South area.
- Reinforce Namatjira Skate Park as a District standard active youth precinct. Develop and implement a detailed plan to guide future development, which supports beginners, intermediate and advanced skill levels.
- Improve access to Namatjira Reserve for residents west of Frank Avenue.
- Implement the East/West Cycleway shared trail link (Spring Road to Westall Station - on and off road facilities, via Namatjira and Keeley Parks).
- Provide adequate dog off-leash areas, fenced off from playgrounds and where parks are small, fenced off from roads and other perils.



Sport and Recreation Strategy (2018)

The Kingston Sport and Recreation Strategy provides the guiding framework for the future planning, provision, development and management of sporting and recreation opportunities throughout Kingston.

Key principles

The following key principles will inform the future planning, design and management of sport and recreation facilities:

- Increased participation;
Council will support sport and recreation projects that will facilitate increased participation by Kingston residents in sport and recreation activities and improve their health.
- Diversity;
Council will facilitate the provision of a range of sporting and recreation facilities and services across Kingston to firstly, ensure that the community has access to a variety of different sporting and recreation opportunities, and secondly, to cater for different levels of abilities and needs.
- Multiuse and shared use;
Council will advocate strongly for and optimise the provision of sport and recreation facilities that are multiuse and can support shared use, where appropriate.
- Accessible and inclusive;
Sport and recreation facilities will be accessible to and encourage people of all ages, genders, abilities and backgrounds.
- Adaptable;
Sport and recreation facilities will be designed and managed to meet accepted sport and recreation facility guidelines and standards whilst also being flexible to meet future community needs.
- Partnerships;
Council will adopt a collaborative and partnership approach with community groups, schools, all levels of government, government agencies, peak sporting organisations and the private sector for the planning, provision and management of sport and recreation facilities.
- Financially responsible;
Financial viability and cost effectiveness of sport and recreation facilities will be considered in all aspects of their planning, development and management.

- Strategic justification;
Strategically supported by local or regional plans and/or state sporting association/peak body facility development plans to meet identified community needs and gaps.

Master Plan implications

From a City-wide and planning region perspective, the strategy shows that:

- There is a good diversity of sporting options available within Kingston.
- AFL ovals, cricket ovals, netball courts, tennis courts and soccer pitches are the most prevalent sporting facilities available (> 20 ovals, courts or fields).
- The sport with the largest number of facilities is tennis, with 81 playable courts and 2 courts currently unplayable (Westall Social Tennis Club). There are also a number of other club-based courts requiring significant investment.
- The following sports with multiple facilities generally have an even distribution of facilities throughout each of the planning regions: AFL, Athletics, Baseball, Cricket, Lawn bowls, Soccer, and Tennis.
- The following sports with multiple facilities are not evenly distributed throughout each of the planning regions:
 - Basketball - there are no basketball courts available in the North.
 - Gymnastics - there are no facilities available in the North.
 - Netball - there are 24 courts available in the North, no courts Centrally, and six courts in the South.
- The ratio of turf cricket wickets to synthetic wickets is high, with 40% of all centre cricket wickets being turf.
- There is capacity for Council to consider further multi-use of sporting fields.
- Intensive use of Kingston Heath Soccer Complex by National Premier League clubs has resulted in severely restricted access by community soccer clubs, validating further need for additional soccer pitches to be established in the Northern and Central regions of Kingston.
- Shortage of indoor courts in North region.
- No provision of netball courts in the Central West area.
- Projected growth area along Nepean Highway requires more: AFL ovals, Cricket ovals, and Soccer fields.
- Current number of tennis courts is adequate to absorb any future demand for tennis.

- There is only small growth in lawn bowling, across the 8 clubs within Kingston, expected to 2036. The Strategy also notes that the current 16 greens should be capable of absorbing any increased demand.
- The Strategy does not provide a view or direction regarding indoor bowling greens, of which there are none within the City. The Strategy's key recommendation relating to lawn bowling is that Council "work with all bowling clubs in Kingston to ensure a sustainable framework of facilities are available to meet the needs of a growing Kingston population".
- Whilst Council has implemented measures to improve sporting facilities, future investment should be directed towards facilities that enable higher levels of participation e.g. floodlighting improvements, sporting surface upgrades, and provision of female friendly pavilion facilities.
- Investigate opportunities to embellish parks and sporting reserve with active recreation facilities that encourage low cost/free participation

Site Specific recommendations that will impact on the Master Plan include:

- Complete renewal of sports pavilion to meet sporting and club needs was noted as a high priority
- Existing oval lighting was noted as being non-compliant



Active Youth Spaces Strategy

The Active Youth Spaces Strategy provides a dependable and robust framework for the provision of Active Youth Spaces in Kingston, which complements existing KCC strategic documents, identifies site requirements and potential locations for such facilities, and defines a program of implementation including cost estimates and project timeframes.

Key principles

Active Youth Space developments within the City of Kingston will be guided by the following 10 strategic provision principles.

- The City recognises the health and wellbeing benefits of physical activity participation and will therefore provide and/or facilitate access to a diverse range of leisure opportunities based on identified community needs.
- Facility provision will reflect a hierarchy of venues which acknowledges that different standards, scale and scope of infrastructure is appropriate depending on the primary target audience and catchments being serviced.
- Council facility provision will concentrate on quality, rather than quantity, of sites in accordance with the defined hierarchy of provision.
- Skate and BMX facilities provide an anchor for the development of broader (family friendly) active youth spaces, including places for social interaction and casual physical activity participation. Well designed and managed active youth spaces provide something for young people to do and can reduce the potential for crime in local areas.
- Appropriate infrastructure and amenities will be provided to support broad community use of the active youth spaces.
- The City acknowledges that Active Youth Spaces are utilised by a broad age range, therefore a mix of skill levels and development opportunities will be considered in individual site design.
- The City values and will encourage the ongoing involvement of young people in the design, development and management of Active Youth Spaces.
- It is acknowledged that activities undertaken at skate and BMX venues are inherently risky, however Council will minimise unnecessary risk through

appropriate design, signage and risk minimisation initiatives.

- Council recognises the significant capital investment that has occurred to provide (and will be required to enhance existing) skate and BMX facilities across the City and will therefore establish dedicated Asset Management Plans for these asset categories in order to effectively provide for facility maintenance, lifecycle costs and overall asset management.
- Council will actively consider ways in which to enhance participation in skate/BMX activities in order to maximise the use of existing facilities.

Master Plan implications

The following site strategies were noted:

- Reinforce the venue as a District standard active youth precinct by improving the quality, standard and scope of facilities and support infrastructure available
- Address immediate maintenance issues e.g. remove litter and weeds, uplift/prune trees.
- Develop a detailed concept design plan to guide future development, including placement and scope of support infrastructure as well as enhanced facilities to accommodate beginners and intermediate skill levels, including additional facilities to support BMX use (\$10,000 cost).
- Implement the approved concept plan (\$120,000).



Skate Park Audit

Prepared by SkateCon in 2019, the Skate Park Audit assesses the current condition and function of each skate park in Kingston.

Key principles

The report notes that:

- Skateparks have become an important and increasingly used sporting infrastructure and valuable community asset and is quickly outpacing more traditional sports facilities such as ovals and basketball courts.
- Skatepark design has evolved rapidly over the last 10 years with many facilities older than 12 years now being deemed obsolete and not best practice due to the introduction of youth activity spaces and regional skate facilities.
- With this constant evolution, many facilities are not used effectively as their design does not cater for new skate styles and trends or users simply find them boring and unchallenging and do not fully utilise the facility or worse, dismiss the facility altogether. Maintenance of these facilities is extremely important so that the skateable area is in excellent condition and they remain relevant to the users.
- Many facilities are not used due to their poor condition and poor functional design and as a result they appear derelict to the general public and become targets for vandalism and graffiti
- It is of the utmost importance that council implement strategies and review their facilities regularly to ensure the following;

- 1. A skate/BMX strategy is in place for the municipality and the facility.
- 2. Each facility has a specific maintenance strategy/plan
- 3. Constant review of each facility to ensure its design and function meet current trends
- 4. Regularly assess each facility to audit its condition
- 5. Repair damage to the skate surface as it occurs to minimise risk to users and the public.

Master Plan implications

The following site specific findings were noted:

- is a small local facility that looks to be approximately 15yrs old and in this time it appears very little maintenance has been carried out and due to this, it has deteriorated very badly.
- The location of this park within the reserve, with its BBQ and playground facilities make it a popular destination for families. It is unfortunate that the skate park should not be used due to the dangerous issues associate with it.
- Some of the safety issues at this park include some badly degraded construction joints, large holes, large cracks, all of which can stop small skateboard or scooter wheels, resulting in potentially serious accidents. The pool coping tiles have become very rough and chipped, making it very hard for users to utilise this bank. These tiles should be replaced with a low maintenance steel rail.

- rate this facility a 0%, a fail due to the above problems and requiring immediate action.
- Final comments:
 - This facility is in very poor condition with some urgent action to be taken ASAP.
 - The concrete surface is very poor with large cracks, holes and construction joints needing urgent repairs along with the coping tiles being replaced with steel rail.
 - The cost to repair this facility and make it safe again - \$20,000 - \$25,000 ex GST.



Gambling Policy

The purpose of the policy is to guide Council in its decision making to prevent and reduce the harm from gambling in the City of Kingston.

While this is a gambling policy, it has a key focus on EGMs because of the role appointed to Council via planning legislation and the entitlement for Council to make submissions to the VCGLR. It is anticipated however, that the benefits resulting from this policy will also have an effect on people who may be experiencing gambling harm from other forms of gambling.

Key principles

Council adopts the following position statements to prevent and reduce harm from gambling:

- Council will strongly advocate for and implement initiatives to reduce gambling harm in the Kingston community. It will support the advocacy of other local governments or organisations for reform to the regulation of gambling, a reduction in EGMs in Kingston and other gambling related issues. All advocacy positions will be detailed in Council's Gambling Action Plan.
- Council will complete a social and economic impact assessment for every EGM application made to the VCGLR. Council will oppose any applications where evidence indicates the net social and economic impact will be detrimental to the wellbeing of the Kingston community.
- Council will take a public health approach and work in collaboration with State Government, other local Councils and relevant organisations to reduce the negative impacts from gambling harm experienced by the Kingston community.
- Council will not accept financial contributions from gambling venues/operators and will not promote community contributions offered by local gambling venues/operators (grant programs, donations, sponsorships), unless there is significant community benefit demonstrated.
- Council will not provide community grants, funding, sponsorship, publicity or promotion for community groups/organisations that undertake or promote gambling, unless there is significant community benefit demonstrated.

- Council will not support new requests for gambling promotion or advertising on Council-owned or managed land, resources and facilities.
- Council will not support new agreements for Council owned or managed land or facilities to be provided to any clubs, community groups, organisations or associations who undertake gambling activities in Kingston or elsewhere, unless there is significant community benefit demonstrated.
- Council will not run any Council and community events, activities, programs and social outings in venues that have gaming machines, unless the venue offers a unique setting and there is no viable alternative.
- Council will raise community awareness about the facts of gambling and promote a range of non-gambling social activities in Kingston to encourage engaged, active and healthy lifestyle choices and reduce gambling harm.
- Council will actively promote support services available to assist people who are experiencing issues associated with gambling harm.
- Council will support research into the impacts of gambling and the development of effective harm minimisation strategies.

Master Plan implications

- While no site specific recommendations are included in the policy, any consideration of development of the existing Bowls Club premises (which includes EGMs) must be cognisant of Council's position



Gambling Policy

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1 Document Control

The electronic version of this document is the controlled version. Printed copies are considered uncontrolled. Before using a printed copy, verify that it is the current version.

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|---|---|
| RESPONSIBLE GENERAL MANAGER | Chief Executive Officer |
| POLICY OWNER | Community Development Officer – Social Development |
| APPROVED/ADOPTED BY | Council on 21 September 2020 |
| EFFECTIVE DATE (if different from approval date) | 21 September 2020 |
| SIGNATURE |  |
| REVIEW DATE | 21/09/2024 |
| CM REF AND VERSION | 14/95986[v2] |
| VERSION HISTORY | <p>This Policy replaces:</p> <ul style="list-style-type: none">• Gambling Policy and Action Plan 2014-2019 (14/95986)• Gaming Policy 2002 (02/75903) |

Public Toilet Strategy (2016)

The Kingston Public Toilet Strategy sets out a framework for the provision of public toilets within the municipality over the next 10 years.

The Strategy sets out a 10 year action plan that establishes priority public toilet provision in Kingston.

It also establishes guiding principles and key directions that prioritise the replacement, refurbishment and removal of existing public toilets and the provision of new facilities in Major Activity Centres and large parks and foreshore areas.

Key principles

Public toilets are an important community asset and their provision, maintenance and operation will continue to be carefully monitored by Council to ensure the following objectives are met:

- Provision

The provision of public toilets will be prioritised on Council owned and managed land. Opportunities to explore agreements with private landowners could be explored in the future subject to achieving net community benefit.

- Safety

The safety of the community will be prioritised over other decision making considerations including location and convenience, particularly in locations where there is a demonstrated need for surveillance.

- Inclusive access

Public toilets will be of high quality and accessible to all users. Council will strive to achieve DDA compliance across all facilities and toilet types over time.

- Cleanliness

Public toilets will be regularly cleaned and maintained to ensure Council's public toilet infrastructure meets the needs of the community and expectation at all times.

Sites identified as high use facilities will be cleaned and maintained more frequently than others.

- Siting & Design

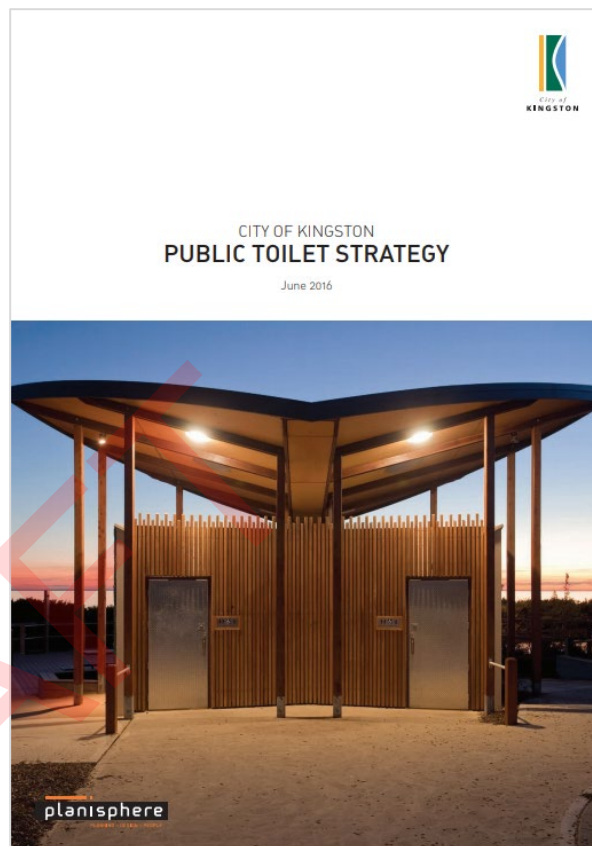
The replacement, refurbishment or addition of a new public toilet facility will meet the design and siting principles outlined in this strategy.

- Investment Priority & Community Benefit

The frequency of use will inform the context of investment and priority. Public need will always be considered in conjunction with the reasonable expectation of facilities, practicalities of provision, and expenditure.

Master Plan implications

- No site specific recommendations were provided.



Playground Strategy 2010

At the time of preparing the strategy in 2010, Kingston City Council had 112 playgrounds in public parks, plus a number of new sites that were currently being developed or proposed for play spaces (such as Stanley Avenue Reserve).

These represent a considerable investment by Council in planning, design, development and maintenance. While their benefits are never completely measured in any monetary sense, they are a major asset to individuals, to the community and to the environment, and are valued in many different ways.

This report represents a strategic approach to the development of play spaces in parks, aiming to deliver the maximum value to the community through thoughtful programs of planning, design and maintenance.

This approach allows Council to avoid misplaced or ad hoc expenditure, to get the best value from its investment for the community, and to provide the most equitable access to play in open space.

Key principles

The City of Kingston Policy Statement on Play is founded on the principle that the United Nations Convention on the Rights of the Child, ratified by the Australian Government in December 1990, recognises the importance of play for the child.

- Kingston City Council recognises the significance and value of play in children's development.
- Kingston City Council recognises the significance of the physical environment in providing opportunities for outdoor play
- Kingston City Council recognises risk-taking is an inherent part of play and child development and therefore must be treated in a different way from other risk management issues.

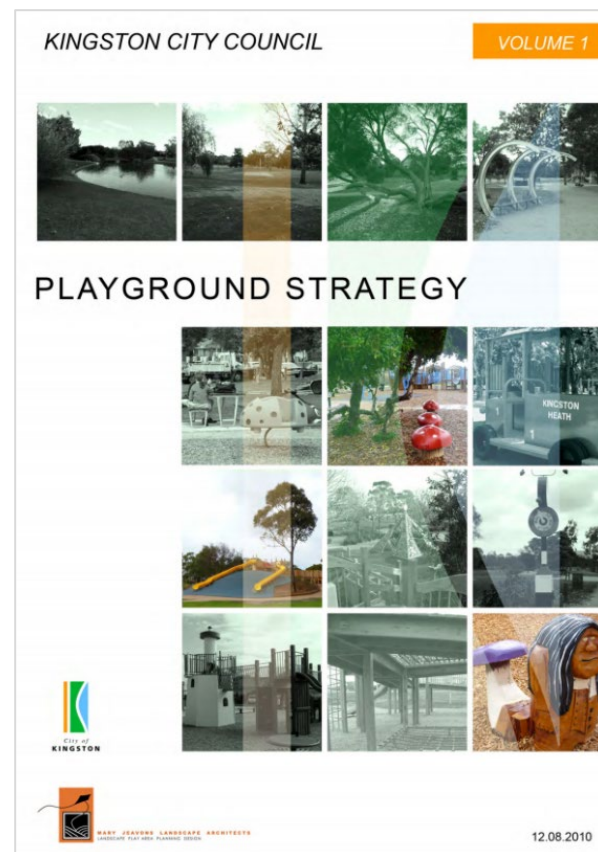
Playgrounds, along with the parks and the open space system in the City of Kingston, have been classified as:

- Neighbourhood: serve just the immediate neighbourhood
- Local: generally serve a whole precinct
- District: serve a group of precincts
- Regional: serve a much larger catchment
- Town Park: serves an urban civic environment

Master Plan implications

The following site specific comments were provided in the report:

- The playground offers a good, complex set of opportunities for a range of age groups. It is well shaded by trees.
- The main issue is that it does not have wheelchair access to any activities, which as a District Park would be recommended.
- It is recommended to prepare a detailed plan for the play area and add some inclusive accessible elements. For example, investigate the following options:
 - It may be possible to get a wheelchair in under the high slide deck; investigate height and manoeuvrability space
 - Aim to add cubby play that children in wheelchairs can join in
 - Add one interactive activity specifically designed for wheelchair access such as a 'high end' musical instrument or other creative play option, preferably operated from both sides
 - Consider adding a little trail on a firm pathway, into the shrubby areas and make some spaces which are accessible and natural for imaginative play



COVID impacts.

The COVID-19 pandemic continues to disrupt and impact Australians and their communities.

A number of research groups/projects have commenced investigating the short and long-term impacts of the COVID-19 pandemic on physical activity and wellbeing. However, there is currently a limited amount of robust data and analysis available.

This section identifies a short overview of the key findings from a selection of emerging research relevant to the sport and active recreation sector.

Household Impacts of COVID-19 Survey (Australian Bureau of Statistics)

- Fewer Australians reported feelings that had an adverse impact on emotional and mental wellbeing in November 2020 than in August.
- Around one in five (21%) Australians experienced high or very high levels of psychological distress in November 2020.
- Women were more likely than men to have experienced high or very high levels of psychological distress (25% compared with 16%).
- The most common precautions being taken in November continued to be people washing their hands or using hand sanitiser regularly (93%) and keeping a physical distance from people (80%).
- In November 2020, around one in six (16%) Australians aged 18 years and over reported providing unpaid care for a vulnerable person.
- Since 1 March 2020, one in four (25%) people who provided unpaid care to a vulnerable person had difficulty providing care or assistance because of COVID-19.
- In November 2020, paying household bills was reported to be the most common use of the Coronavirus Supplement (67%) and the JobKeeper Payment (78%).
- Australians aged 18 years and over who had a job working paid hours remained stable between October (62%) and November (62%).
- In November 2020, one in seven (15%) people reported life had already returned to normal, compared with one in ten (10%) in July 2020.
- The most common aspect of life Australians wanted to continue after the COVID-19 restrictions ease was spending more time with family and friends (37%).

Coronavirus Victorian Wellbeing Impact Study (VicHealth)

During the first lockdown of 2020, VicHealth surveyed 2,000 Victorian adults to explore how their health and wellbeing was affected.

The survey covered general wellbeing, social connection, healthy eating, physical activity, financial hardship, smoking, alcohol consumption, as well as working and home life.

It shows the positive and negative impacts of the first lockdown including:

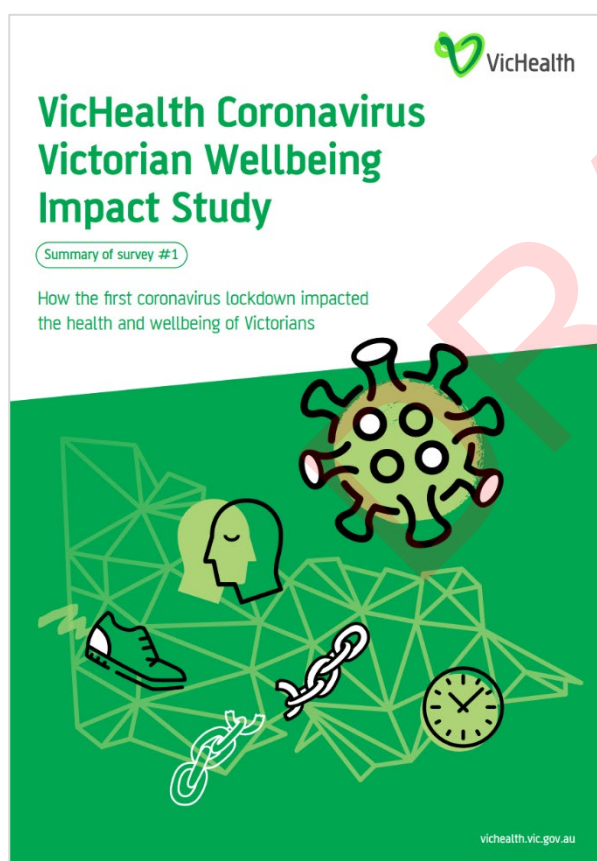
- **General wellbeing:** many people experienced mental wellbeing issues and lower levels of life satisfaction.
- **Social connection:** overall Victorians felt less socially connected.
- **Healthy eating:** there was a concerning rise in food insecurity and consumption of sugary drinks.
- **Smoking:** there was a mix of positive and negative results for smoking.
- **Alcohol consumption:** feeling anxious or stressed may have increased alcohol intake for some people.
- **Financial hardship:** a large number of Victorians have experienced financial hardships and increasing uncertainty.
- **Physical activity:** on the positive side most of those able to continue being active did so, but there were some limiting factors.
- **Working and home life:** many Victorians were concerned about their job prospects, and mothers were bearing the greater load of helping children with school at home.
- **Positive impacts:** there were some silver linings with Victorians wanting to keep some aspects of work and home life during lockdown.
- **People facing hardship:** there are stark differences between the experiences of some people or communities and the rest of the state.

A follow-up survey of around 2,000 Victorians was conducted in September 2020.

Overall, the significant changes in health and wellbeing factors at the state level between Survey One and Two can be summarised as follows:

- Improvement in the risk of short-term harm from alcohol; reliance on low-cost unhealthy food due to shortage of money; and financial hardship.

- Decline in life satisfaction; subjective wellbeing; and social connection.
- Other changes have also occurred, such as a slight improvement in the frequency of daily consumption of sugary drinks and running out of food due to shortage of money, however these were not statistically significant changes.
- Survey Two identified stark differences between the experiences of communities facing hardship and the wider population. Those experiencing the most significant health and wellbeing impacts compared to the Victorian population overall, included:
 - young people aged 18–35 years
 - people on low incomes
 - people who are unemployed
 - people with a self-reported disability
 - Aboriginal and Torres Strait Islander people
 - people living in inner Melbourne
 - bushfire-affected communities.



AusPlay Focus: Early impact of COVID-19 on sport and physical activity participation (SportAus)

General findings:

- *COVID-19 appears to have prompted (or perhaps necessitated) the need for more frequent participation.* For example, those that participated 5+ times per week increased by 5-6% in the April-June 2020, as compared to the same period in 2019. As participation frequency increases so does the gap between participation rates in data collected pre and during COVID-19 for both males and females.
- *The types of activities that were (or weren't) possible during and after COVID-19's first wave may explain this.* Physical activities like walking were still possible and these are typically participated in more frequently than sports, particularly organised sports, which were largely paused during COVID-19.
- *In April 2020, around the time that restrictions were first put in place, there was an increase in adults 18+ saying they had deliberately been more active.* This was more pronounced in the under-35s and over 55s than those aged 35-54.
- *Looking at motivations for participation, physical and mental health and social reasons are more prevalent in data collected during April-June 2020.* This aligns with what we know about why Australian adults get active. Historical AusPlay data shows that non-sport-related activity is more strongly associated with physical and mental health, whereas sport is more closely tied to fun/enjoyment. What's atypical, however, is the increased prevalence of social reasons as a motive during COVID-19 as this has historically been more closely tied to sport. This may be due to Australians craving some form of social connection, irrespective of the activity, during and after COVID-19's first wave.
- *People who were finding it easier to keep fit and active reported feeling more optimistic and connected, with greater wellbeing.*
- *Children were more impacted than adults.* Nine in 10 adults were active at least once in the last 12 months and 73% were active at least once in the seven days prior to interview in April-June 2020. That is, almost three quarters of Australian adults were active during lockdown.

Comparatively, 72% of children were active outside of school in organised sport or physical activity at least once in the last 12 months but only 17% were active at least once in the seven days prior to interview in April–June 2020. This means that less than one in five Australian children were active in organised activities outside of school during lockdown. This makes sense given that organised sport, particularly club sport, is the main staple of organised activity for children outside of school.

- *Some children's activities were more likely to be continued.* Instead of the usual popular organised activities such as swimming and football, various forms of dancing, some of which could be done online, were most able to be continued in the seven days prior to interview in April–June 2020.
- *Younger and middle-aged Australian adults were more impacted than older Australians.* Of those adults who had participated in at least one activity in the last 12 months, fewer younger and middle-aged adults than older Australians had continued to participate in at least one activity in the seven days prior to interview in April–June 2020. Younger and middle-aged Australians experienced significant disruption with many losing their employment and others being forced to work from home. Parents working from home also had to juggle children at home as school students switched from classroom to online learning. Adults who continued with their usual activities in the seven days prior to interview in April–June 2020 were asked whether the amount they participated had changed due to COVID-19. The percentage of adults whose participation did not change increased with age. One reason for this is non-sport-related physical activities being more popular as we age. The data shows that younger and middle-aged adults were more likely to participate in their activities less. Older Australians, however, had less disruption to their physical activity routine.
- *Non-sport-related activities kept adults 18+ active during lockdown.* Younger adults aged 15–17 maintained less of their nonsport-related activity by comparison. Adults 18+ were able to keep up a higher proportion of their non-sport-related physical activity than sport-related during lockdown.

- *Recreational and fitness activities were most popular.* The top-10 adult activities with highest continuation during April–June lockdown included:

- Walking (recreational) 86.3%
- Exercise at home 81.6%
- Exercise biking 81.3%
- Track/road cycling 65.8%
- Weightlifting 64.0%
- Running 63.9%
- Jogging 62.7%
- Weight training 59.4%
- Trail running 58.2%
- Horse riding 57.9%

- *Recreational and fitness activities also dominated the types of activities that were participated in more from April–June 2020.* These activities, particularly those that can be done solo or physically distanced, were more immune to COVID-19 disruption. The top-10 activities adults participated in more during April–June lockdown included:

- Jogging 41.8%
- Running 41.0%
- Yoga 38.6%
- Exercise at home 37.9%
- Bike riding/Cycling 36.1%
- Mountain biking 34.4%
- Walking (Recreational) 33.6%
- Bush walking 31.6%
- Surfing (Other) 30.6%
- Track/Road cycling 27.1%

- *In contrast, organised or team sports were more likely to be participated in less or not at all across the same period.*
- Top 10 activities adults participated in less:

- Football/soccer 50.2%
- Basketball 47.2%
- Gym workouts 41.8%
- Australian football 40.8%
- Gym classes 37.2%
- Weightlifting 34.3%
- Weight training 27.8%
- Pilates 24.3%
- Hiking 23.2%
- Swimming 21.9%

- Top 10 activities adults did not participate in at all:

- Futsal 100%
- Indoor netball 100%
- Rock climbing 100%
- Squash 97.2%
- Touch football 96.5%
- Indoor football/soccer 94.0%

- Netball 93.8%
 - Swimming 91.0%
 - Stand up paddle boarding 90.5%
 - Badminton 89.7
- *Australians have missed sport being in their lives.* Sport is a part of Australian culture and many people miss it when it's not there. In April 2020, after it had been suspended for several weeks, almost half of Australians (44%) said that beyond being active they missed sport being in their life. This fell steadily since professional and community sport restarted across most of the country, to 29% in August 2020. This feeling of missing sport is more pronounced among men and younger adults.
 - *In June the majority of adult 18+ participants were looking forward to being able to play their chosen sport again.*
 - 57% were extremely or very keen to play if their sport started up again. 61% were extremely or very likely to do so when it was available.
 - Similar proportions of parents/guardians wanted their children to get back to sport. 57% were extremely or very keen for their children to play again. 59% said their children were extremely or very likely to do so when it was available.
 - By August 2020, Adult participation levels were 71% of what might have been expected had the pandemic not emerged. 64% of children who expected to play organised sport were participating.
 - 19% of adults expected to volunteer in at least one sport before COVID-19. 13% were actually volunteering by August, which is 68% of pre-COVID-19 expectations.
 - This enthusiasm to get back to sport may provide hope for a post-pandemic future and helped many get back into organised sport as soon as they could. Some players had chosen not to return to all or some of their sport but more often it was because their sport was yet to start again. Furthermore, some people had started playing sport when they hadn't expected to or weren't sure if they would pre-COVID-19.



Impact of COVID-19 on Community Sport: survey report July 2020 (Australian Sports Foundation)

In May and June ASF carried out a survey to assess the impact of COVID-19 on community sport. It is estimated that over 16,000 of these local sports clubs are at risk of closure due to financial losses and new costs associated with COVID-19.

Key findings include:

- 93% of all clubs surveyed have lost money since the onset of COVID-19, caused by a steep decline in revenues and the need to pay ongoing costs;
- Up to 80% of clubs forecast ongoing reductions in core revenue streams (such as memberships, local sponsorships and community fundraising), while 97% of all clubs surveyed face additional COVID-19 related costs;
- These new financial realities threaten the sustainability of community sports clubs. Around one in four respondents cited organisational solvency as a major concern - meaning over 16,000 community sports clubs are at risk of closure if financial support is not provided;
- COVID-19 has also significantly impacted Australia's 3 million sporting volunteers, with up to 43% of sports clubs projecting a decline in volunteering, contributing further to fears about the sustainability of many local community sports clubs.
- Australia's 70,000 Community sports clubs have lost an estimated aggregate \$1.6bn to date due to COVID-19. For Small Local Clubs, the average amount lost to date is around \$14,900, while for Larger Local Clubs, the average amount lost to date is just over \$37,000;
- The shutdown of community sport from March onwards has had a profound social impact on community sports participants, with a contemporaneous research study showing around 1 in 3 respondents reported worse physical and mental health compared to the year before;
- Nearly 70% of Small Local Clubs forecast a decline in active participants and 43% project a decline in volunteers. At the same time, around a third of clubs project increased demand for community sport post lockdown, putting them under increased pressure they may be unable to meet due to financial constraints and lack of volunteers;

- Overall the combination of reduced revenues and increased costs mean that one in four respondents feared for their club's solvency – indicating over 16,000 community sports clubs nationally are thought to be at risk of closure;
- On average, Small Local Clubs require additional funding of around \$12,600 per club, to assist them through the return to sport, and Large Local Clubs require around \$26,800 per club.
- In aggregate the support needed is in the region of \$1.2bn across Australia's 70,000 community sports clubs;
- Without financial support, thousands of community sports clubs risk closure. This would have a devastating impact on physical and mental health for millions of Australia's sports participants and volunteers.

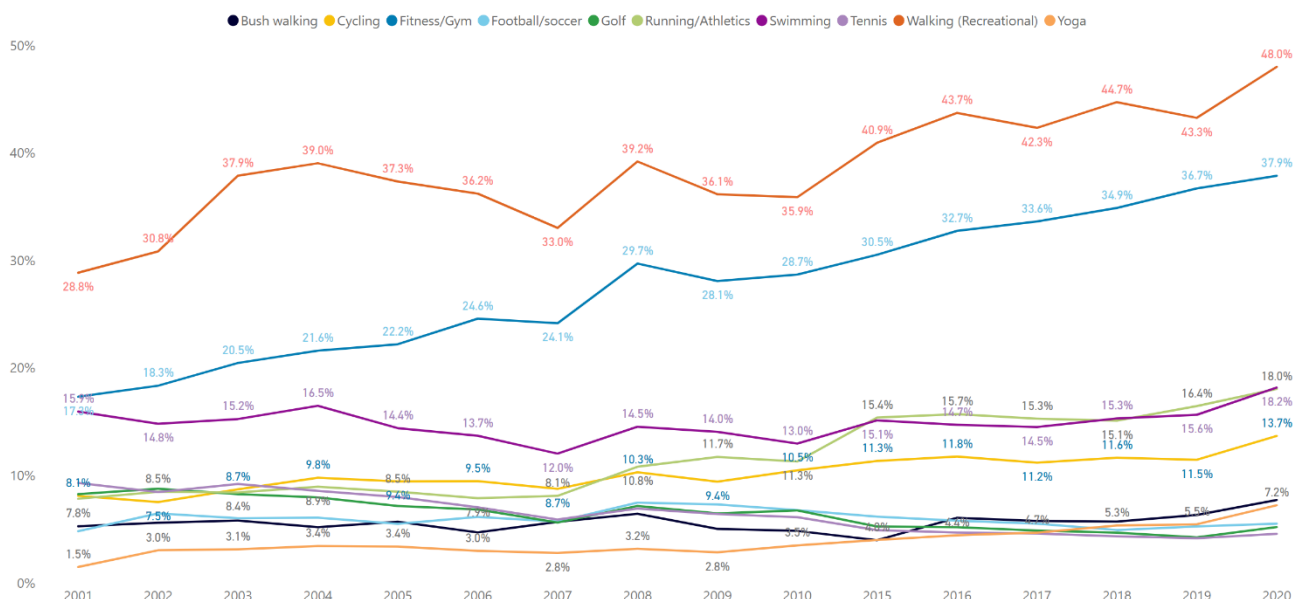


appendix 2 – participation trends

national trends.

An analysis undertaken by SportAus, utilising aggregated data from 2015-16 FY to 2019-20 FY, notes the following key insights:

- Participation in sport and physical activity has increased overall in the last two decades. More adults participate more frequently in 2020 compared to 2001.
- Those that participated 1+/year has grown from 77.8% to 90.0%.
- Those that participated 1+/week has grown from 62.0% to 82.5%
- Those that participated 3+/week has grown from 37.1% to 64.7%
- Female participation (at least once a year) has remained on par with male participation throughout. However more women have constantly participated more often.
- Those that participated at least once per year has grown from 79.8% to 89.7% for males, and from 75.9% to 90.4% for females
- Those that participated at least 3 times per week has grown from 35.0% to 61.1% for males, and from 39.2% to 68.2% for females
- The ACT has always had the highest participation rates over the years, while Victoria and SA has seen most progress (Victoria has grown from 77.4% to 91.0%).
- Participation in sport-related activities hasn't increased, while at the same time non-sport physical activities have increased significantly.
- sport related activities has grown from 57% to 62% (with a dip to 50% in 2007)
- non-sport related activities has grown from 46% to 74%
- Participation in both sport and non-sport related activities is the highest group in 2020 at 45%, significantly higher than non-sport related physical activities only (28%) and sport related activities only (17%)
- In comparison, sport only was the highest group in 2001 at 32%, higher than both sport and non-sport related activities (25%) and non-sport related activities (21%)
- Participation in non-sport recreational activities such as walking and fitness/gym have increased the most. Individual sport activities such as running/jogging and cycling have seen upticks, while golf and tennis have significantly dropped.
- Walking is the highest participated sport at 48.0% (growing from 28.8%), followed by Fitness/gym at 37.9% (growing from 17.3%), and swimming at 18.2% (growing from 15.9%). These three activities have consistently been the top three activities during this time.
- Running/athletics at 18% (growing from 7.8%) and cycling at 13.7% (growing from 8.1%) are the next highest.
- Rounding out the top 10 activities in 2020 are bush walking (7.7%), yoga (7.2%) football/soccer (5.5%), golf (5.2%) and tennis (4.6%).
- Interestingly, in 2001 golf (8.2%) and tennis (9.3%) were both higher than running/athletics and cycling - however this has dropped off significantly.



state trends.

An analysis undertaken by SportAus, utilising aggregated data from 2015-16 FY to 2019-20 FY, notes the following key insights:

children

- Participation rate of 75.9% for children (73.5% national)
 - 1+/month = 71% ▪ 4+/w = 13%
 - 1+/fortnight = 69% ▪ 5+/w = 8%
 - 1+/week = 60% ▪ 6+/w = 4%
 - 2+/w = 36% ▪ 7+/w = 3%
 - 3+/w = 22%
- More males (52%) participate than females (48%) for children
- Participation peaks at ages 9-11 (91.8%) before dropping off between 12-14 (85.8%) and then increasing again at age 15-17
- Highest participation is found in households with an equal number of children 15 and under/over (84.2%), and lowest in younger families with most children under 15 (75.1%)
- Indigenous (80.3%) has a higher participation rate than the state and national total participation rate, while CALD (67.8%) and LOTE (65.8%) is significantly lower
- 44% participate through a sports club or association
- 72% participate in sport-related activities and 4% participate in physical activity only
- Participation at least once per year has grown from 70.5% to 73.5% between 2015-16 and 2019-20, but peaked in 2018-19 (82.2%)
- Participation at least once per week has grown from 53.6% to 57.3%, peaking in 2016-17 (65%)
- Participation at least three times per week has grown from 18.8% to 19.9%, peaking in 2017-18 and 2018-19 (22.8%)
- Most children participate in two activities

Figure 29. Top 10 participated in activities (children)

| Activity | Participation rate (%) | |
|---------------------|------------------------|----------|
| | Vic | National |
| Swimming | 36.5 | 33.5 |
| Australian football | 14.6 | 8.3 |
| Basketball | 12.7 | 7.2 |
| Gymnastics | 9.4 | 9.3 |
| Dancing | 9.2 | 9.0 |
| Football/soccer | 9.1 | 14.6 |
| Tennis | 7.5 | 6.0 |
| Netball | 7.0 | 6.8 |
| Cricket | 6.7 | 5.3 |
| Running/athletics | 4.1 | 5.3 |

adults

- 90.1% for adults (higher than national average of 89.4%)
 - 1+/month = 88% ▪ 4+/w = 51%
 - 1+/fortnight = 86% ▪ 5+/w = 41%
 - 1+/week = 82% ▪ 6+/w = 31%
 - 2+/w = 74% ▪ 7+/w = 25%
 - 3+/w = 63%
- Participation at least once per year has grown from 87.1% to 91.2% between 2015-16 and 2019-20. It peaked in 19-20
- Participation at least once per week has grown from 79.1% to 82.5%, however it peaked in 2018-19 (84.1%)
- Participation at least three times per week has grown from 59.6% to 63.9%, however it peaked in 2018-19 (64.6%)
- More females (51%) participate than males (49%) for adults
- Participation peaks at ages 15-17 (95.5%), remains relatively steady from 18-54 (around 91%), before dropping off from 55 onwards (89.4% and 86.8% for 65+)
- Highest participation is found in mature family households (most children over 15) and lowest is in adult shared house, but the difference is small (90.8% to 89.3%)
- Indigenous (85.8%), CALD (86.3%) LOTE (84.2%) and PWD (81.4%) all have lower participation rates than the state and national total participation rate
- Those living in major cities are more likely to participate than state/ national rates and those living regionally
- 61% participate via organisation/ venue
- 22% participate via sports club/ assoc.
- 58% participate in sport-related activities and 72% in non-sport activities
- Most people participate in two activities
- 34.9% met Australia's Physical Activity and Sedentary Behaviour Guidelines
- 21.2% of 15-17 year olds met the guidelines of 60 minutes every day
- 37.9% of 18-64 met the guidelines of 30 minutes every weekday
- 25.8% of 65+ met the guidelines of 30 minutes every day

Figure 30. Top 10 participated in activities (adults)

| Activity | Participation rate (%) | |
|------------------------|------------------------|----------|
| | Vic | National |
| Walking (Recreational) | 45.4 | 43.9 |
| Fitness/Gym | 35.5 | 34.7 |
| Running/athletics | 16.5 | 15.9 |
| Swimming | 14.3 | 15.4 |
| Cycling | 13.3 | 11.7 |
| Bush walking | 5.7 | 6.0 |
| Yoga | 5.4 | 5.2 |
| Golf | 5.3 | 4.8 |
| Basketball | 5.2 | - |
| Tennis | 5.1 | 4.5 |

local trends.

An analysis of participation trends in Australia undertaken by SportAus, utilising aggregated data from 2015-16 FY to 2019-20 FY, notes the following key insights:

- Participation rate of 93.1% for adults, higher than both state and national averages
- Participation rate of 85.0% for children, higher than both state and national averages
- Pilates is the only activity in Kingston's top 10 participated activities that is not represented in the state and national top 10 activities
- Kingston also has a significantly higher participation rate in golf, likely testament to the wealth of golf courses throughout the Sandbelt region
- Kingston's top 5 activities, all of which are 'recreational' activities, all have higher participation rates than state and national averages

Figure 31. Top 10 participated in activities (all ages)

| Activity | Participation rate (%) |
|-------------------|------------------------|
| | Kingston |
| Walking | 38.9 |
| Fitness/gym | 32.9 |
| Swimming | 23.7 |
| Running/athletics | 14.9 |
| Cycling | 11.1 |
| Golf | 7.3 |
| Pilates | 6.0 |
| Tennis | 5.7 |
| Basketball | 5.1 |
| Yoga | 5.1 |

Figure 32. Top 10 participated in activities (adults)

| Activity | Participation rate (%) | | |
|-------------------|------------------------|------|----------|
| | Kingston | Vic | National |
| Walking | 47.3 | 45.4 | 43.9 |
| Fitness/gym | 39.0 | 35.5 | 34.7 |
| Swimming | 19.8 | 14.3 | 15.4 |
| Running/athletics | 17.2 | 16.5 | 15.9 |
| Cycling | 13.2 | 13.3 | 11.7 |
| Golf | 8.6 | 5.3 | 4.8 |
| Pilates | 7.3 | - | - |
| Yoga | 6.0 | 5.4 | 5.2 |
| Tennis | 5.7 | 5.1 | 4.5 |
| Bush walking | 5.3 | 5.7 | 6.0 |

Figure 33. Top 7 participated in activities (children)

| Activity | Participation rate (%) | | |
|---------------------|------------------------|------|----------|
| | Kingston | Vic | National |
| Swimming | 41.4 | 36.5 | 33.5 |
| Australian football | 20.3 | 14.6 | 8.3 |
| Netball | 14.9 | 7.0 | 6.8 |
| Gymnastics | 14.4 | 9.4 | 9.3 |
| Dancing | 13.3 | 9.2 | 9.0 |
| Basketball | 11.5 | 12.7 | 7.2 |
| Cricket | 8.4 | 6.7 | 5.3 |

appendix 3 – demographic profile

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Namatijira Reserve Profile (Clarinda, Clayton South, Heatherton, Oakleigh South)

September 2020

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1. Summary

Population

In 2020 the estimated population in Clarinda was 7,776 people, Clayton South 14,222 Heatherton 3,003 and 4,361 people in Oakleigh South.

The Clayton South population is forecast to increase by 20.7% in 2041 and all other suburbs are forecast to increase less than Kingston in 2041 with Clarinda 4.3%, Heatherton 6.3% and Oakleigh South only 1.97%.

The City of Kingston population forecast for 2020 is 165,982 and is forecast to grow to 198,340 by 2041.

Disability

There are potentially 5,137 people who have a disability living in Clarinda, Clayton South, Heatherton and Oakleigh South. Of these, there are less people that need help with their daily activities due to a disability, of which the majority are aged over 60 years old.

Birthplace and language

In 2016 over half the residents in Clarinda (50.7%) and Clayton South (63%) which is a slight increase from 2011. Heatherton had 31% of people born overseas and Oakleigh South had 31%.

In 2016, the language most commonly spoken at home (other than English) in Clarinda, Clayton South and Oakleigh South was Greek and the third most spoken language in Heatherton.

Other languages (excluding English) spoken at home in these areas include Mandarin, Russian, Punjabi, Khmer and Italian.

In 2016, Clarinda, Clayton South, Heatherton and Oakleigh South all had a higher proportion of their population that spoke a language other than English at home compared to Kingston.

Households and income

In 2016 the most prevalent household type in Clarinda, Clayton South, Heatherton and Oakleigh South was couples with children. All these suburbs have larger proportions of households with couples and children and one parent families than the Kingston average.

All areas in this profile have a lower proportion of households living alone than the Kingston average of 24.4%.

There are more households in Clarinda, Clayton South and Oakleigh South earning in the lowest income quartile than Heatherton and Kingston. Heatherton households has more households in the two higher income quartiles than Kingston.

Car ownership

Clayton South has a train station (Westall) on the Pakenham line and there are six bus routes that travel through Clarinda, Oakleigh South, Heatherton.

On average Clarinda, Heatherton and Oakleigh South have more cars per household compared to both Clayton South and Kingston. Clayton South have more households with no car than Kingston and the other profile suburbs.

Education and employment

In 2016, Heatherton had a significantly higher proportion of children attending both primary and secondary schools than in Clarinda, Clayton South, Oakleigh South and Kingston.

Most of the labour force in the profile areas were employed in 2016. The highest unemployment rate was in Clayton South (9.1%) followed by Clarinda (6.8%). Heatherton and Oakleigh South had similar unemployment rates as Kingston with 5.4%, 5.7% and 5.4% respectively.

COVID-19 has made an impact on people being able to work and the unemployment rate. The April Labour Force data shows an increase in the unemployment rate for Australia from 5.2% in March 2020 to 6.2% in April 2020.

SEIFA Index of Socio-Economic Disadvantage

A higher score on the index means a lower level of disadvantage on the Index of Relative Socio-Economic Disadvantage (IRSD). In 2016 the Clarinda score was 975.9, Clayton South 957.4, Heatherton 1060.4 and Oakleigh South 1020.3. This placed Clarinda in the 32nd percentile Clayton South in the 24th percentile and Oakleigh south in the 57th percentile of all areas in Australia. Heatherton was the highest in the 82nd percentile. In comparison Kingston scored 1044 (73rd percentile) and Greater Melbourne 1021 (57th percentile).

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2. Population

In 2020 the estimated population in Clarinda was 7,776 people, Clayton South 14,222 Heatherton 3,003 and 4,361 people in Oakleigh South.

The population in Clayton South is forecast to increase by 20.7% by 2041, all other suburbs are forecast to increase at a lower rate than Kingston by 2041, with Clarinda 4.3%, Heatherton 6.3% and Oakleigh South only 1.97%.

The City of Kingston population forecast for 2020 is 165,982 and is forecast to grow to 198,340 by 2041.

2.1 Population by age groups 2016¹

The largest population group in Clarinda in 2016 was people aged 20 - 24 year, in Clayton South 25 to 29 years, in Heatherton 40 to 44 years and in Oakleigh South 55 to 59 years.

In line with our ageing population, the age groups forecast for a large growth between 2016 and 2041 are in the older age groups of 70+ years for Clarinda, Heatherton, Oakleigh South.

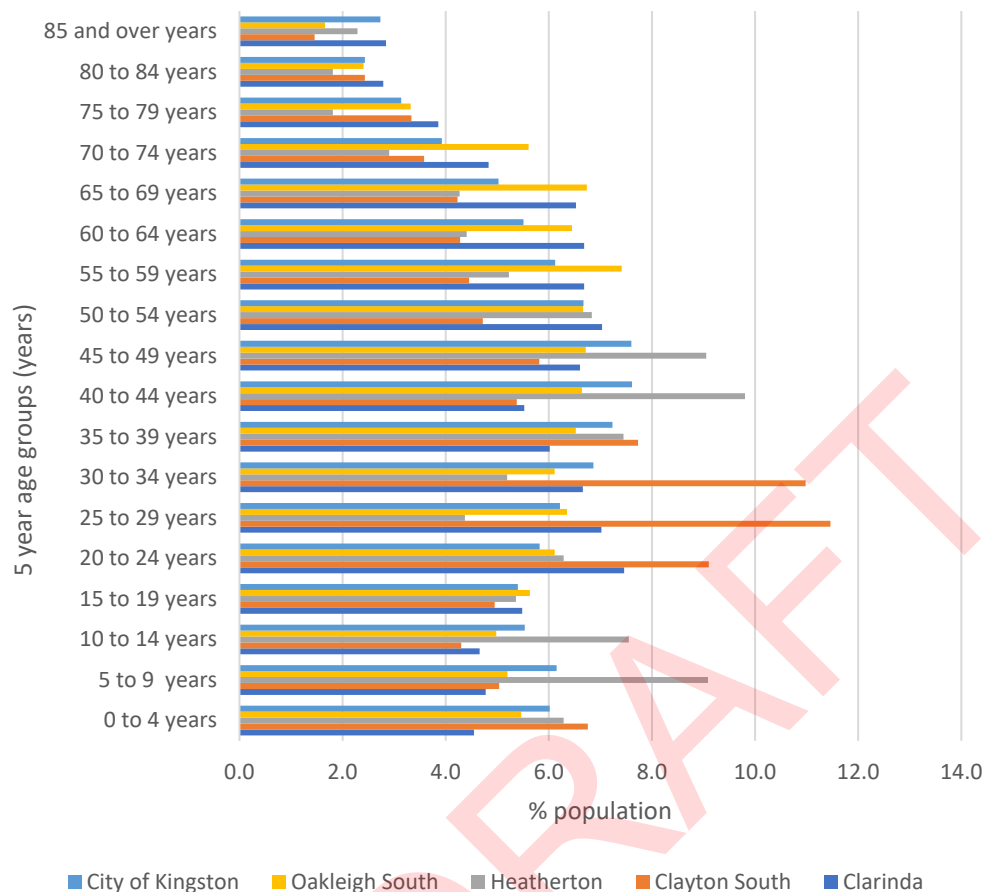
Table 1. Population by age groups Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016

Bold indicates age group with highest proportion of population

| Five year age groups (years) | Clarinda % | Clayton South % | Heatherton % | Oakleigh South % | City of Kingston % |
|------------------------------|------------|-----------------|--------------|------------------|--------------------|
| 0 to 4 years | 4.6 | 6.8 | 6.3 | 5.5 | 6.0 |
| 5 to 9 years | 4.8 | 5.0 | 9.1 | 5.2 | 6.1 |
| 10 to 14 years | 4.7 | 4.3 | 7.6 | 5.0 | 5.5 |
| 15 to 19 years | 5.5 | 5.0 | 5.4 | 5.6 | 5.4 |
| 20 to 24 years | 7.5 | 9.1 | 6.3 | 6.1 | 5.8 |
| 25 to 29 years | 7.0 | 11.5 | 4.4 | 6.4 | 6.2 |
| 30 to 34 years | 6.7 | 11.0 | 5.2 | 6.1 | 6.9 |
| 35 to 39 years | 6.0 | 7.7 | 7.4 | 6.5 | 7.2 |
| 40 to 44 years | 5.5 | 5.4 | 9.8 | 6.6 | 7.6 |
| 45 to 49 years | 6.6 | 5.8 | 9.1 | 6.7 | 7.6 |
| 50 to 54 years | 7.0 | 4.7 | 6.8 | 6.7 | 6.7 |
| 55 to 59 years | 6.7 | 4.5 | 5.2 | 7.4 | 6.1 |
| 60 to 64 years | 6.7 | 4.3 | 4.4 | 6.5 | 5.5 |
| 65 to 69 years | 6.5 | 4.2 | 4.3 | 6.7 | 5.0 |
| 70 to 74 years | 4.8 | 3.6 | 2.9 | 5.6 | 3.9 |
| 75 to 79 years | 3.9 | 3.3 | 1.8 | 3.3 | 3.1 |
| 80 to 84 years | 2.8 | 2.4 | 1.8 | 2.4 | 2.4 |
| 85 and over years | 2.8 | 1.5 | 2.3 | 1.7 | 2.7 |

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

Figure 1. Population by age groups Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

2.2 Population forecast²

The City of Kingston population forecast for 2020 is 165,982 and is forecast to grow to 198,340 by 2041 which is an increase of 19.5%.

The Clayton South population is forecast to increase by 20.7% in 2041 and all other suburbs are forecast to increase less than Kingston in 2041 with Clarinda 4.3%, Heatherton 6.3% and Oakleigh South only 1.97%.

In line with our ageing population, the age groups forecast for a large growth between 2016 and 2041 are in the older age groups of 70+ years for Clarinda, Heatherton, Oakleigh South. Heatherton is forecast a greater growth than Kingston for people aged 70 to 84 years, and Clayton South is forecast to have greater growth in the 50 to 59 years than Kingston. Clarinda and Oakleigh South are forecast to have a greater increase in the 85 and over age group than Kingston.

Table 2. Top 3 age groups forecast population increases from 2016 to 2041, Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston

| Clarinda | Clayton South | Heatherton | Oakleigh South | City of Kingston |
|--|---|--|---|--|
| Parents and homebuilders (35 to 49) + 17 (18%) | Young workforce (25 to 34) + 534 (21%) | Parents and homebuilders (35 to 49) -124 (21%) | Parents and homebuilders (35 to 49) -62 (19%) | Parents and homebuilders (35 to 49) + 5569 (21%) |
| Seniors (70-84) + 397 (15%) | Young workforce (25 to 34) + 534 (21%) | Older workers and pre-retirees (50 to 59) + 50 (13%) | Seniors (70 to 84) +180 (16%) | Young workforce (25 to 34) + 4092 (13%) |
| Young workforce (25 to 34) + 51 (14%) | Parents and homebuilders (35 to 49) + 912 (20%) | Seniors (70 to 84) + 205 (12%) | Older workers and pre-retirees (50 to 59) -67 (12%) | Older workers and pre-retirees (50 to 59) + 4424 (12%) |

Source: Population and household forecasts, 2016 to 2041, prepared by .id

The largest age groups forecast to decline in population between 2016 and 2041 are:

- Clarinda - Older workers and pre-retirees (50 to 59) decrease of 132 (11.5%)
- Clayton South – no groups had negative growth
- Heatherton - Parents and homebuilders (35 to 49) decrease of 124 (21%)
- Oakleigh South - Parents and homebuilders (35 to 49) a decrease of 62 (19%)

Table 3. Forecast age structure change between 2016 and 2041– Service age groups for Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston

| Age groups | Change between 2016 and 2041 | | | | | | | | | |
|------------------------------|------------------------------|------|---------------|-----|------------|------|----------------|------|----------|-----|
| | Clarinda | | Clayton South | | Heatherton | | Oakleigh South | | Kingston | |
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| Babies / pre-schoolers | -27 | -4% | 193 | 20% | -11 | 0% | -32 | -13% | 1,313 | 14% |
| Primary | -30 | -9% | 274 | 31% | -74 | -25% | -26 | -2% | 1,951 | 15% |
| Secondary | 2 | 3% | 267 | 40% | 10 | 0% | -18 | -9% | 2,516 | 25% |
| Tertiary | -84 | -8% | 402 | 23% | 16 | 6% | -52 | -17% | 2,531 | 19% |
| Young workforce | 51 | 5% | 534 | 17% | -22 | 1% | -79 | -12% | 4,092 | 19% |
| Parents / homebuilders | 17 | 3% | 912 | 36% | -124 | -17% | -62 | -9% | 5,569 | 16% |
| Older workers / pre-retirees | -132 | -12% | 446 | 34% | 50 | 14% | -67 | -11% | 4,424 | 22% |
| Empty nesters / retirees | -104 | -11% | 232 | 18% | 94 | 29% | -54 | -7% | 4,834 | 29% |
| Seniors | 397 | 44% | 317 | 26% | 205 | 170% | 180 | 40% | 9,382 | 64% |
| Elderly | 203 | 92% | 81 | 40% | 36 | 16% | 116 | 178% | 2,788 | 68% |
| Total persons | 293 | 4% | 193 | 20% | 180 | 6% | -93 | -2% | 39,399 | 25% |

Source: Population and household forecasts, 2016 to 2041, prepared by .id

Table 4. Forecast age structure – Service age groups Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston

| Age groups | Clarinda | | | | Clayton South | | | | Heatherton | | | | Oakleigh South | | | | Kingston | | | |
|------------------------------|----------|------|------|------|---------------|------|-------|------|------------|------|------|------|----------------|------|------|------|----------|------|--------|------|
| | 2016 | | 2041 | | 2016 | | 2041 | | 2016 | | 2041 | | 2016 | | 2041 | | 2016 | | 2041 | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Babies / pre-schoolers | 379 | 4.8 | 364 | 4.4 | 923 | 6.9 | 1108 | 6.35 | 187 | 6.1 | 187 | 5.8 | 249 | 5.7 | 217 | 5.0 | 9924 | 6.2 | 11281 | 5.7 |
| Primary | 548 | 6.9 | 500 | 6.1 | 885 | 6.6 | 1157 | 6.8 | 393 | 12.8 | 296 | 9.1 | 301 | 6.9 | 295 | 6.8 | 13334 | 8.4 | 15289 | 7.7 |
| Secondary | 424 | 5.4 | 435 | 5.3 | 667 | 5.0 | 931 | 5.5 | 241 | 7.9 | 242 | 7.5 | 279 | 6.4 | 253 | 5.9 | 10130 | 6.4 | 12632 | 6.4 |
| Tertiary | 809 | 10.3 | 741 | 9.0 | 1623 | 12.1 | 2000 | 11.8 | 259 | 8.5 | 275 | 8.5 | 396 | 9.0 | 330 | 7.7 | 13382 | 8.4 | 15886 | 8.0 |
| Young workforce | 1120 | 14.2 | 1173 | 14.3 | 3044 | 22.6 | 3551 | 20.9 | 298 | 9.7 | 300 | 9.2 | 574 | 13.1 | 504 | 11.7 | 21817 | 13.7 | 25899 | 13.1 |
| Parents / homebuilders | 1426 | 18.0 | 1465 | 17.8 | 2531 | 18.8 | 3436 | 20.3 | 799 | 26.1 | 666 | 20.5 | 894 | 20.4 | 812 | 18.8 | 35273 | 22.2 | 40840 | 20.6 |
| Older workers / pre-retirees | 1071 | 13.6 | 943 | 11.5 | 1238 | 9.2 | 1657 | 9.8 | 360 | 11.8 | 410 | 12.6 | 590 | 13.4 | 528 | 12.2 | 20072 | 12.6 | 24460 | 12.3 |
| Empty nesters / retirees | 1025 | 12.9 | 916 | 11.2 | 1152 | 8.6 | 1361 | 8.0 | 283 | 9.2 | 364 | 11.2 | 563 | 12.8 | 523 | 12.1 | 16384 | 10.3 | 21199 | 10.7 |
| Seniors | 867 | 10.9 | 1249 | 15.2 | 1192 | 8.9 | 1496 | 8.8 | 148 | 4.8 | 399 | 12.3 | 481 | 11 | 673 | 15.6 | 14602 | 9.2 | 23944 | 12.1 |
| Elderly | 222 | 2.8 | 426 | 5.2 | 192 | 1.4 | 268 | 1.6 | 94 | 3.1 | 109 | 3.3 | 63 | 1.4 | 175 | 4.1 | 4105 | 2.6 | 6911 | 3.5 |
| Total persons | 7891 | 100 | 8212 | 100 | 13447 | 100 | 16966 | 100 | 3062 | 100 | 3248 | 100 | 4390 | 100 | 4311 | 100 | 159023 | 100 | 198340 | 100 |

Source: Population and household forecasts, 2016 to 2041, prepared by .id

3. Disability

There are potentially 5,137 people who have a disability living in Clarinda, Clayton South, Heatherton, Oakleigh South. Of these there are less people who need help with their daily activities due to a disability (501), of which the majority are aged over 60 years old.

3.1 Total population of people with a disability

The Survey of Disability, Ageing and Carers³ found that 17.7% of the Australian population had a disability in 2018.

Applying this to the 2016 population numbers for Clarinda (7,776), Clayton South (14,222), Heatherton (3,003) and Oakleigh South (4,361) this potentially equates to 1,376 people living in Clarinda, 2,517 in Clayton South, 531 in Heatherton and 772 people living Oakleigh South with a disability – a total of 5,137 people.

3.2 Need for assistance with core activities⁴

In 2016 the total number of persons needing assistance due to a disability in Clarinda was 591 people (7.9% of the population) Clayton South was 722 people (5.7% of the population), Heatherton 123 people (4.2% of the population) and Oakleigh South 247 people (5.9% of the population). All were higher than Kingston except Heatherton, which is slightly lower than the Kingston percentage of 5% of the population needing assistance.

From age 60 years onwards, the proportion of population that reports to need assistance with core activities due to a disability increases significantly as people get older.

Table 5. Assistance needed by age groups Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016

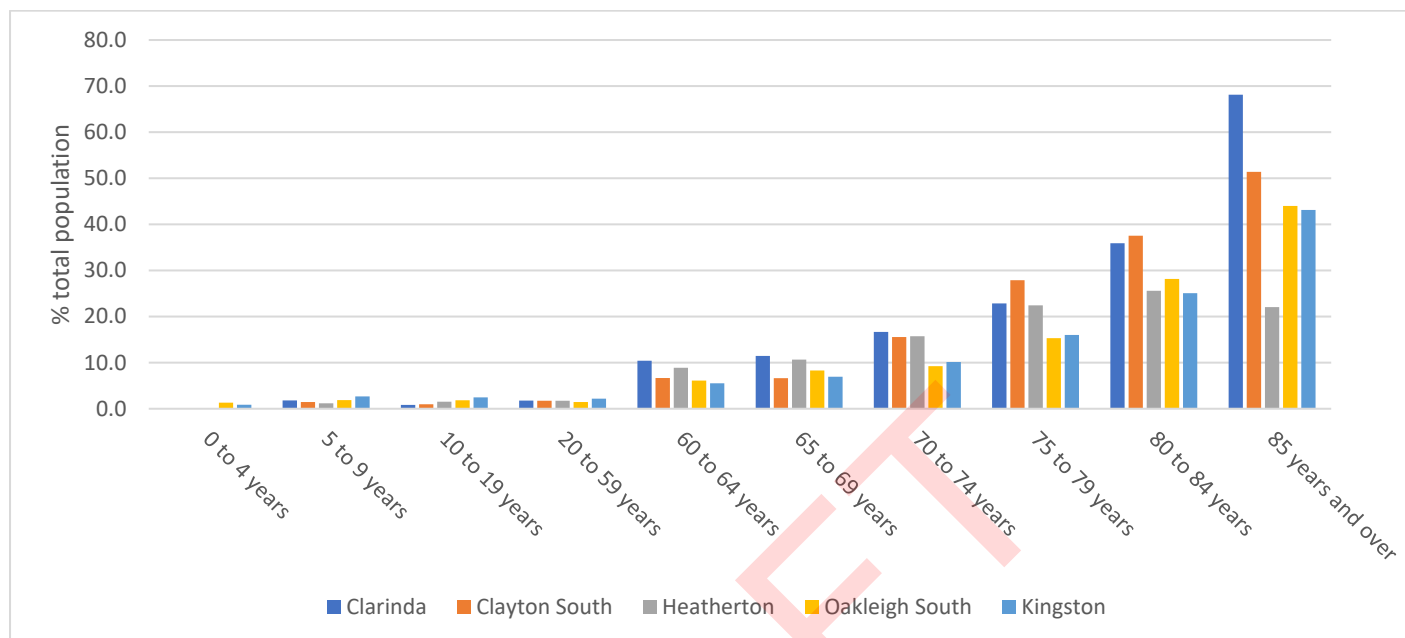
| Assistance needed by age group (years) | Clarinda | | Clayton South | | Heatherton | | Oakleigh South | | Kingston |
|---|----------|-------------|---------------|-------------|------------|-------------|----------------|-------------|-------------|
| | No. | % | No. | % | No. | % | No. | % | % |
| 0 to 4 | 0 | | 0 | | 0 | | 3 | 1.3 | 0.9 |
| 5 to 9 | 6 | 1.8 | 9 | 1.4 | 3 | 1.2 | 4 | 1.9 | 2.7 |
| 10 to 19 | 6 | 0.8 | 11 | 1.0 | 6 | 1.5 | 8 | 1.8 | 2.5 |
| 20 to 59 | 69 | 1.8 | 128 | 1.7 | 27 | 1.7 | 31 | 1.5 | 2.2 |
| 60 to 64 | 51 | 10.4 | 35 | 6.7 | 11 | 8.9 | 16 | 6.1 | 5.5 |
| 65 to 69 | 56 | 11.5 | 35 | 6.6 | 13 | 10.7 | 23 | 8.3 | 6.9 |
| 70 to 74 | 59 | 16.7 | 69 | 15.5 | 11 | 15.7 | 19 | 9.2 | 10.1 |
| 75 to 79 | 58 | 22.8 | 111 | 27.9 | 11 | 22.4 | 19 | 15.3 | 16.0 |
| 80 to 84 | 74 | 35.9 | 107 | 37.5 | 11 | 25.6 | 29 | 28.2 | 25.1 |
| 85 and over | 124 | 68.1 | 73 | 51.4 | 15 | 22.1 | 22 | 44.0 | 43.1 |
| Total persons needing assistance | 591 | 7.9 | 722 | 5.7 | 123 | 4.2 | 247 | 5.9 | 5.0 |

Bold indicates age group with highest proportion of population

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016

Due to changes in ABS rules concerning perturbation and additivity of data to protect the confidentiality of individuals in 2016, counts of individual age groups with a need for assistance in 2016 may not add up to the table total. The table total is independently calculated and will be closer to the true population requiring assistance. Due to ABS adjustments of small numbers, no reliability can be placed on small data cells in 2016. For more information please see the data notes on Data Confidentiality.

Figure 2. % population needing assistance due to a disability, Clarinda, Clayton South, Heatherton and Oakleigh South compared to Kingston 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

4. Birthplace and language

The suburbs in this profile have the most multicultural populations in Kingston. In 2016, over half of people in Clarinda (50.7%) and Clayton South (63.6%) were born overseas, compared with 31% in City of Kingston. While Oakleigh South (42.6%) and Heatherton had less than half (36.2%) of people born overseas in 2016, the proportions of people born overseas were still larger than Kingston's.

The largest change in birthplace countries of the populations in the four areas between 2011 and 2016 was increases in people born in India and China.

Clayton South had a notable increase in the number of people who spoke Mandarin at home between 2011 and 2016. This increased by 322 to a total of 1,088 people (8.6%) speaking Mandarin in Clayton South.

4.1 Birthplace summary⁵

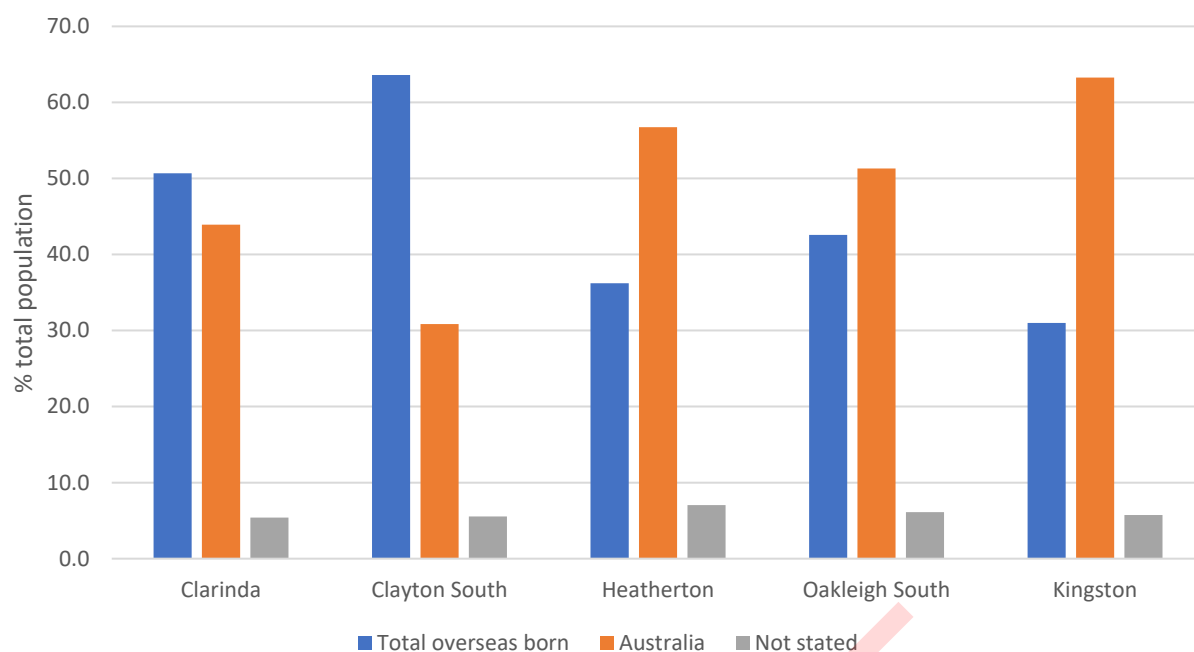
All areas had a higher proportion of the population born overseas than Kingston (31%) in 2016.

Table 4. Birthplace of residents Clarinda, Clayton South, Heatherton and Oakleigh South and Kingston, 2016

| Place of birth | Clarinda | Clayton South | Heatherton | Oakleigh South | City of Kingston |
|------------------|----------|---------------|------------|----------------|------------------|
| Australia | 44% | 31% | 58% | 51% | 63% |
| Overseas | 51% | 64% | 36% | 43% | 31% |

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

Figure 3. Birthplace of residents Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

Top 3 overseas birthplaces

The top countries of birth of people born overseas in 2016 in Clarinda, Clayton South, Heatherton and Oakleigh South were from non-English speaking backgrounds. These countries were India in Clarinda and Clayton South, China in Heatherton and Greece in Oakleigh South. Whereas the United Kingdom was the top overseas country of birth for Kingston in 2016.

Clarinda, Clayton South and Oakleigh South had a greater proportion of residents from India (9.2%, 14.6% and 5.7% respectively) than Kingston (3.4%).

Clayton South, Heatherton and Oakleigh South had a greater proportion of residents from China (8.1%, 5% and 3.2% respectively) than Kingston (2.8%).

Table 6. Top 5 overseas birthplaces Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016

| Clarinda | | Clayton South | | Heatherton | | Oakleigh South | | City of Kingston | |
|----------|---------------|---------------|-----------------|----------------|---------------|----------------|---------------|------------------|----------------|
| India | 688 (9.2%) | India | 1849 (14.6%) | China | 144 (5%) | Greece | 251 (6%) | United Kingdom | 7471 (4.9%) |
| Greece | 466 (6.2%) | China | 1020 (8.1%) | United Kingdom | 123 (4.2%) | India | 239 (5.7%) | India | 5114 (3.4%) |
| Cambodia | 254 (3.4%) | Greece | 711 (5.6%) | South Africa | 86 (3%) | China | 133 (3.2%) | China | 4122 (2.7%) |
| China | 244 (3.3%) | Vietnam | 561 (4.4%) | India | 60 (2.1%) | Italy | 96 (2.3%) | Greece | 2893 (1.9%) |
| Vietnam | 221 (3.0%) | Sri Lanka | 366 (2.9%) | Philippines | 55 (1.9%) | Philippines | 81 (1.9%) | New Zealand | 2405 (1.6%) |

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

4.2 Languages spoken at home (excluding English)⁶

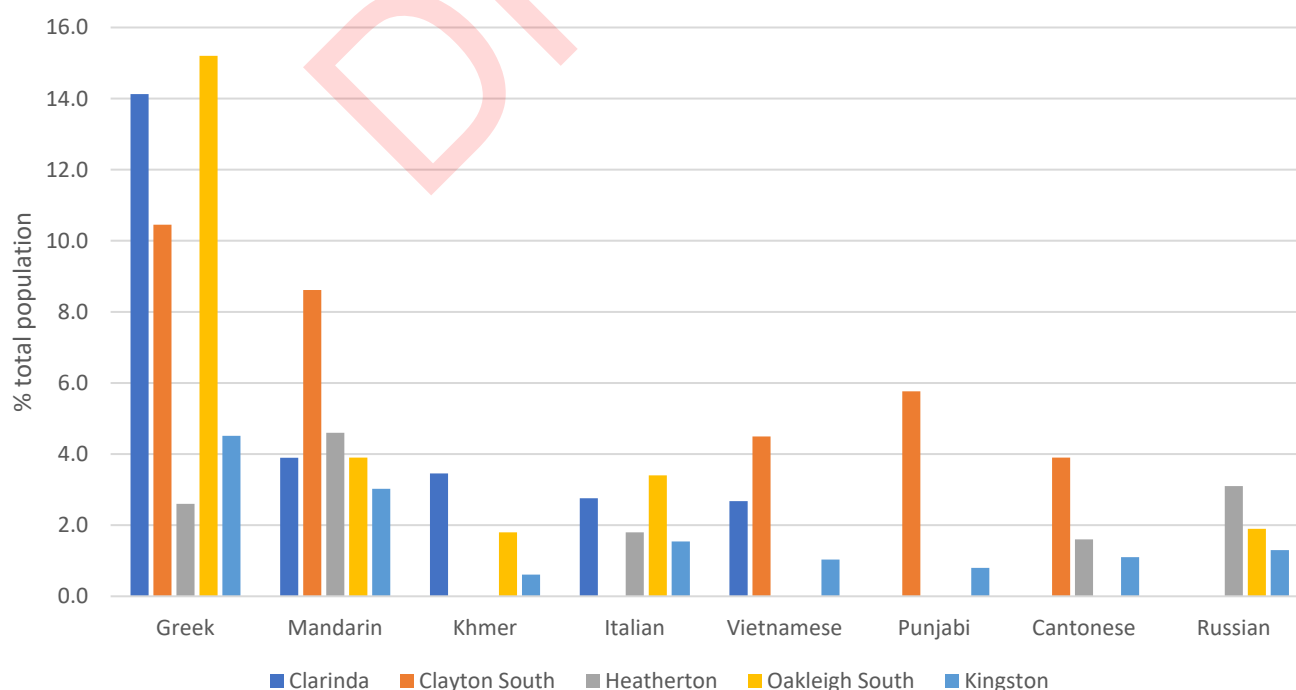
In 2016, the language most commonly spoken at home, after English, in Clarinda, Clayton South, Oakleigh South and across Kingston was Greek (14.1%, 10.5%, 15.2% and 4.5% respectively). Other than English, Mandarin was the most common language spoken at home in Heatherton (4.6%). Clarinda, Clayton South and Oakleigh South also had a higher portion of the population that spoke Mandarin at home (3.9%, 8.6% and 3.9% respectively) than Kingston (3%).

Table 7. Top 5 languages spoken at home Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016

| Clarinda | Clayton South | Heatherton | Oakleigh South | City of Kingston |
|-------------------|-------------------|------------------|-----------------|------------------|
| Greek (14.1%) | Greek (10.5%) | Mandarin (4.6%) | Greek (15.2%) | Greek (4.5%) |
| Mandarin (3.9%) | Mandarin (8.6%) | Russian (3.1%) | Mandarin (3.9%) | Mandarin (3.0%) |
| Khmer (3.5%) | Punjabi (5.8%) | Greek (2.6%) | Italian (3.4%) | Italian (1.5%) |
| Italian (2.8%) | Vietnamese (4.5%) | Italian (1.8%) | Russian (1.9%) | Russian (1.3%) |
| Vietnamese (2.7%) | Cantonese (3.9%) | Cantonese (1.6%) | Khmer (1.8%) | Cantonese (1.1%) |

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

Figure 3. Languages spoken at home Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

5. Households and income

The dominant households in the four suburbs of this profile are families – couples with children and one parent families. They all have larger proportions of households of couples with children and one parent families than the Kingston average.

Lone person households are forecast to have the greatest increase for all areas from 2016 to 2036, but not to the same extent as Kingston.

There are more households in Clayton South earning in the lowest income quartile than Clarinda, Oakleigh South, Heatherton and Kingston. Heatherton has more households in the highest income quartiles than Kingston.

5.1 Household type⁷

Families are the most common household type in Clarinda, Clayton South, Heatherton and Oakleigh South. All profile areas have larger proportions of households of couples with children and one parent families, and less people living alone than Kingston.

The most prominent type of household in each area is couples with children which makes up over one-third of all household types.

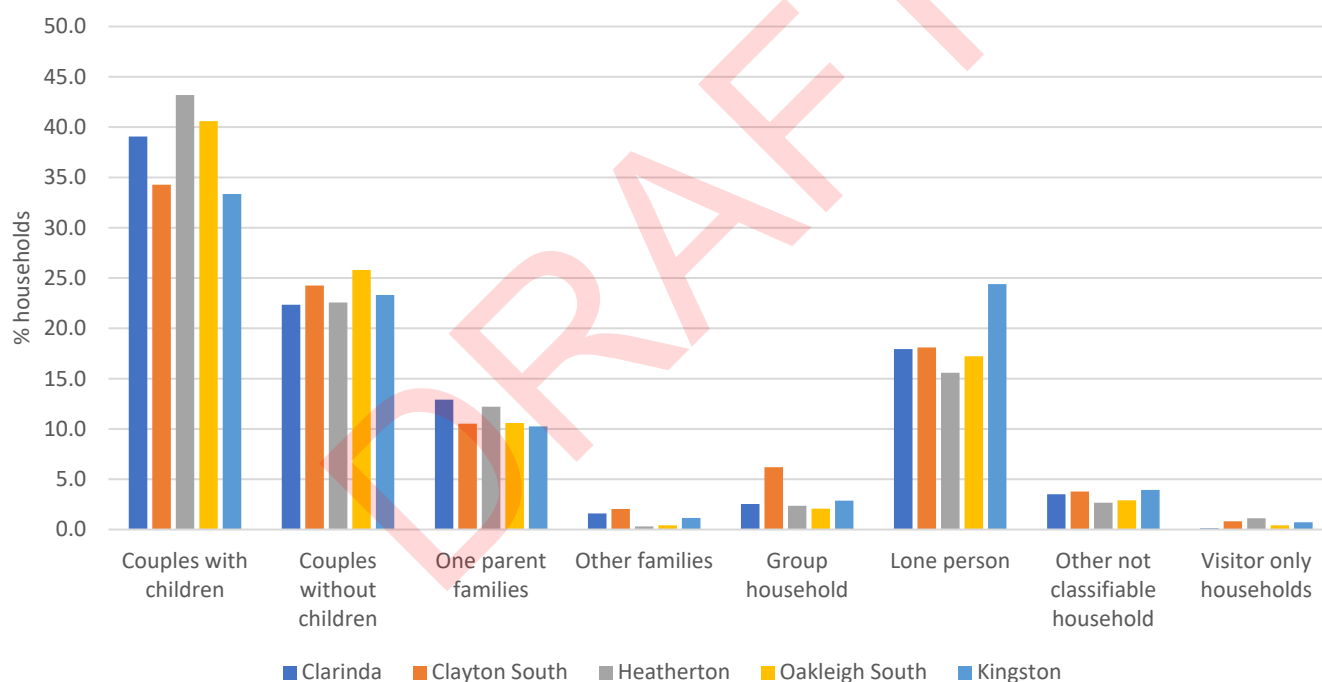
DRAFT

Table 8. Household types Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016

| | Clarinda | | Clayton South | | Heatherton | | Oakleigh South | | Kingston | |
|----------------------------------|--------------|--------------|---------------|--------------|------------|--------------|----------------|--------------|--------------|--------------|
| Household type | No. | % | No. | % | No. | % | No. | % | No. | % |
| Couples with children | 1,002 | 39.1 | 1,542 | 34.3 | 421 | 43.2 | 587 | 40.6 | 19608 | 33.4 |
| Couples without children | 573 | 22.3 | 1,091 | 24.3 | 220 | 22.6 | 373 | 25.8 | 13706 | 23.3 |
| One parent families | 331 | 12.9 | 473 | 10.5 | 119 | 12.2 | 153 | 10.6 | 6030 | 10.3 |
| Other families | 41 | 1.6 | 92 | 2.0 | 3 | 0.3 | 6 | 0.4 | 678 | 1.2 |
| Group household | 65 | 2.5 | 279 | 6.2 | 23 | 2.4 | 30 | 2.1 | 1690 | 2.9 |
| Lone person | 460 | 17.9 | 814 | 18.1 | 152 | 15.6 | 249 | 17.2 | 14337 | 24.4 |
| Other not classifiable household | 90 | 3.5 | 170 | 3.8 | 26 | 2.7 | 42 | 2.9 | 2311 | 3.9 |
| Visitor only households | 3 | 0.1 | 37 | 0.8 | 11 | 1.1 | 6 | 0.4 | 422 | 0.7 |
| Total households | 2,565 | 100.0 | 4,498 | 100.0 | 975 | 100.0 | 1,446 | 100.0 | 48782 | 100.0 |

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

Figure 4. Household types Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

Household type forecast change

In 2020, the dominant household type in the City of Kingston was couples with children. By 2041 the largest forecast increase is expected in lone person households.

Lone person households are forecast to increase the most out of all household types from 2016 to 2041 in Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston.

Couples without dependents households are also forecast to increase in Clarinda, Heatherton, Oakleigh South and Kingston.

Table 9. Household types forecast changes from 2020 to 2041 Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston

| Household type | Clarinda | | | | Clayton South | | | | Heatherton | | | | Oakleigh South | | | | Kingston | | | |
|---------------------------------|----------|------|------|------|---------------|------|------|------|------------|------|------|------|----------------|------|------|------|----------|------|--------|------|
| | 2020 | | 2041 | | 2020 | | 2041 | | 2020 | | 2041 | | 2020 | | 2041 | | 2020 | | 2041 | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Couple families with dependents | 1003 | 36.8 | 996 | 33.1 | 1714 | 33.3 | 2125 | 33.2 | 427 | 46.0 | 421 | 42.2 | 601 | 42.0 | 566 | 40.4 | 21819 | 32.4 | 25,054 | 30.7 |
| Couples without dependents | 641 | 23.5 | 764 | 25.4 | 1184 | 24.5 | 1439 | 24.5 | 241 | 24.4 | 322 | 26.4 | 403 | 24.7 | 455 | 24.3 | 16096 | 25.5 | 20767 | 25.6 |
| Group households | 74 | 2.7 | 79 | 2.6 | 334 | 6.5 | 401 | 6.2 | 27 | 2.0 | 29 | 1.7 | 37 | 1.8 | 37 | 1.8 | 1980 | 3.1 | 2434 | 3.1 |
| Lone person households | 568 | 20.9 | 742 | 24.6 | 921 | 19.1 | 1268 | 19.5 | 168 | 16.1 | 222 | 18.8 | 301 | 17.8 | 417 | 19.3 | 16952 | 27.0 | 22,487 | 28.8 |
| One parent family | 309 | 11.3 | 309 | 10.3 | 483 | 10.9 | 633 | 11.1 | 136 | 10.0 | 146 | 9.4 | 150 | 9.9 | 136 | 10.3 | 6376 | 9.8 | 7768 | 9.6 |
| Other families | 128 | 4.7 | 122 | 4.1 | 286 | 5.6 | 333 | 5.5 | 20 | 1.5 | 18 | 1.5 | 52 | 3.7 | 46 | 3.8 | 1642 | 2.2 | 1937 | 2.2 |

Source: Population and household forecasts, 2020 to 2041, prepared by .id

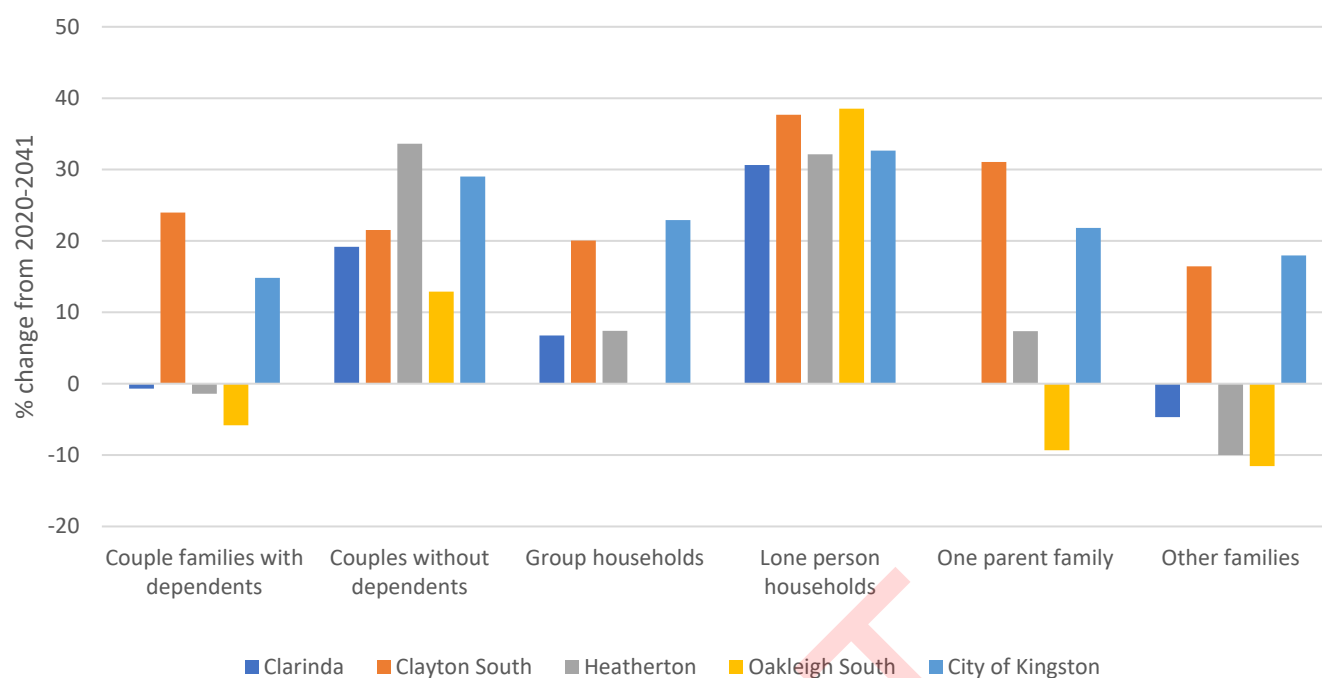
Table 10. Household types forecast changes between 2020 to 2041 Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston

Bold indicates household type with greatest change

| Household type | Change between 2020 and 2041 | | | | | | | | | |
|---------------------------------|------------------------------|-------------|---------------|-------------|------------|-------------|----------------|-------------|-------------|-------------|
| | Clarinda | | Clayton South | | Heatherton | | Oakleigh South | | Kingston | |
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| Couple families with dependents | -7 | -1% | 411 | +24% | -6 | -1% | -35 | -6% | 3235 | +15% |
| Couples without dependents | 123 | +19% | 255 | +22% | 81 | +34% | 52 | +13% | 4671 | +29% |
| Group households | 5 | +7% | 67 | +20% | 2 | +7% | 0 | 0% | 454 | +23% |
| Lone person households | 174 | +31% | 347 | +38% | 54 | +32% | 116 | +39% | 5535 | +33% |
| One parent family | 0 | 0% | 150 | +31% | 10 | +7% | -14 | -9% | 1392 | +22% |
| Other families | -6 | -5% | 47 | +16% | -2 | -10% | -6 | -12% | 295 | +18% |

Source: Population and household forecasts, 2020 to 2041, prepared by .id

Figure 5. Forecast change household types Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston 2020 to 2041



Source: Population and household forecasts, 2020 to 2041

5.2 Household income⁸

Household income can be presented in quartiles as an objective way of looking at the data and comparing areas.

There are more households in Clayton South earning in the lowest income quartile than Clarinda, Oakleigh South, Heatherton and Kingston. Heatherton has more households in the highest income quartiles than Kingston.

The distribution of households by income quartile in Clayton South compared to the City of Kingston shows that there was a lower proportion of households in the highest income quartile (16.8% and 28.3% respectively) and a greater proportion in the lowest income quartile (27.4% and 23% respectively). Whereas Heatherton had a greater proportion of households in the highest income quartile (34.8%) and a lower proportion in the lowest income quartile (14.1%) compared to Kingston.

Table 11. Household income quartiles Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016

| Quartile group | Clarinda | | Clayton South | | Heatherton | | Oakleigh South | | Kingston | |
|----------------|----------|------|---------------|------|------------|------|----------------|------|----------|------|
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| Lowest group | 545 | 25.5 | 1055 | 27.4 | 119 | 14.1 | 287 | 24.4 | 11731 | 23.0 |
| Medium lowest | 555 | 26.0 | 1101 | 28.6 | 202 | 24.0 | 295 | 25.1 | 12008 | 23.5 |
| Medium highest | 570 | 26.7 | 1046 | 27.2 | 228 | 27.1 | 295 | 25.1 | 12822 | 25.1 |
| Highest group | 468 | 21.9 | 647 | 16.8 | 294 | 34.8 | 300 | 25.5 | 14458 | 28.3 |
| Total | 2140 | 100 | 3852 | 100 | 845 | 100 | 1180 | 100 | 51021 | 100 |

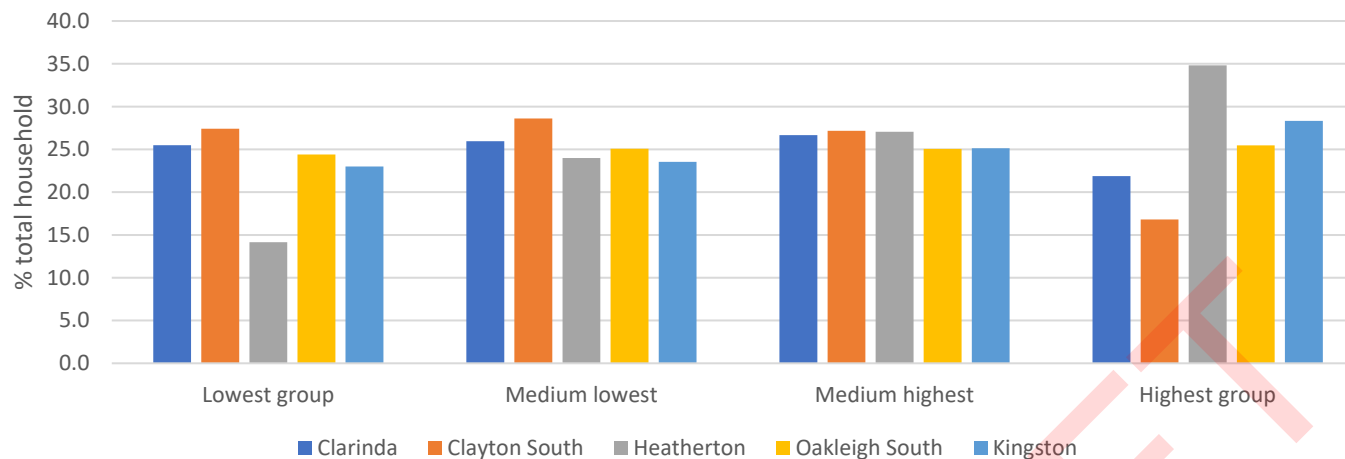
Source: Australian Bureau of Statistics, Census of Population and Housing 2016.

Table 12. Household income quartile ranges, 2016

| | |
|----------------|--------------------|
| Lowest group | \$0 to \$740 |
| Medium lowest | \$741 to \$1,416 |
| Medium highest | \$1,417 to \$2,394 |
| Highest group | \$2,395 and over |

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

Figure 6. Household income quartiles Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2016.

5.3 Internet connection⁹

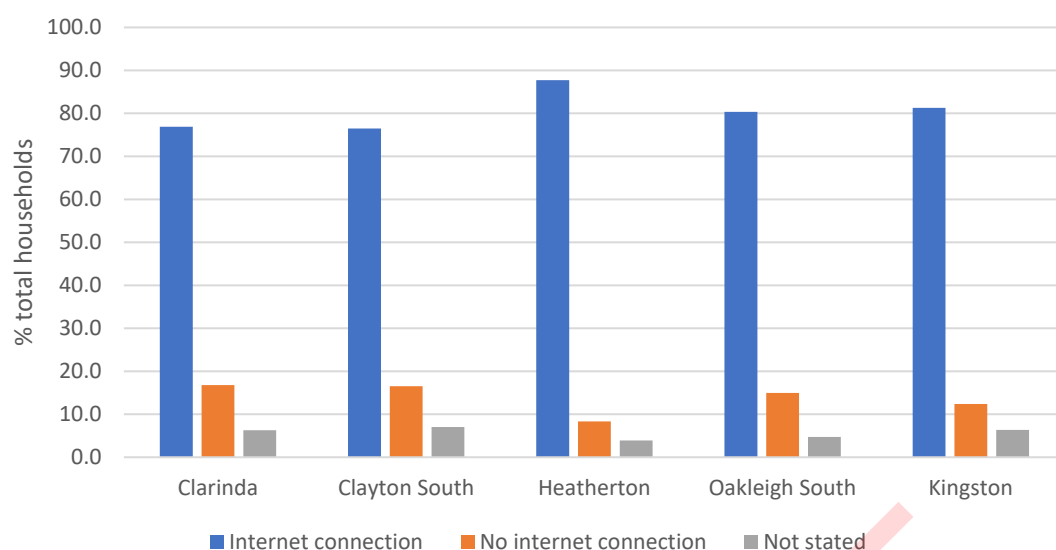
Households in Clayton South, Clarinda and Oakleigh South had a lower proportion of households with an internet connection compared to City of Kingston in 2016. Overall 76.5% of households in Clayton South, 76.9% in Clarinda and 80.3% in Oakleigh South had an internet connection, compared with 81.3% in City of Kingston. A greater proportion of households in Heatherton had an internet connection (87.7%) than Kingston.

Table 13. Internet connection Clarinda, Clayton South, Heatherton, Oakleigh South, Kingston 2011 and 2016

| | Clarinda | | | | Clayton South | | | | Heatherton | | | | Oakleigh South | | | | Kingston | | | |
|------------------------|----------|------|------|------|---------------|------|------|------|------------|------|------|------|----------------|------|------|------|----------|------|-------|------|
| | 2011 | | 2016 | | 2011 | | 2016 | | 2011 | | 2016 | | 2011 | | 2016 | | 2011 | | 2016 | |
| Connection type | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Internet connection | 1803 | 71.9 | 2001 | 76.9 | 2870 | 69.1 | 3453 | 76.5 | 754 | 84.6 | 851 | 87.7 | 1094 | 74.7 | 1177 | 81.3 | 41544 | 75.1 | 47759 | 81.3 |
| No internet connection | 533 | 21.3 | 437 | 16.8 | 950 | 22.9 | 746 | 16.5 | 90 | 10.1 | 81 | 8.4 | 285 | 19.5 | 219 | 12.4 | 10317 | 18.6 | 7280 | 12.4 |
| Not stated | 170 | 6.8 | 164 | 6.3 | 333 | 8.0 | 317 | 7.0 | 47 | 5.3 | 38 | 3.9 | 85 | 5.8 | 69 | 6.3 | 3460 | 6.3 | 3729 | 6.3 |
| Total households | 1803 | 100 | 2602 | 100 | 4153 | 100 | 4516 | 100 | 891 | 100 | 970 | 100 | 1464 | 100 | 1465 | 100 | 55321 | 100 | 58768 | 100 |

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

Figure 7. Internet connection Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

6. Car ownership¹⁰

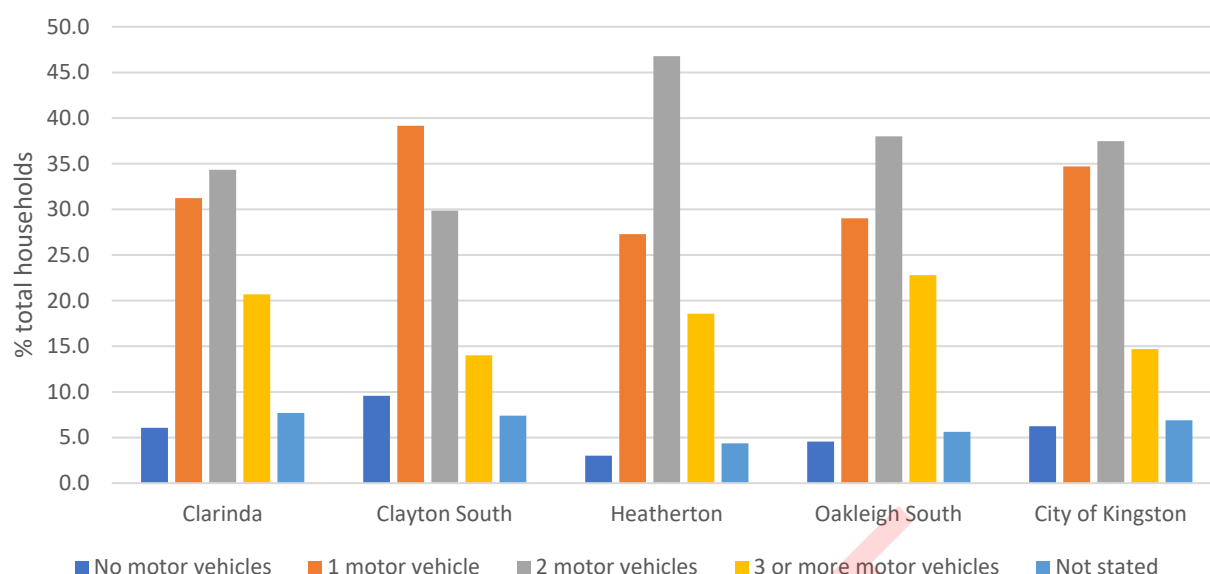
A greater proportion of households in Clayton South only have one car or no vehicle compared to the other areas in this profile and Kingston. Households in Clarinda, Heatherton and Oakleigh South are more likely to have two or more cars than in Clayton South and across Kingston.

Table 14. car ownership in Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016

| | Clarinda | | Clayton South | | Heatherton | | Oakleigh South | | Kingston | |
|---------------------------------|-------------|--------------|---------------|--------------|--------------|------------|----------------|-------------|--------------|--------------|
| Number of cars | No. | % | No. | % | No. | % | No. | % | No. | % |
| No motor vehicles | 156 | 6.1 | 428 | 9.6 | 29 | 3.0 | 68 | 4.6 | 3688 | 6.2 |
| 1 motor vehicle | 803 | 31.2 | 1750 | 39.1 | 263 | 27.3 | 433 | 29.0 | 20397 | 34.7 |
| 2 motor vehicles | 883 | 34.3 | 1335 | 29.9 | 451 | 46.8 | 567 | 38.0 | 22022 | 37.5 |
| 3 or more motor vehicles | 532 | 20.7 | 626 | 14.0 | 179 | 18.6 | 340 | 22.8 | 8631 | 14.7 |
| Not stated | 198 | 7.7 | 331 | 7.4 | 42 | 4.4 | 84 | 5.6 | 4053 | 6.9 |
| Total vehicles | 2572 | 100.0 | 4470 | 100.0 | 100.0 | 964 | 100.0 | 1492 | 58771 | 100.0 |

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016

Table 15. Car ownership Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016

7. Education and employment

Most of the labour force in the profile areas were employed in 2016. The highest unemployment rate was in Clayton South (9.1%) followed by Clarinda (6.8%). Heatherton and Oakleigh South had similar unemployment rates as Kingston with 5.4%, 5.7% and 5.4% respectively. The unemployment rates have not been adjusted to reflect the impact of COVID-19, however JobSeeker data provides some insight into the increase in unemployment across Kingston during 2020.

7.1 School attendance¹¹

In 2016, a greater proportion of children in Heatherton attended both primary (11.4%) and secondary schools (7.7%) than in Clarinda, Clayton South, Oakleigh South and Kingston.

In Heatherton a greater proportion of children attended government primary schools (7.5%) than Catholic or independent schools. A greater proportion of children in Heatherton also attended government secondary school (4.6%), unlike in Clarinda and Oakleigh South with a greater proportion attending secondary Catholic than government secondary school.

In 2016 a greater proportion of the population in Clarinda (6.1%) and Clayton South (9.2%) attended university than Kingston (4.7%).

Table 16. Proportion of the population education institution attending Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston, 2016

| School type | Clarinda % | Clayton South % | Heatherton % | Oakleigh South % | Kingston % |
|-------------------------|------------|-----------------|--------------|------------------|------------|
| Pre-school | 1.0 | 1.5 | 2.3 | 1.7 | 1.7 |
| Primary school | 6.3 | 6.2 | 11.4 | 6.6 | 8 |
| Primary - Government | 3.6 | 3.9 | 7.5 | 4.4 | 5.1 |
| Primary - Catholic | 2.4 | 1.8 | 2.2 | 1.9 | 2.2 |
| Primary - Independent | 0.3 | 0.5 | 1.7 | 0.4 | 0.6 |
| Secondary school | 5.1 | 4.3 | 7.7 | 6.2 | 5.9 |
| Secondary - Government | 3.0 | 2.9 | 4.6 | 3.8 | 3.2 |
| Secondary - Catholic | 2.0 | 1.2 | 1.6 | 2.1 | 1.7 |
| Secondary - Independent | 0.2 | 0.3 | 1.4 | 0.4 | 1 |
| TAFE | 1.7 | 2.5 | 2.2 | 1.6 | 1.7 |
| University | 6.1 | 9.2 | 3.5 | 4.6 | 4.7 |
| Other | 1.0 | 1.7 | 1.4 | 0.9 | 0.9 |

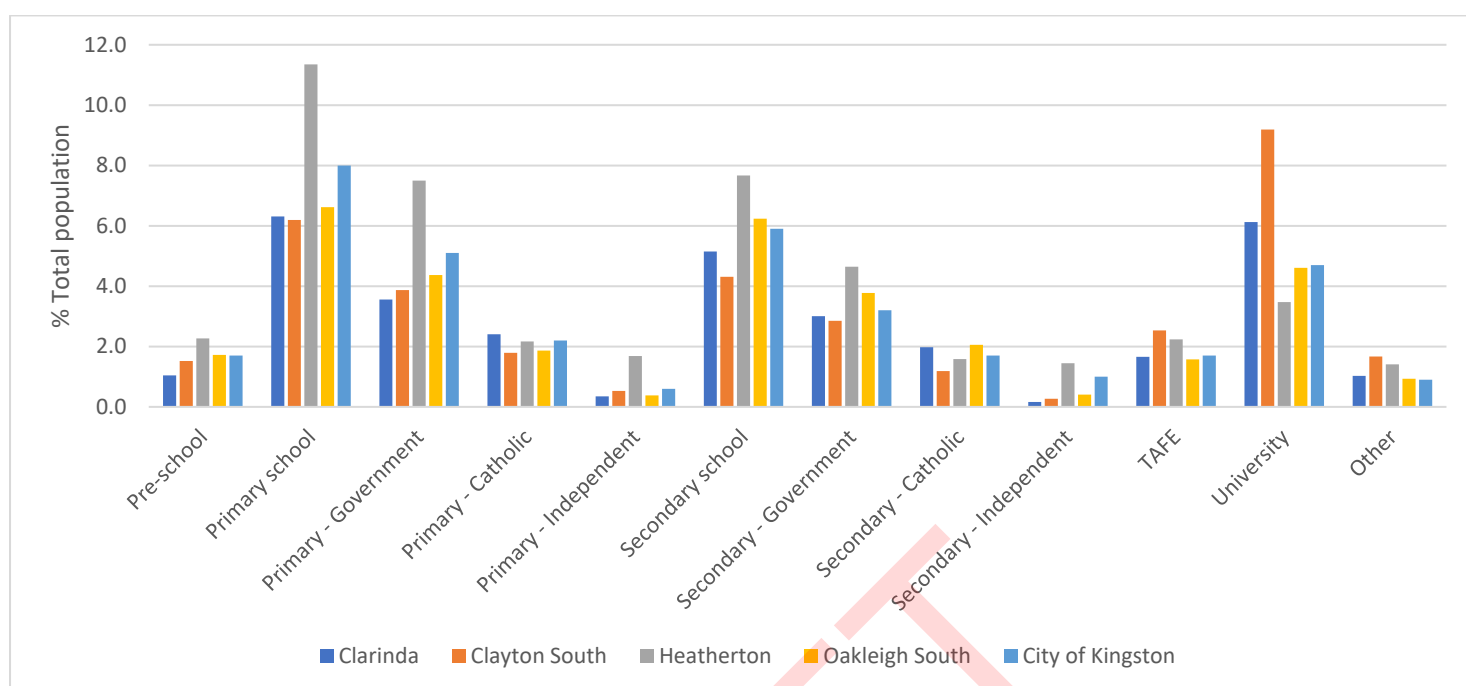
Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016

Table 17. Number of children attending primary school and secondary school government / Catholic & independent Clarinda, Clayton South, Heatherton, Oakleigh South, 2016

| School type | Clarinda no. | Clayton South no. | Heatherton no. | Oakleigh South no. |
|---|--------------|-------------------|----------------|--------------------|
| Primary – Government | 266 | 489 | 218 | 183 |
| Primary – Catholic & Independent | 206 | 293 | 112 | 94 |
| Secondary – Government | 225 | 360 | 135 | 158 |
| Secondary – Catholic & Independent | 160 | 184 | 88 | 103 |

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016

Figure 8. Current education attendance Clarinda, Clayton South, Heatherton, Oakleigh South and Kingston 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

7.2 Unemployment - JobSeeker¹²

COVID-19 has made an impact on people being able to work and the unemployment rate. The April Labour Force¹³ data shows an increase in the unemployment rate for Australia from 5.2% in March 2020 to 6.2% in April 2020.

This represents the number of people who are eligible recipients of JobSeeker allowance (generally aged 22+) and youth allowance (excluding students, generally aged 21 and under). To be eligible for JobSeeker, participants must be unemployed and looking for work. Jobseeker rates can provide an indication of which areas are most affected by the impacts of COVID-19 containment measures.

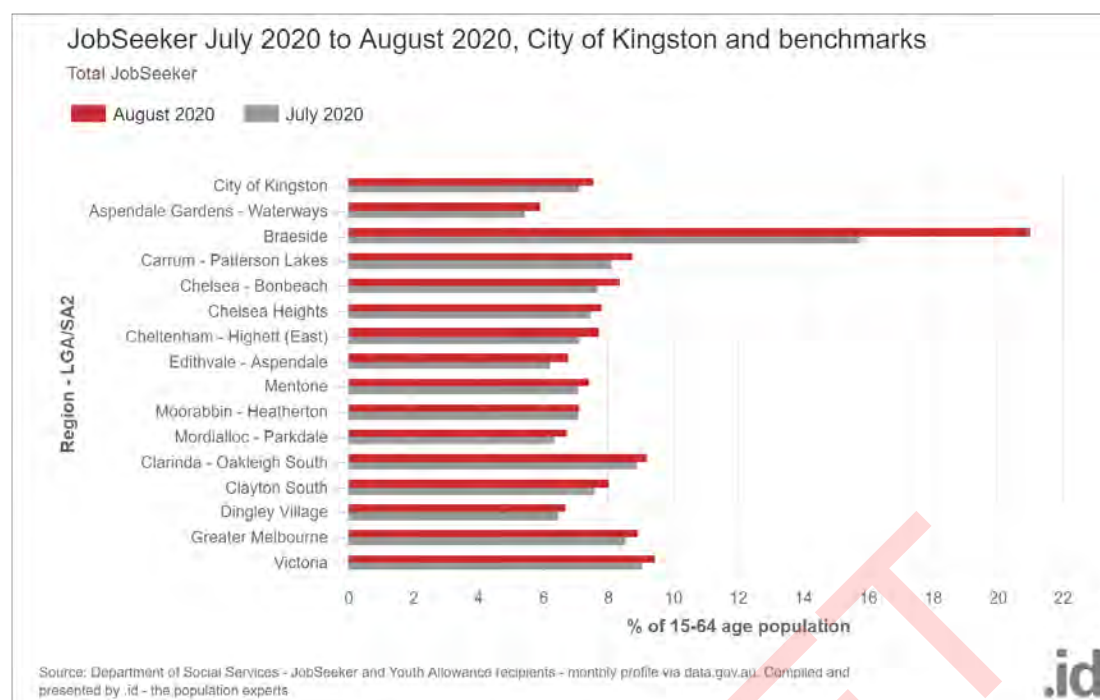
Clarinda-Oakleigh South had the greatest proportion of its 15-64 year old population (9.2%) on JobSeeker in August, compared to Clayton South (8.0%) and Moorabbin-Heatherton (7.2%). As a comparison, Kingston's JobSeeker rate was 7.6% in August and Greater Melbourne was 9.0%.

Table 18. Number and percentage of Jobseeker and youth allowance recipients, August 2020

| Area (SA2) | JobSeeker and youth allowance recipients no. | % of 15-64 age population |
|---------------------------|--|---------------------------|
| Clarinda - Oakleigh South | 725 | 9.2 |
| Clayton South | 801 | 8.0 |
| Moorabbin- Heatherton | 459 | 7.2 |
| City of Kingston | 8,217 | 7.6 |
| Greater Melbourne | 309,128 | 9.0 |

Source: id profile, Department of Social Services - JobSeeker and Youth Allowance recipients - monthly profile via data.gov.au

Figure 9. JobSeeker and Youth Allowance recipients August 2020



7.3 Unemployment¹⁴ - JobKeeper

Data for the provision of the JobKeeper payment is provided by the Australian Treasury¹⁵ as postcode data by the number of processed JobKeeper applications per organisation – not where the recipient lives. The areas relevant for this profile are postcodes 3169 Clarinda / Clayton South, 3202 Heatherton and 3167 Oakleigh South (part of which is in Monash Council).

The JobKeeper Payment scheme is a temporary subsidy for businesses significantly impacted by COVID-19 to continue paying their staff wages.

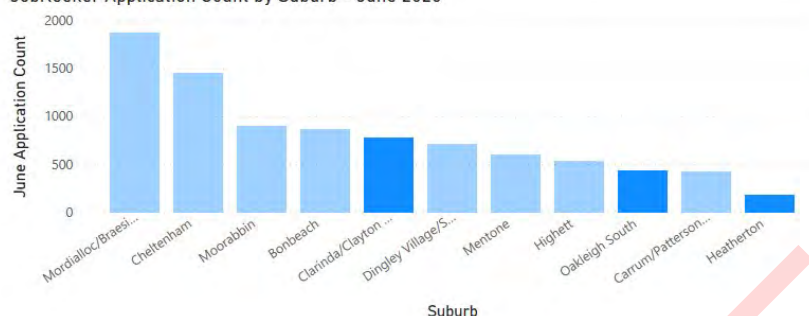
In June 2020, JobKeeper applications in Clarinda / Clayton South, Heatherton and Oakleigh South were mid-range or at the lower end when compared to all Kingston postcode areas.

Image 1. JobKeeper applications in Kingston

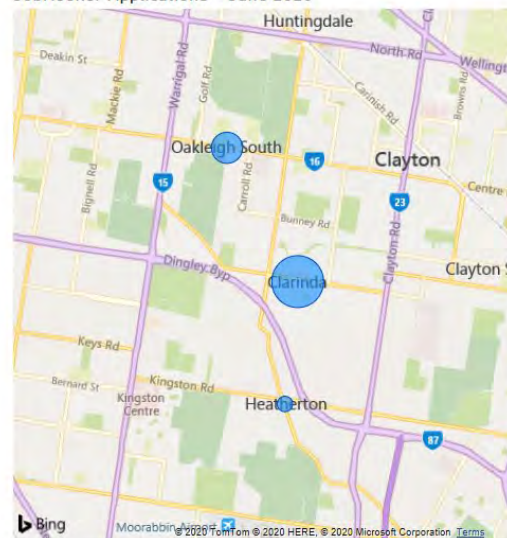
JobKeeper Applications in Kingston

| Suburb | Postcode | April Application Count | May Application Count | June Application Count |
|----------------------------------|----------|-------------------------|-----------------------|------------------------|
| Mordialloc/Braeside | 3195 | 1726 | 1837 | 1872 |
| Cheltenham | 3192 | 1326 | 1420 | 1458 |
| Moorabbin | 3189 | 837 | 888 | 906 |
| Bonbeach | 3196 | 788 | 843 | 874 |
| Clarinda/Clayton South | 3169 | 714 | 762 | 785 |
| Dingley Village/Springvale South | 3172 | 656 | 692 | 714 |
| Mentone | 3194 | 557 | 595 | 608 |
| Highett | 3190 | 489 | 524 | 542 |
| Oakleigh South | 3167 | 405 | 431 | 443 |
| Carrum/Patterson Lakes | 3197 | 395 | 409 | 425 |
| Heatherton | 3202 | 174 | 183 | 185 |
| Total | | 8067 | 8584 | 8812 |

JobKeeper Application Count by Suburb - June 2020



JobKeeper Applications - June 2020



Please note.

Count = number of processed JobKeeper applications per organisation (business or not for profit organisation)
The number of eligible employees are not included
The numbers are not cumulative

Data from <https://treasury.gov.au/coronavirus/jobkeeper/data> as at 1 September 2020

Source: City of Kingston - Internal Council PowerBI dashboard

Taylor Fry¹⁶ has used business survey data on JobKeeper with the most recent Australian Census to estimate and map where people receiving JobKeeper are most likely to live. Postcodes with the highest proportion of residents receiving JobKeeper are coloured red, and postcodes with the least proportion are coloured green.

The heat map illustrates the relative reliance on the JobKeeper Payment for each postcode in Australia. The higher the score, the greater the proportion of its residents are likely to be receiving the Payment:

- The 0 – 10 decile (darkest green) is the 10% of Australian postcodes (weighted by population) likely to have the lowest proportion of its resident receiving the Payment (importantly, it is not showing that 0-10% of its residents are receiving the payment).
- The 90 – 100 decile (darkest red) is the 10% of Australian postcodes (weighted by population) likely to have the highest proportion of its resident receiving the Payment (importantly, it is not showing that 90-100% of its residents are receiving the payment).

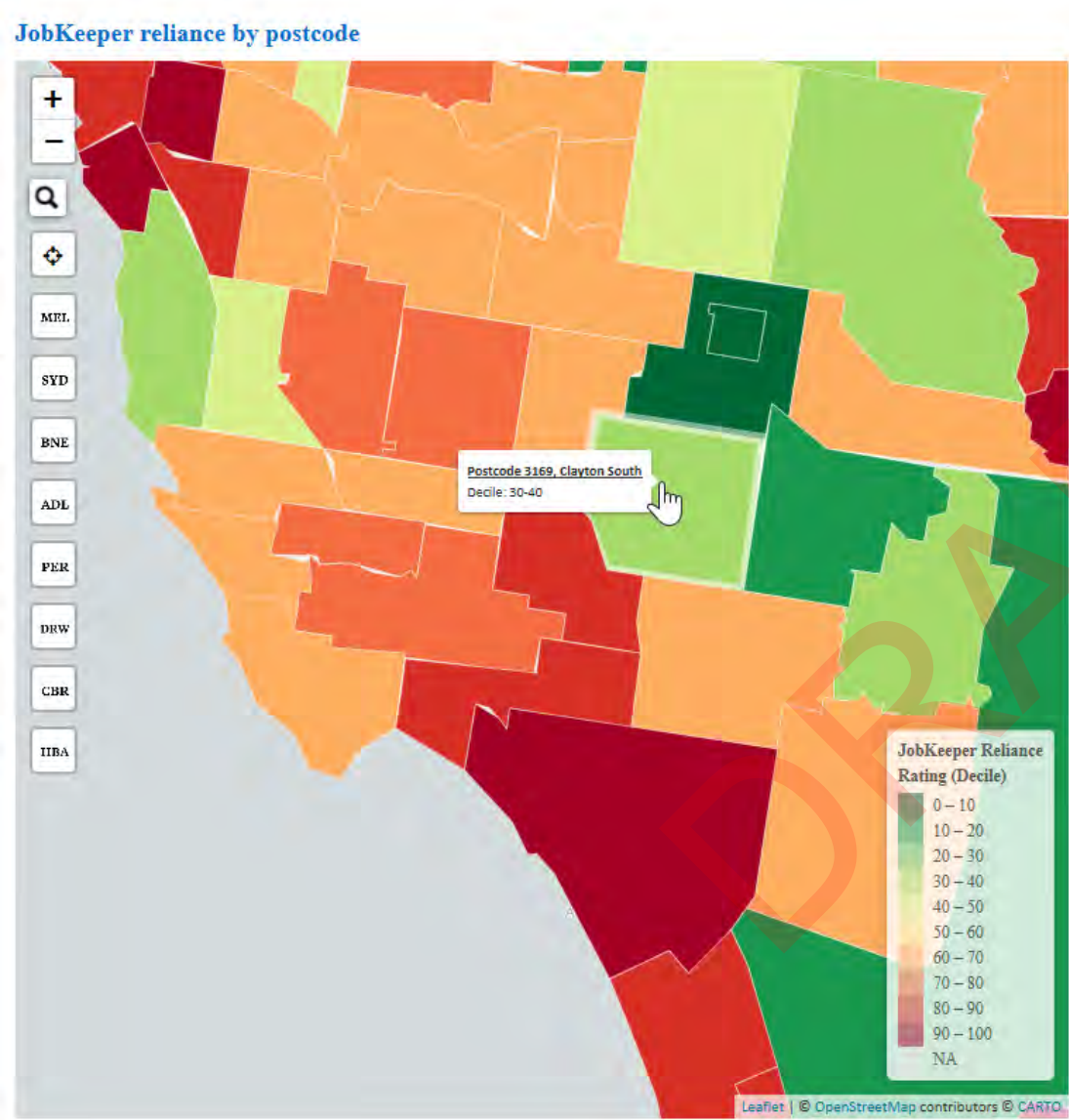
The data indicates that the highest proportion of residents receiving JobKeeper are likely to live in Heatherton (80-90th decile) followed by Oakleigh South (60-70th decile), with the lowest proportion of residents in Clarinda/Clayton South (30-40th decile).

Table 19. Jobkeeper decile estimation Clarinda, Clayton South, Oakleigh South and Heatherton

| Area | Decile |
|---|--------|
| 3169 – Clarinda / Clayton South | 30-40 |
| 3167 - Oakleigh South (split with Monash) | 60-70 |
| 3202 - Heatherton | 80-90 |

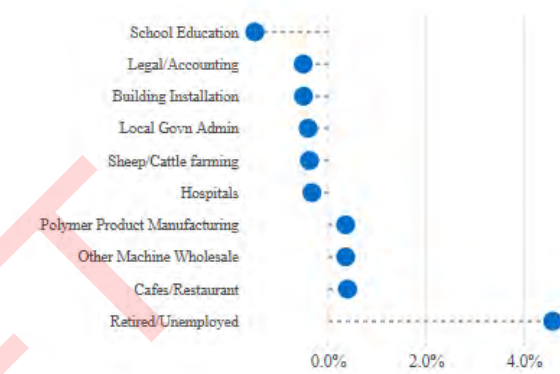
Source: Taylor Fry 2020, <https://taylorfry.com.au/articles/where-do-people-receiving-jobkeeper-live/>

Image 2. JobKeeper estimation by postcode 3169 – Clarinda / Clayton South



Postcode characteristics pre-COVID-19

Postcode 3169: Industry of employment, compared to the state average



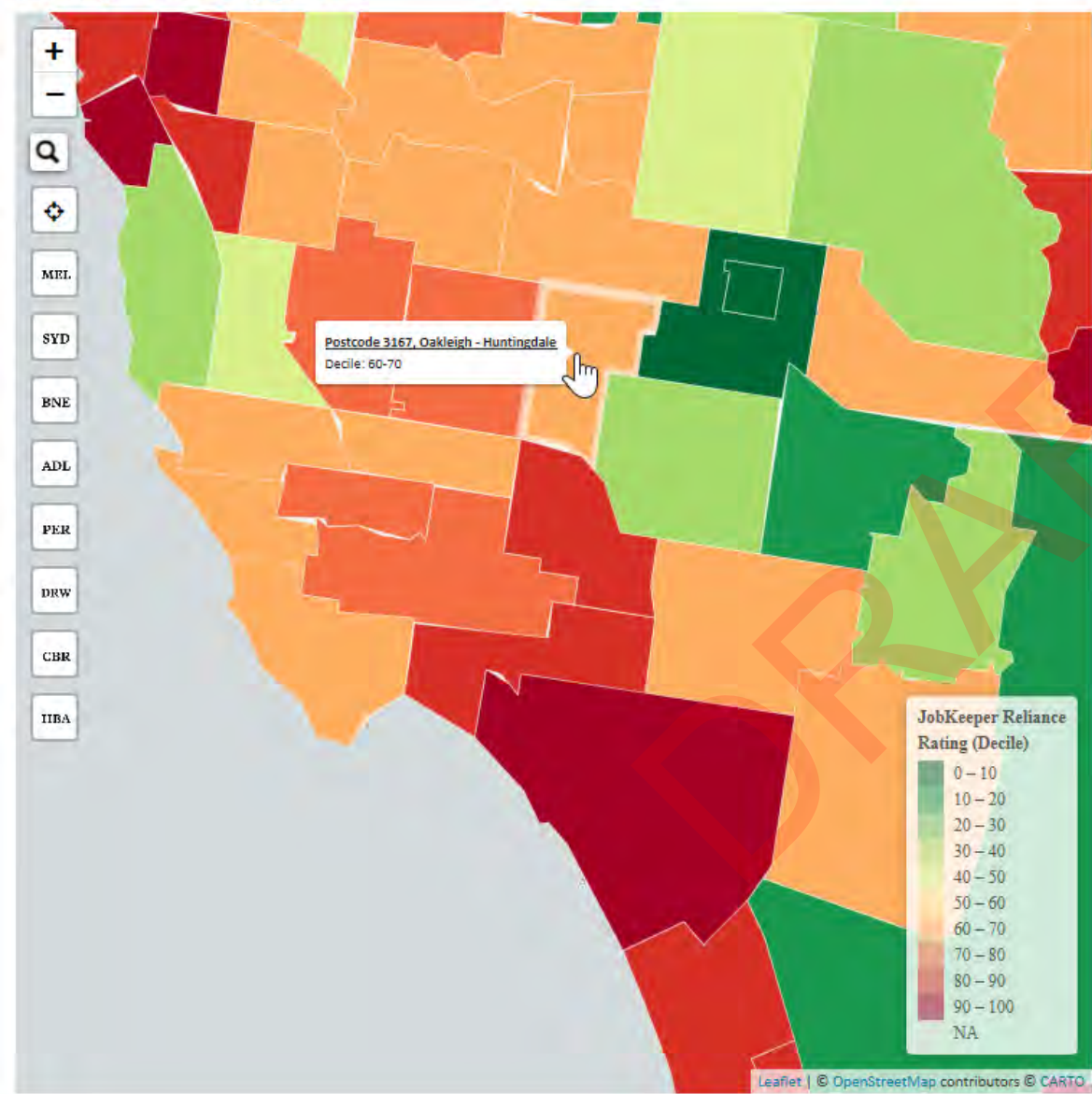
Postcode 3169: Income distribution, compared to the state average



Source: Taylor Fry 2020, <https://taylorfry.com.au/articles/where-do-people-receiving-jobkeeper-live/>

Image 3. JobKeeper estimation by postcode 3167 – Oakleigh South

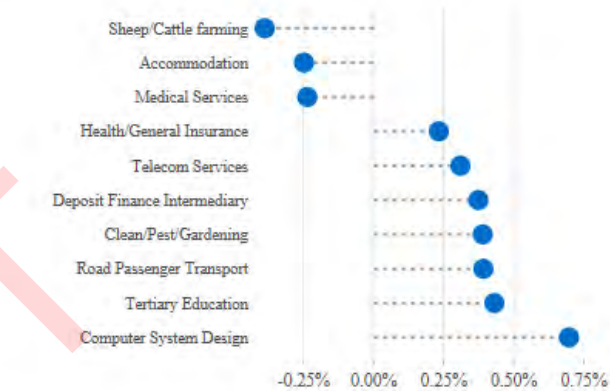
JobKeeper reliance by postcode



Source: Taylor Fry 2020, <https://taylorfry.com.au/articles/where-do-people-receiving-jobkeeper-live/>

Postcode characteristics pre-COVID-19

Postcode 3167: Industry of employment, compared to the state average



Postcode 3167: Income distribution, compared to the state average

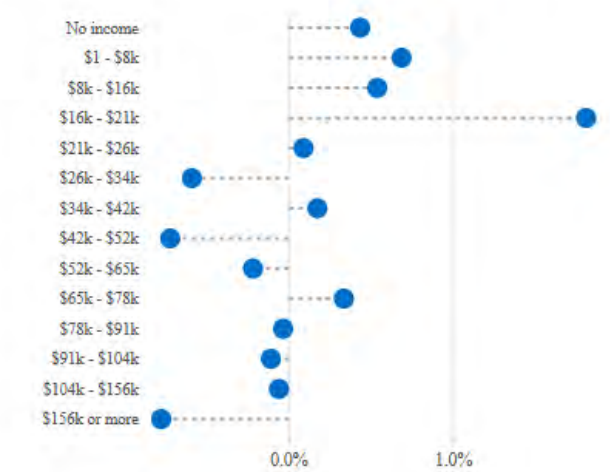
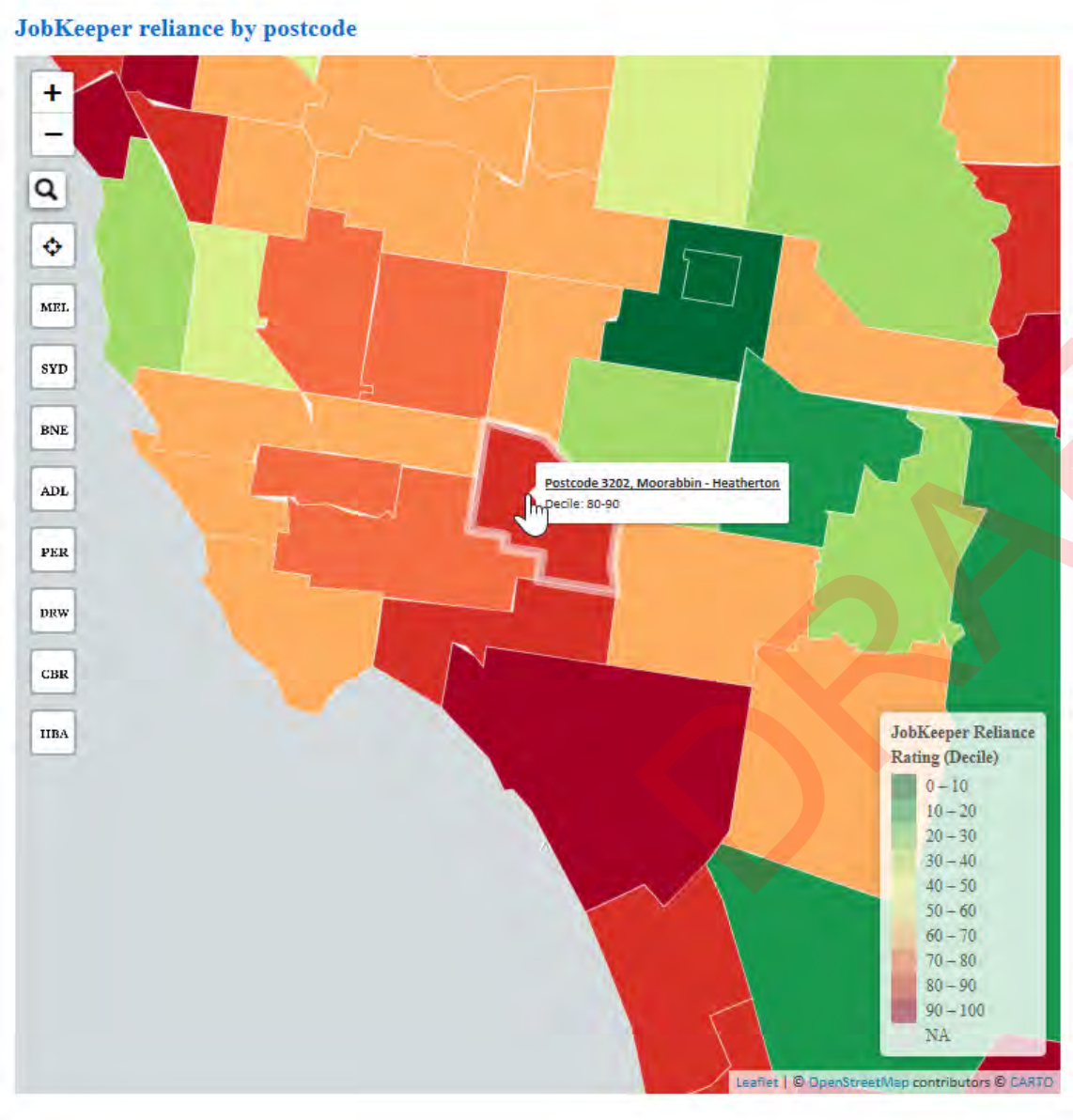
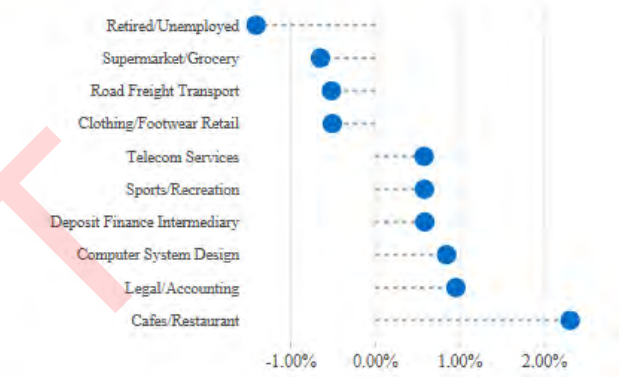


Image 4. JobKeeper estimation by postcode 3202 – Heatherton



Postcode characteristics pre-COVID-19

Postcode 3202: Industry of employment, compared to the state average



Postcode 3202: Income distribution, compared to the state average



Source: Taylor Fry 2020, <https://taylorfry.com.au/articles/where-do-people-receiving-jobkeeper-live/>

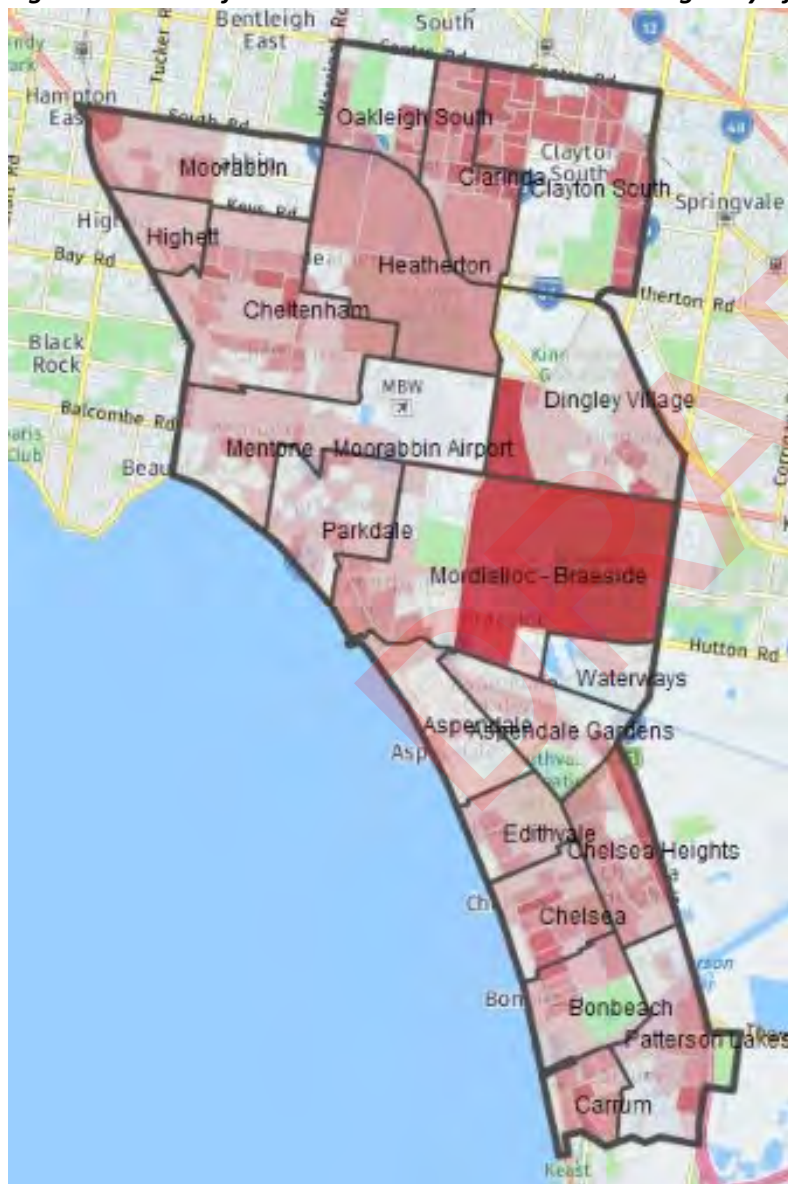
8. SEIFA Index of Socio-Economic Disadvantage

The Socio-Economic Indexes for Areas (SEIFA)¹⁷ ranks Australian areas according to relative socio-economic advantage and disadvantage. The indexes are based on a range of information from the Census.

A higher score on the index means a lower level of disadvantage on the Index of Relative Socio-Economic Disadvantage (IRSD). In 2016 the Clarinda score was 975.9, Clayton South 957.4, Heatherton 1060.5 and Oakleigh South 1020.3. This placed Clarinda in the 32nd percentile Clayton South in the 24th percentile and Oakleigh South in the 57th percentile of all areas in Australia. Heatherton was the highest in the 82nd percentile. In comparison Kingston scored 1044 (73rd percentile) and Greater Melbourne 1021 (57th percentile).

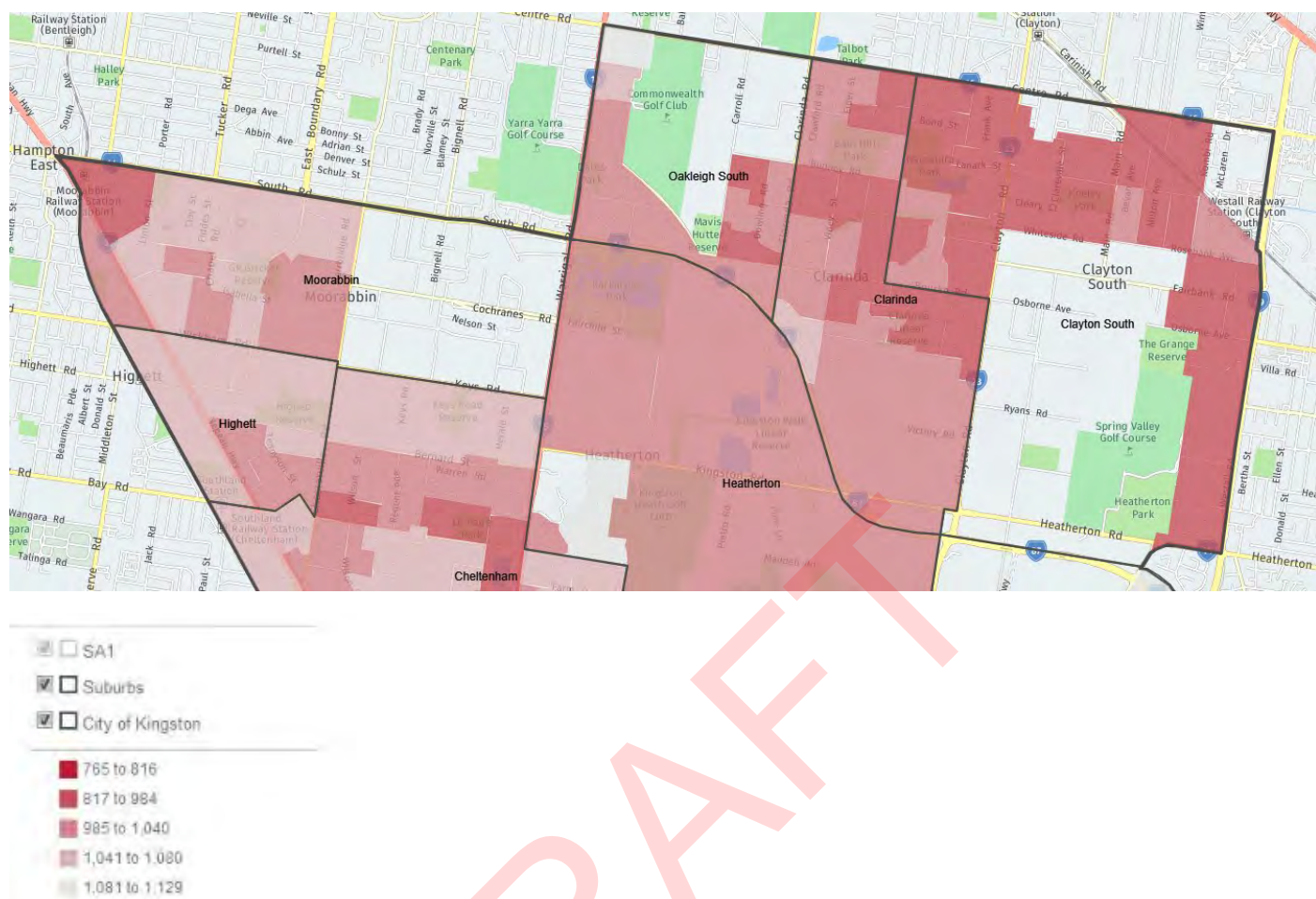
The Clayton South and Clarinda IRSD index scores are the lowest in the City of Kingston, as shown in the table and maps below, indicating they are the most disadvantaged areas in the City of Kingston.

Figure 10. Index of Relative Socio-Economic Disadvantage City of Kingston suburbs, 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2016.

Figure 11. Index of Relative Socio-Economic Disadvantage Clarinda, Clayton South, Heatherton, Oakleigh South, 2016



Source: Australian Bureau of Statistics, Census of Population and Housing 2016. Compiled and presented in atlas.id by .id

Table 20. Index of Relative Socio-Economic Disadvantage City of Kingston suburbs, 2016

Bold indicates profile areas

| Area | IRSED index score |
|-----------------------------|-------------------|
| Waterways | 1,107.6 |
| Aspendale | 1,093.3 |
| Aspendale Gardens | 1,081.1 |
| Parkdale | 1,077.2 |
| Dingley Village | 1,069.5 |
| Patterson Lakes | 1,067.4 |
| Mentone - Moorabbin Airport | 1,060.8 |
| Heatherton | 1,060.5 |
| Edithvale | 1,059.2 |
| Mordialloc - Braeside | 1,056.8 |
| Highett | 1,048.6 |
| Cheltenham | 1,047.3 |
| City of Kingston | 1,044.0 |
| Bonbeach | 1,041.6 |
| Moorabbin | 1,039.7 |
| Chelsea Heights | 1,039.1 |
| Chelsea | 1,025.0 |
| Greater Melbourne | 1,021.0 |
| Oakleigh South | 1,020.3 |
| Carrum | 1,016.6 |
| Clarinda | 975.9 |
| Clayton South | 957.4 |

Source: Australian Bureau of Statistics, Census of Population and Housing 2016.

9. Groups and organisations listed on My Community Life, Clarinda, Clayton South, Heatherton, Oakleigh South

Please contact the Social Development Team prior to contacting any groups listed below as some have not provided permission to be contacted.

| Name | Street Address | Suburb | Postcode | Category |
|---|-------------------------|----------|----------|--|
| Bao Minh Buddhist Centre | 321-323 Kingston Road | Clarinda | 3196 | Faith-Buddhism |
| Café Bazaar (Micare) | 58 Viney Street | Clarinda | 3169 | Multicultural-Older people |
| ChuChu Club Vietnamese Elderly Association | 31 Melaleuca Drive | Clarinda | 3168 | Multicultural-Older people |
| Clarinda & District Greek Senior Citizens Club Inc | 9 Eulinga Road | Clarinda | 3169 | Multicultural-Older people |
| Clarinda Baptist Church | 124 Bourke Road | Clarinda | 3169 | Faith-Baptist |
| Clarinda Clayworkers Inc | 31 Melaleuca Drive | Clarinda | 3169 | Arts and culture-Visual arts |
| Clarinda Community Centre - City of Kingston | 58B Viney Street | Clarinda | 3169 | Community centres/neighbourhood houses/activity hubs |
| Clarinda Presbyterian Church | 9 Eulinga Road | Clarinda | 3168 | Faith-Presbyterian |
| Clarinda Primary School | 1166 Centre Road | Clarinda | 3169 | Education-Primary school |
| Clarinda Tennis Club Inc. | 4-14 Crawford Road | Clarinda | 3169 | Sport-Tennis |
| Clarinda Women's Friendship Group | 24 Sundowner Avenue | Clarinda | 3169 | Interest Group-Women |
| Clayton Japanese Playgroup | 24 Sundowner Avenue | Clarinda | 3169 | Education-Playgroup |
| Cosenza Senior Citizens Club of Kingston | 58 Viney Street | Clarinda | 3169 | Multicultural-Older people |
| Greek Elderly Citizens Club of Clayton and District | 58 Viney Street | Clarinda | 3169 | Multicultural-Older people |
| Heatherton Christian College | 316-322 Kingston Rd | Clarinda | 3169 | Education-P-12 |
| Indian Friends and Family Association | 24 Sundowner Avenue | Clarinda | 3169 | Multicultural-No sub |
| Kingston Chinese Senior Citizens Club Inc. | 58 Viney Street | Clarinda | 3169 | Multicultural-Older people |
| Kingston City Church Emergency Resources | 316-322 Kingston Road | Clarinda | 3169 | Welfare/Support services |
| Kingston City Church | 316 - 322 Kingston Road | Clarinda | 3169 | Faith-Christian |
| Kingston Creative Studios Inc | 31 Melaleuca Drive | Clarinda | 3169 | Arts and culture-Visual arts |
| Lions Club of Clarinda | 58B Viney St | Clarinda | 3169 | Service clubs |

| Name | Street Address | Suburb | Postcode | Category |
|---|--------------------------------|---------------|----------|--|
| Melaleuca Activity Hub | 31 Melaleuca Drive | Clarinda | 3169 | Community centres/neighbourhood houses/activity hubs |
| Mythri | 31 Melaleuca Dr | Clarinda | 3169 | Multicultural |
| Pilipino Elderly Association of South East Region (PEASER) | 24 Sundowner Avenue | Clarinda | 3196 | Multicultural-Older people |
| Red Chamber Chinese Opera | 31 Melaleuca Drive | Clarinda | 3169 | Multicultural-Older people |
| Ryan Group Inc. | 24 Sundowner Avenue | Clarinda | 3169 | Multicultural |
| Speaking Made Easy Australia, Melbourne | 24 Jacobs Drive | Clarinda | 3169 | Interest Group-Women |
| Sundowner Community Centre | 24 Sundowner Avenue, | Clarinda | 3169 | Community centres/neighbourhood houses/activity hubs |
| Sundowner Kindergarten | 19-21 Jacobs drive | Clarinda | 3169 | Education-Kindergarten |
| Unified Filipino Elderly Association, Inc. (UFEA, Inc.) | Melaleuca | Clarinda | 3196 | Multicultural-Older people |
| Aaina Club Inc. | 25 McMillan Rd | Clayton South | 3169 | Multicultural-No sub |
| Clayton Bowls Club | 37A Springs Road | Clayton South | 3169 | Sport-Lawn Bowls |
| Clayton South Primary School | 539 Clayton Road | Clayton South | 3169 | Education-Primary school |
| FareShare | Clayton Rd | Clayton South | 3169 | Welfare/Support services |
| Food for Change Foundation | Cnr Clayton and Heatherton Rds | Clayton South | 3169 | Welfare/Support services |
| Friends of the Grange | 136 -176 Osborne Avenue | Clayton South | 3169 | Environment and Sustainability-Friends of |
| Futsal Community | 88 Rosebank Avenue | Clayton South | 3169 | Sport |
| Greek Seniors of Clayton | 10 Oaks Avenue | Clayton South | 3169 | Multicultural-Older people |
| Kingston Men's Shed Inc | 62A Main Rd, Keeley Park | Clayton South | 3169 | Men's shed |
| Melbourne Full Gospel Church | 157 Osbourne Avenue | Clayton South | 3169 | Faith-Christian |
| Oakleigh Go Kart Racing Club | Deals Road Reserve | Clayton South | 3169 | Sport – motor sport |
| Oakleigh Motorcycle Club | 1 Simpson Road | Clayton South | 3169 | Sport-Motor sport |
| Spring Valley Golf Club | 619 Heatherton Road | Clayton South | 3169 | Sport-Golf |
| St Andrew's Catholic | 76 Springs Road | Clayton South | 3169 | Faith-Catholic |
| St Andrew's Friendship Group | 76 Springs Road | Clayton South | 3169 | Interest Group-No sub |
| St Andrew's Playgroup | 96 Bunney Road | Clayton South | 3169 | Education-Playgroup |
| St Andrew's Primary School Clayton South | 96 Bunney Road | Clayton South | 3169 | Education-Primary school |
| St Vincent de Paul Society St Andrews Parish Conference(SVP main page exists) | 76 Springs Road | Clayton South | 3168 | Charity |

| Name | Street Address | Suburb | Postcode | Category |
|--|------------------------------------|----------------|----------|--|
| Victorian Malayalee Seniors Association Inc. | 137 Bourke Road | Clayton South | 3169 | Multicultural-Older people |
| Westall Community Hub | 35 Fairbank Road | Clayton South | 3169 | Community centres/neighbourhood houses/activity hubs |
| Westall Kindergarten | 35 Fairbank Road | Clayton South | 3169 | Education-Kindergarten |
| Westall Mosque, Masjid Westall | 130 Rosebank Avenue | Clayton South | 3169 | Faith-Islam |
| Westall Primary School | 22 Fairbank Road | Clayton South | 3169 | Education-Primary school |
| Westall Secondary College | 88-128 Rosebank Avenue | Clayton South | 3169 | Education-Secondary school |
| Westall Social Tennis Club | Corner Osborne Ave and Brandon Way | Clayton South | 3169 | Sport-Tennis |
| Wisdom Kids Chinese Learning Centre Playgroup | Unit 1, 14 - 26 Audsley Street | Clayton South | 3169 | Education-Playgroup |
| Yết Kiêu Sea Scouts | 62 Main Road | Clayton South | 3169 | Youth-Scouts |
| Zee Cheng Khor Moral Uplifting Society Inc. | Unit 1 | Clayton South | 3169 | Multicultural-No sub |
| Aspendale Gardens Senior Citizens of Kingston Inc. | 30-36 Ross Street | Heatherton | 3202 | Multicultural-Older people |
| CLOC MUSICAL THEATRE | 230 Kingston Road, | Heatherton | 3202 | Arts and culture-Performing arts |
| Friends of Karkarook Park inc | Fairchild Street | Heatherton | 3202 | |
| Heatherton Cricket Club | 32-54 Ross St | Heatherton | 3202 | Sport-Cricket |
| Heatherton-Dingley Uniting Church | Cnr Kingston and Old Dandenong Rds | Heatherton | 3202 | Faith-Uniting |
| Hellenic Community of Moorabbin Seniors Club | 57 Madden Road | Heatherton | 3202 | Multicultural-Older people |
| Italian Senior Citizens of Kingston La Baracca | 30-36 Ross Street | Heatherton | 3202 | Multicultural-Older people |
| Kingston Heath Ladies Probus Club Inc. | 30 Ross Street | Heatherton | 3202 | Older people-Probus |
| SUBUD Melbourne | 164 Elder Street South | Heatherton | 3202 | Faith |
| The Benevolent Association Of Nafpaktians | 2 - 18 Ross Street | Heatherton | 3202 | Multicultural |
| Oakleigh Little Athletics Centre | Talbot Avenue | Oakleigh South | 3167 | Sport-Athletics |
| Kingston District Netball Association | Warrigal Road | Oakleigh South | 3167 | Sport-Netball |
| South Oakleigh Wildlife Shelter | 23 Murumba Drive | Oakleigh South | 3167 | Animals-Animal shelter |
| Washington Drive Preschool | 3 Washington Drive | Oakleigh South | 3167 | Education-Pre-school |

10. Services and infrastructure from CASIMO, Clarinda, Clayton South, Heatherton, Oakleigh South

| No. | Name | Address | Suburb | Category |
|-----|--|------------------------|---------------|----------------------------------|
| 1 | Kindy Patch Clarinda | 1222 Centre Road | Clarinda | Child care |
| 2 | Heatherton Christian College | 316-332 Kingston Road | Clarinda | Primary school, secondary school |
| 3 | Achmore Lodge | 2-6 Melaleuca Drive | Clarinda | Aged care |
| 4 | Fronditha Clayton Aged Care | 94 Springs Road | Clarinda | Aged care |
| 5 | Melaleuca Activity Hub | 31 Melaleuca Drive | Clarinda | Community venue |
| 6 | Pottery Studio | 31 Melaleuca Drive | Clarinda | Art group |
| 7 | Clarinda Primary School | 1166 Centre Road | Clarinda | Primary school |
| 8 | Clarinda Manor | 21-25 Inverness Street | Clarinda | Aged care |
| 9 | Clarinda Library & Community Centre | 58-70 Viney Street | Clarinda | Community venue |
| 10 | Clarinda Library & Community Centre | 58-70 Viney Street | Clarinda | Library |
| 11 | Sundowner Kindergarten & Maternal and Child Health | 19-21 Jacobs Drive | Clarinda | Kindergarten |
| 12 | Sundowner Kindergarten & Maternal and Child Health | 19-21 Jacobs Drive | Clarinda | Maternal and Child Health |
| 13 | Sundowner Community Centre | 24 Sundowner Avenue | Clarinda | Community venue |
| 14 | St Andrews Catholic Primary School | 96 Bunney Road | Clarinda | Primary school |
| 15 | Bald Hill Park Playground | Inverness Street | Clarinda | Playground |
| 16 | Dalbeattie Drive Reserve Playground | 26 Dalbeattie Drive | Clarinda | Playground |
| 17 | Drushi Court Reserve Playground | Drushi Court | Clarinda | Playground |
| 18 | Hendon Court Reserve Playground | Hendon Court | Clarinda | Playground |
| 19 | Leonard Close Reserve Playground | Leonard Close | Clarinda | Playground |
| 20 | Bald Hill Park Toilets | Inverness Street | Clarinda | Public toilets |
| 21 | Central Bayside Community Health Services | 58 Viney Street | Clarinda | Health Services |
| 22 | Subud Melbourne | 164 Elder Street South | Clarinda | Church |
| 23 | Bao Minh Buddhist Centre | 321 - 323 Kingston Rd | Clarinda | Church |
| 24 | Clarinda Presbyterian Church | 9 Eulinga Road | Clarinda | Church |
| 25 | Kingston City Church | 316- 322 Kingston Road | Clarinda | Church |
| 26 | Clarinda Tennis Club | 4-14 Crawford Road | Clarinda | Pavilion, tennis |
| 27 | Church of the Three Heirachs | 44 Knight Street | Clayton | Church |
| 28 | Keeley Reserve (West) | 64 Main Road | Clayton South | Reserve |
| 29 | Keeley Reserve (East) | 64 Main Road | Clayton South | Reserve |
| 30 | Keeley Park West Pavilion | 29A Clarevale Street | Clayton South | Pavilion |
| 31 | Keeley Park East Pavilion | 29B Clarevale Street | Clayton South | Pavilion |

| No. | Name | Address | Suburb | Category |
|-----|---|------------------------|---------------|--------------------------|
| 32 | Namatjira Park Sports Pavilion | 1A Newport Road | Clayton South | Pavilion |
| 33 | Clayton Bowls Club | 37A Springs Road | Clayton South | Pavilion, bowls |
| 34 | Namatjira Park | 37A Springs Road | Clayton South | Reserve |
| 35 | Deals Road Reserve Motorcycle Clubhouse | 23-41 Simpson Road | Clayton South | Pavilion, |
| 36 | Clayton South Primary School | 539-541 Clayton Road | Clayton South | Primary school |
| 37 | Clayton South Kindergarten | 11-15 Narrumburn Road | Clayton South | Kindergarten |
| 38 | Young Einsteins ELC Clayton | 1 Milton Avenue | Clayton South | Childcare |
| 39 | Deals Road Reserve Pistol Clubhouse | 23-41 Simpson Road | Clayton South | Pavilion, shooting range |
| 40 | The Grange Reserve | 136 Osborne Ave | Clayton South | Reserve, playground |
| 41 | The Grange Reserve Soccer Pavilion | 176 Osborne Avenue | Clayton South | Pavilion, soccer |
| 42 | Westall Social Tennis Club (The Grange Reserve) | 136 Osborne Avenue | Clayton South | Pavilion, tennis |
| 43 | Westall Secondary College | 88-128 Rosebank Avenue | Clayton South | Secondary school |
| 44 | Westall Kindergarten | 35 Fairbank Road | Clayton South | Kindergarten |
| 45 | Westall Primary School | Fairbank Road | Clayton South | Primary school |
| 46 | Yet Kieu Sea Scouts Hall New | 64-72 Main Road | Clayton South | Scout hall |
| 47 | Bemboka Avenue Reserve Playground | Bemboka Ave | Clayton South | Playground |
| 48 | First Street Reserve Playground | First Street | Clayton South | Playground |
| 49 | Heatherton Park (Ireland Road) Playground | Ireland Road | Clayton South | Playground |
| 50 | Jacobs/Sundowner Playground | Sundowner Ave | Clayton South | Playground |
| 51 | Keely Park Playground | Main Road | Clayton South | Playground |
| 52 | Larado Place Reserve Playground | Larado place | Clayton South | Playground |
| 53 | Meppel Drive Reserve Playground | Meppel Drive | Clayton South | Playground |
| 54 | Namatjira Park Playground | Springs Road | Clayton South | Playground |
| 55 | Scott Avenue Reserve Playground | Scott Ave | Clayton South | Playground |
| 56 | Sheldon Place Reserve Playground | Sheldon Place | Clayton South | Playground |
| 57 | The Grange Reserve Playground | Osborne Ave | Clayton South | Playground |
| 58 | Warraweena Road Reserve Playground | Warraweena Road | Clayton South | Playground |
| 59 | Heatherton Park Toilets | Heatherton Road | Clayton South | Public toilets |
| 60 | Keeley Park | Main Rd | Clayton South | Reserve |
| 61 | Keeley Park | Main Road | Clayton South | Reserve |
| 62 | The Grange Reserve | Osbourne Ave | Clayton South | Reserve |
| 63 | Namatjira Reserve | Springs Road | Clayton South | Reserve |
| 64 | Rosebank Avenue Exceloo Toilet | Rosebank Ave | Clayton South | Public toilets |
| 65 | Scott Avenue Meeting Space | 9-13 Scott Avenue | Clayton South | Community venue |
| 66 | Westall Community Hub | 35 Fairbank Road | Clayton South | Community venue |

| No. | Name | Address | Suburb | Category |
|-----|--|--|----------------|-----------------------|
| 67 | Westall Community Hub | 35 Fairbank Road | Clayton South | Library |
| 68 | Westall Community Hub | 35 Fairbank Road | Clayton South | Maternal Child Health |
| 69 | Westall Mosque | 130 Rosebank Avenue | Clayton South | Church |
| 70 | Melbourne Full Gospel Church | 157 Osborne Avenue | Clayton South | Church |
| 71 | New Life Assembly of God (Westall Secondary College) | 88-128 Rosebank Avenue | Clayton South | Church |
| 72 | St Andrew's Catholic Parish | 76 Springs Rd | Clayton South | Church |
| 73 | St Spyridon Greek Orthodox Church | 40 Bevan Ave | Clayton South | Church |
| 74 | Starfish Early Learning Centre - Clayton South | 48 Kallay Street | Clayton South | Childcare |
| 75 | Discovery Tree Early Learning Centre | 543 Clayton Road | Clayton South | Childcare |
| 76 | Noriter Bilingual Early Learning | 478 Haughton Road | Clayton South | Childcare |
| 77 | Fareshare - Baguley Farm | 700 Clayton Road | Clayton South | Garden |
| 78 | Spring Valley Golf Club | 619 Heatherton Road | Clayton South | Golf course, private |
| 79 | Allambee Nursing Home Kingston Centre | 400 Warrigal Road | Heatherton | Aged care |
| 80 | Heatherton Recreation Reserve Italian Club | 2-54 Ross Street | Heatherton | Hall |
| 81 | Heatherton Reserve | 32-54 Ross Street | Heatherton | Reserve |
| 82 | Heatherton Recreation Reserve Sports Pavilion | 32-54 Ross Street | Heatherton | Pavilion |
| 8 | Barkers Street Trotting Track Stables 1 | Barkers Street | Heatherton | Reserve, horse riding |
| 84 | Riding for the Disabled | Barkers St | Heatherton | Reserve, horse riding |
| 85 | Pelican Child Care Heatherton | 16-20 Arco Lane | Heatherton | Childcare |
| 86 | A.G. Eastwood Hostel | 400 Warrigal Road | Heatherton | Aged care |
| 87 | Allambee Nursing Home | 376 Warrigal Road | Heatherton | Aged care |
| 88 | Henry Street Reserve Playground | Henry Street | Heatherton | Playground |
| 89 | St Georges Crescent Reserve Playground | St Georges Crescent | Heatherton | Playground |
| 90 | The Heath Estate Common Playground | Sunningdale Way | Heatherton | Playground |
| 91 | Christian Resource Centre | 316 Kingston Road | Heatherton | Church |
| 92 | Heatherton Christian College | 316 - 322 Kingston Road | Heatherton | Church |
| 93 | Heatherton-Dingley Uniting Church | Corner of Kingston Road and Old Dandenong Road | Heatherton | Church |
| 94 | Subud Melbourne | 164 Elder Street South | Heatherton | Church |
| 95 | Barkers Street changing places Toilets | Barkers Street | Heatherton | Toilets (not public) |
| 96 | Precious Cargo Heatherton | 67 Corporate Drive | Heatherton | Childcare |
| 97 | Kingston Heath Golf Club | Kingston Road | Heatherton | Golf course, private |
| 98 | Capital Golf Club | 2 Ross Street | Heatherton | Golf course, private |
| 99 | Dales Park | Warrigal Road | Oakleigh | Reserve |
| 100 | Goodstart Early Learning Centre Oakleigh South | 8 Moresby Street | Oakleigh South | Childcare |

| No. | Name | Address | Suburb | Category |
|-----|--------------------------------------|---------------------|----------------|----------------------|
| 101 | Dales Park Pavilion | 1A Washington Drive | Oakleigh South | Pavilion, netball |
| 102 | Washington Drive Pre School | 3 Washington Drive | Oakleigh South | Kindergarten |
| 103 | Dales Park Playground | Washington Drive | Oakleigh South | Playground |
| 104 | Dowling Road Reserve Playground | Dowling Road | Oakleigh South | Playground |
| 105 | Luain Ave Reserve Playground | Luain Ave | Oakleigh South | Playground |
| 106 | Mavis Hutter Reserve Playground | Carrol Road | Oakleigh South | Playground |
| 107 | Sherbrooke Ave Reserve Playground | Sherbrooke Ave | Oakleigh South | Playground |
| 108 | South Oakleigh Gospel Hall | 964 Centre Road | Oakleigh South | Church |
| 109 | Early Learning Centre Oakleigh South | 1066 Centre Rd | Oakleigh South | Childcare |
| 110 | Bright Beginnings Child Care Centre | 117-119 Gold Road | Oakleigh South | Childcare |
| 111 | Commonwealth Golf Club | Glennie Avenue | Oakleigh South | Golf course, private |

References

- ¹ id consulting 2020, based on ABS Census of Population and Housing 2016, <https://profile.id.com.au/kingston>
- ² .id consulting 2017, Population and household forecasts 2016 to 2036, <https://forecast.id.com.au/kingston>
- ³ ABS 2019, Disability, Ageing and Carers, Australia: Summary of Findings 2018, <https://www.abs.gov.au/ausstats/abs@.nsf/mf/4430.0>
- ⁴ .id consulting 2020, based on ABS Census of Population and Housing 2016, <https://profile.id.com.au/kingston>
- ⁵ .id consulting 2020, based on ABS Census of Population and Housing 2011 & 2016, <https://profile.id.com.au/kingston>
- ⁶ .id consulting 2020, based on ABS Census of Population and Housing 2011 & 2016, <https://profile.id.com.au/kingston>
- ⁷ id consulting 2020, based on ABS Census of Population and Housing 2016, <https://profile.id.com.au/kingston> & .id consulting 2017, Population and household forecasts 2016 to 2036, <https://forecast.id.com.au/kingston>
- ⁸ .id consulting 2020, based on ABS Census of Population and Housing 2016, <https://profile.id.com.au/kingston>
- ⁹ .id consulting 2020, based on ABS Census of Population and Housing 2016, <https://profile.id.com.au/kingston>
- ¹⁰ .id consulting 2020, based on ABS Census of Population and Housing 2016, <https://profile.id.com.au/kingston>
- ¹¹ .id consulting 2020, based on ABS Census of Population and Housing 2016, <https://profile.id.com.au/kingston>
- ¹² <https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia>
- ¹³ <https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/apr-2020>
- ¹⁴ <https://treasury.gov.au/coronavirus/jobkeeper>
- ¹⁵ <https://treasury.gov.au/coronavirus/jobkeeper>
- ¹⁶ Taylor Fry 2020, Where do people receiving JobKeeper live?, <https://taylorfry.com.au/articles/where-do-people-receiving-jobkeeper-live/>, viewed 12.10.20

appendix 4 – site assessment photos

DRAFT



Pavilion storage cases



Pavilion storage room (2)



Pavilion storage room (3)



Pavilion storage room (4)



Pavilion storage room



Pavilion umpires room



Pavilion umpires rooms



Residential boundary



Sports oval (2)



Sports pavilion carpark



Tennis court (2)



Tennis wall (2)



Tennis wall (3)



Wetlands (2)



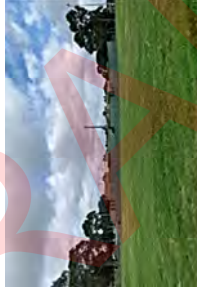
Pavilion external



Pavilion toilet



Pavilion shower (3)



Area adjacent to bowls club



Basketball key - board condition



Basketball key - layout



Basketball key - spatial area



BBQ shelter



BBQ



Bins



Bowls Club carpark



Bowls Club



Bridge and viewing platform



water fountain adjacent to tennis



Central carpark (2)



Central carpark



Council opening sign



Dog signage



Dog signage



Entrance # 8 - Merlyn Ave



Entrance #1 - Bond St



Entrance #2 - Bowls Club carpark entrance



Entrance #4 - Botany Ct



Entrance #5 - Botany Ct (pedestrian path)



Entrance #6 - Bunney Rd 2



Entrance #6 - Bunney Rd



Entrance #7 - Russ St 2



Entrance #7 - Russ St



Entrance #10



Entrance #3 - Raleigh St



Exercise equipment after market placement



Exercise equipment broken



Exercise equipment condition



Exercise equipment removed 2



Exercise equipment removed



Exercise equipment replacement



Exercise equipment signage



Exercise equipment



Former cricket practice wickets



Melbourne water drain (2)



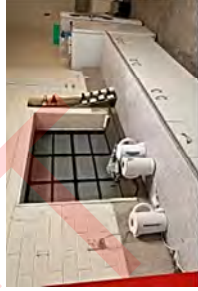
Pavilion disabled toilet



Pavilion entrance



Pavilion external storage



Pavilion kitchen (2)



Pavilion kitchen (3)



Pavilion kitchen access



Pavilion kitchen storage (2)



Pavilion kitchen storage



Pavilion kitchen



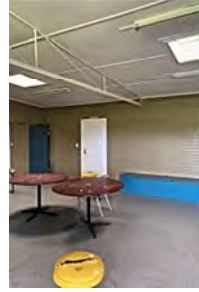
Pavilion mens toilets



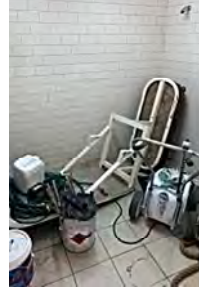
Pavilion rooms 2



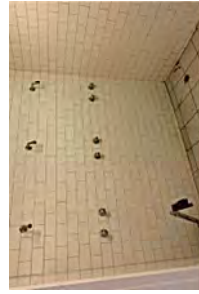
Pavilion rooms 3



Pavilion rooms



Pavilion shower (2)



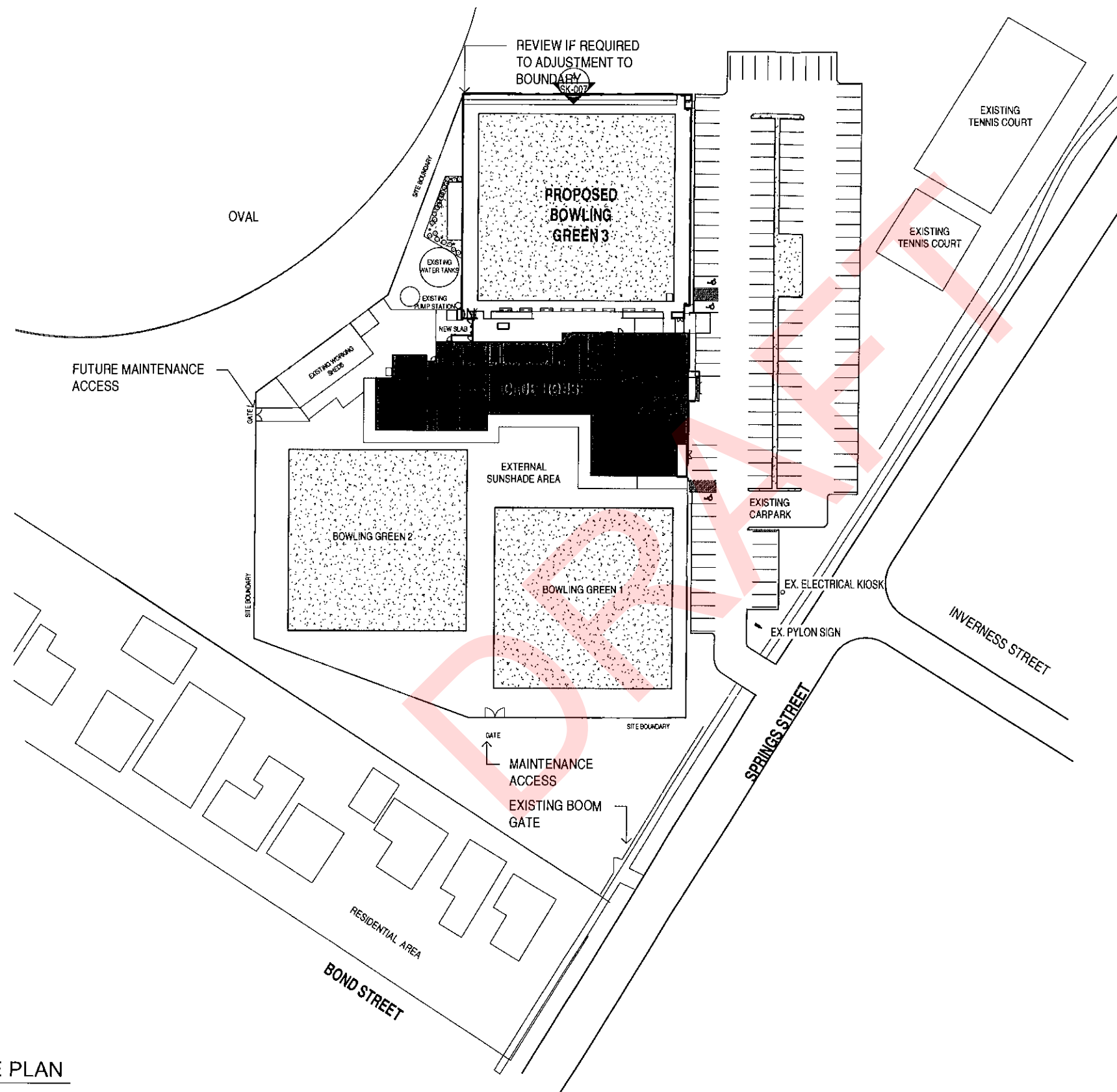
Pavilion shower

appendix 5 – clayton bowls club
proposal

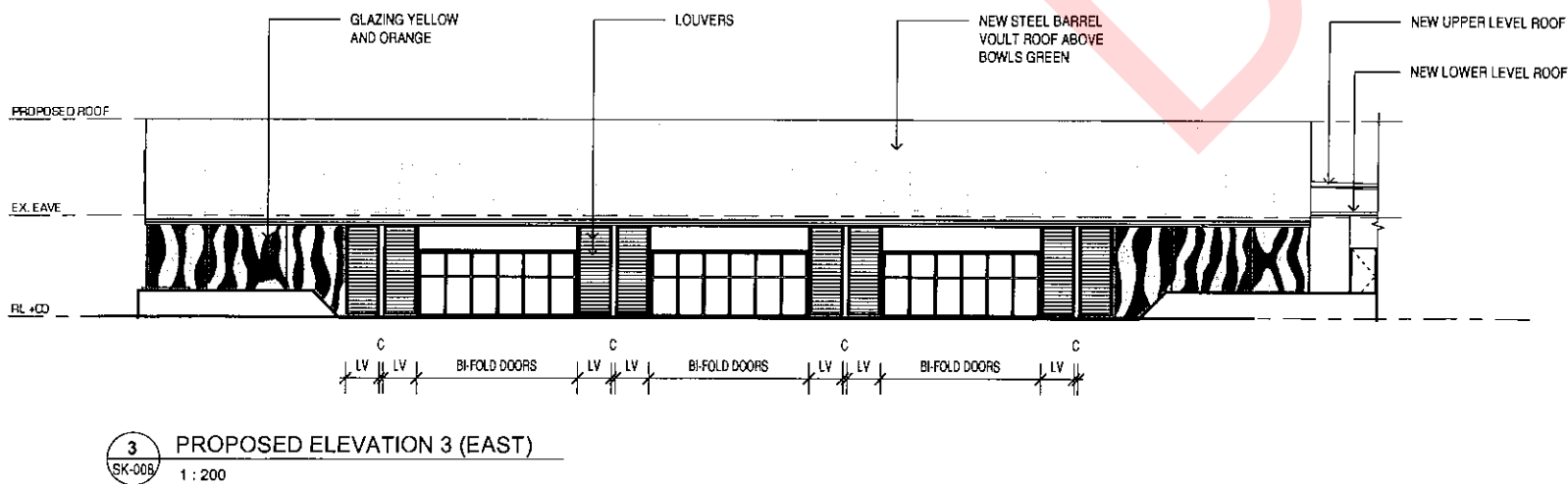
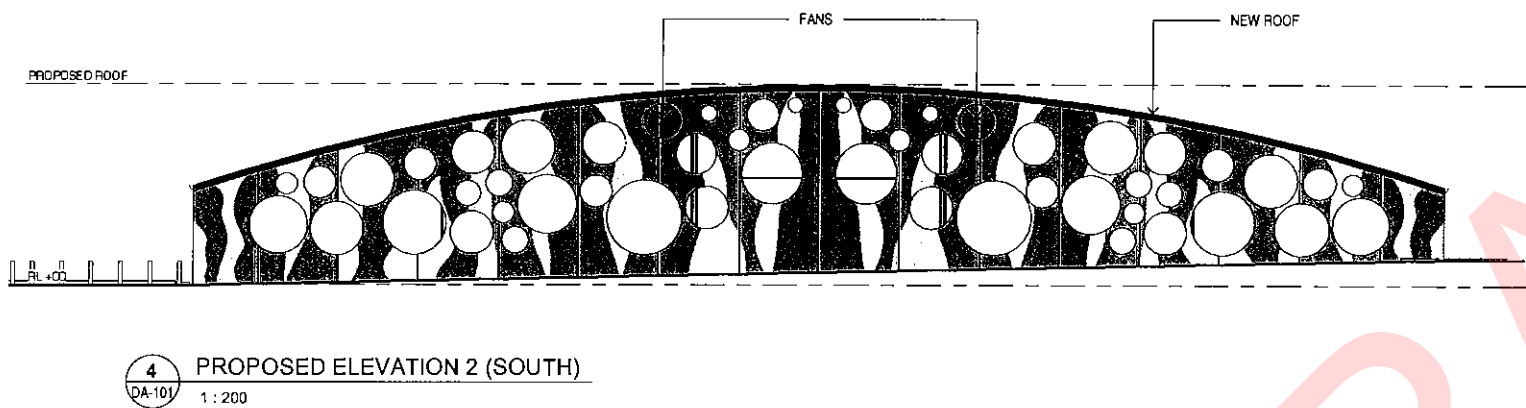
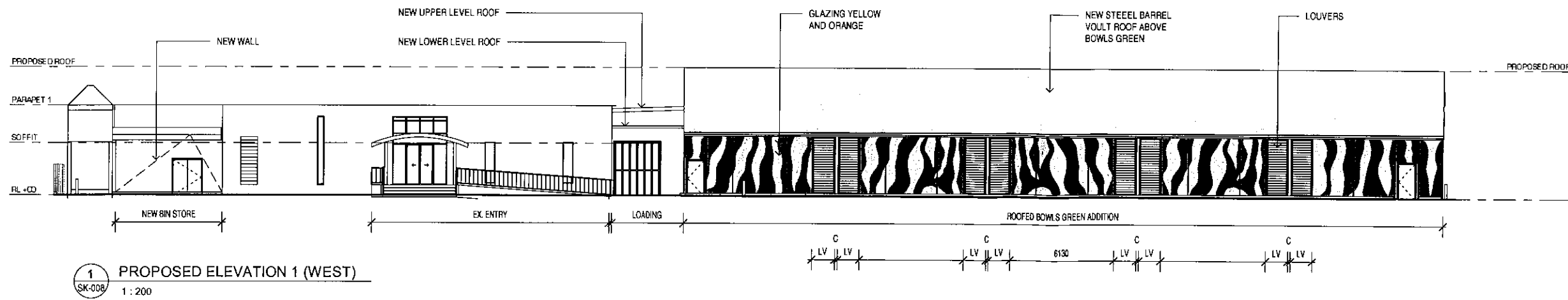
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NOTE:

- SITE EXENTS INDICATIVE ONLY SUBJECT TO DETAILED SURVEY
- LOCATION OF EXISTING SERVICES, BELOW/ABOVE GROUND TO BE CONFIRMED
- SETBACKS ILLUSTRATED SUBJECT TO LOCAL COUNCIL REQUIREMENTS
- LAYOUTS ILLUSTRATED ARE INDICATIVE ONLY. THIS PLAN IS SUBJECT TO FURTHER DETAILED INVESTIGATION BY RELEVANT AUTHORITIES, CONSULTANTS AND SITE PARAMETERS. ANY DEVELOPMENT DECISIONS MADE ON SHOWN SITE SHOULD NOT BE BASED ON THIS PLAN.



1 PROPOSED SITE PLAN
SK-004 1 : 1000



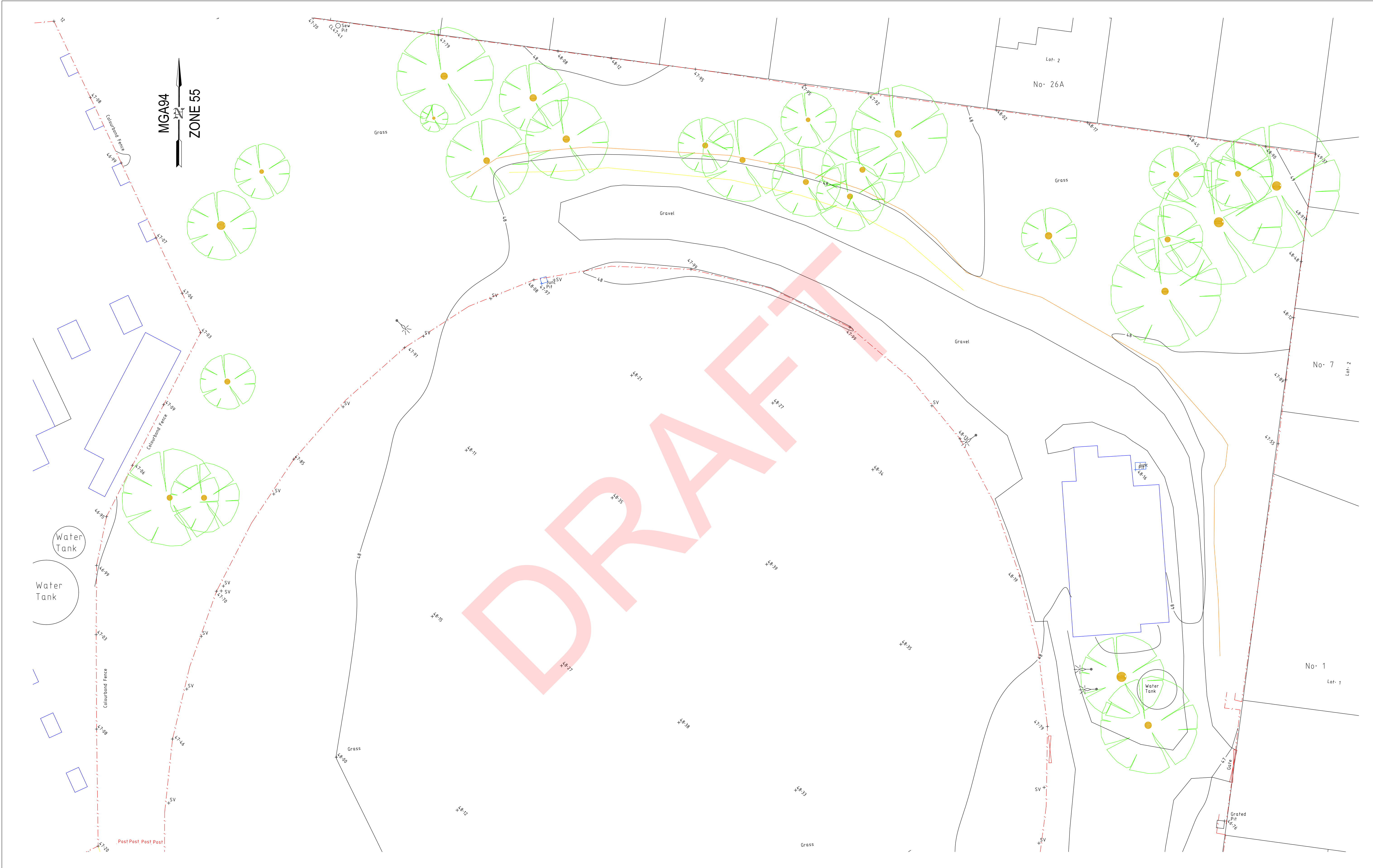
NOTE:
- SITE EXTENTS INDICATIVE ONLY SUBJECT TO DETAILED SURVEY
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appendix 6 – site survey

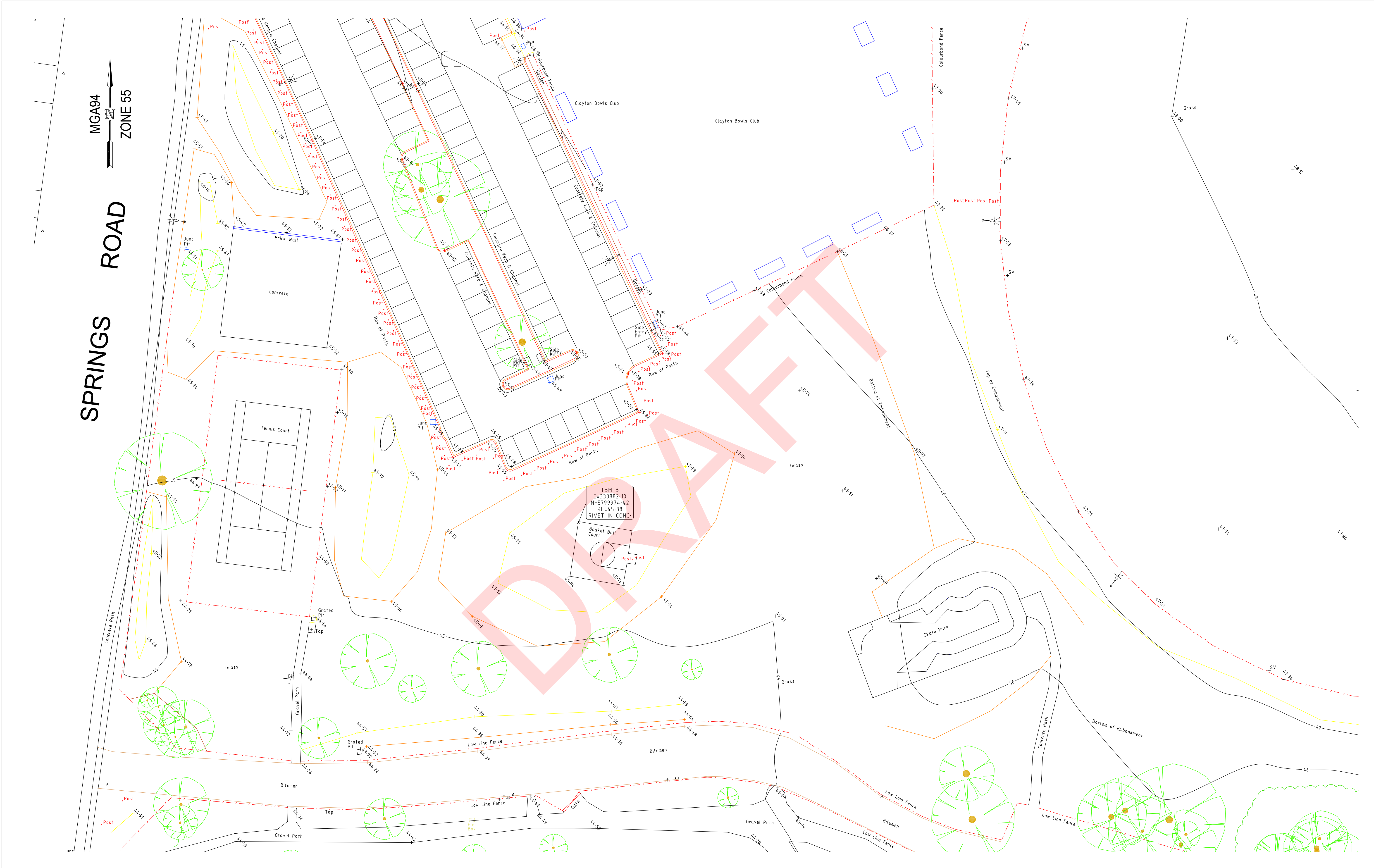
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|---|--|---|---|--|--|----------------------------------|
| LEGEND: <div><div> DISABLED PARKING TACTILE PAVERS TEMPORARY BENCH MARK HOUSE DRAIN ELECTRICAL LIGHT POLE</div><div> EXISTING TREE TITLE LINE TELSTRA PIT BOLLARD ELECTRICAL POLE</div><div> INVERT LEVEL JUNCTION PIT GRATED PIT SIDE ENTRY PIT PHOTOS</div></div> | DO NOT SCALE DRAWING PLEASE NOTE: - GROUPS OF TREES HAVE ONLY BEEN SURVEYED TO THE PERIMETER OF THE VEGETATION. THE TREES SURROUNDING THE LAKE HAVE NOT BEEN SURVEYED AND ONLY A VEGETATION LINE HAS BEEN SHOWN. - THIS IS TO ONLY BE USED FOR MASTER PLANNING PURPOSES. - THIS PLAN IN NO WAY ATTEMPTS TO RE-ESTABLISH TITLE BOUNDARIES. THE PROPERTY LINES SHOWN HAVE BEEN DERIVED FROM THE DIGITAL MAP BASE AND ARE APPROXIMATE ONLY. | SURVEYED BY: MOONLAND GROUP ABN 97 994 395 762 info@moonland.com.au Level 1, 1 Carters Avenue Toorak, VIC, 3142 T 9824 0354 M 0401 005 921 | NOTES: • ACCURACY OF FEATURES ± 0.05m AND ACCURACY OF REDUCED LEVELS ± 0.02m. • TRAVERSE BEARINGS AND DISTANCES SHOWN HEREON HAVE BEEN DERIVED FROM EDM MEASUREMENT. • ALL LENGTHS ARE IN METRES. • ONLY VISIBLE SERVICES HAVE BEEN SHOWN. ANY UNDERGROUND SERVICES WILL REQUIRE A DIAL BEFORE YOU DIG SEARCH. • ALL WINDOWS ON ADJACENT PROPERTIES MUST BE VERIFIED ONSITE BY ANYONE RELYING ON THIS PLAN. • TREE SPREAD SHOWN ON THIS PLAN IS INDICATIVE ONLY. • LOCATION OF ABUTTING BUILDING AND ENVIRONMENT IS INDICATIVE ONLY UNLESS OTHERWISE SHOWN. | SURVEY BY: PR & KD SURVEY OF FEATURES EXISTING ON: 30/11/2020 DRAWN BY: PR & KD DATE DRAWN: 04/12/2020 LEVELS SHOWN THUS ² / ₃ ARE TO AHD VIDE MORDIALLOC PM 176 WITH A STATED VALUE OF 57.595 | Client: THE COMMUNITY COLLABORATIVE Project: NAMATJIRA PARK, CLAYTON Title: KEY SHEET Original Size: A1 File name: M2276 - A1.dwg | Sheet: 1 Rev: A |
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| LEGEND: | | | | DO NOT SCALE DRAWING | | PLEASE NOTE: | | SURVEYED BY: | | NOTES: | | SURVEY BY: PR & KD | | Client: THE COMMUNITY COLLABORATIVE | | | |
|  DISABLED PARKING | |  EXISTING TREE | | IL INVERT LEVEL | | <div>SCALE 1:250</div> <div></div> <div>LENGTHS ARE IN METRES</div> | | <div>-GROUPS OF TREES HAVE ONLY BEEN SURVEYED TO THE PERIMETER OF THE VEGETATION. THE TREES SURROUNDING THE LAKE HAVE NOT BEEN SURVEYED AND ONLY A VEGETATION LINE HAS BEEN SHOWN.</div> <div>-THIS IS TO ONLY BE USED FOR MASTER PLANNING PURPOSES.</div> <div>-THIS PLAN IN NO WAY ATTEMPTS TO RE-ESTABLISH TITLE BOUNDARIES. THE PROPERTY LINES SHOWN HAVE BEEN DERIVED FROM THE DIGITAL MAP BASE AND ARE APPROXIMATE ONLY.</div> | | <div> MOONLAND GROUP</div> <div>ABN 97 994 395 762 info@moonland.com.au</div> <div>Level 1, 1 Carters Avenue Toorak, VIC, 3142</div> <div>T 9824 0354 M 0401 005 921</div> | | <div>ACCURACY OF FEATURES $\pm 0.05m$ AND ACCURACY OF REDUCED LEVELS $\pm 0.02m$.</div> <div>TRAVERSE BEARINGS AND DISTANCES SHOWN HEREON HAVE BEEN DERIVED FROM EDM MEASUREMENT.</div> <div>ALL LENGTHS ARE IN METRES.</div> <div>ONLY VISIBLE SERVICES HAVE BEEN SHOWN. ANY UNDERGROUND SERVICES WILL REQUIRE A DIAL BEFORE YOU DIG SEARCH.</div> <div>ALL WINDOWS ON ADJACENT PROPERTIES MUST BE VERIFIED ONSITE BY ANYONE RELYING ON THIS PLAN.</div> <div>TREE SPREAD SHOWN ON THIS PLAN IS INDICATIVE ONLY.</div> <div>LOCATION OF ABUTTING BUILDING AND ENVIRONMENT IS INDICATIVE ONLY UNLESS OTHERWISE SHOWN.</div> | | <div>SURVEY OF FEATURES EXISTING ON: 30/11/2020</div> <div>DRAWN BY: PR & KD</div> <div>DATE DRAWN: 04/12/2020</div> <div>LEVELS SHOWN THUS ± 75 ARE TO AHD VIDE MORDIALLOC PM 176 WITH A STATED VALUE OF 57.595</div> | | <div>Sheet: 2</div> <div>Rev: A</div> | |
|  TACTILE PAVERS | |  TITLE LINE | | JP JUNCTION PIT | | | | | | | | | | | | | |
|  TEMPORARY BENCH MARK | |  TELSTRA PIT | | GP GRATED PIT | | | | | | | | | | | | | |
|  HOUSE DRAIN | |  BOLLARD | | SEP SIDE ENTRY PIT | | | | | | | | | | | | | |
|  ELECTRICAL LIGHT POLE | |  ELECTRICAL POLE | |  PHOTOS | | | | | | | | | | | | | |



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| LEGEND: <div><div><div></div><div>DISABLED PARKING</div></div><div><div></div><div>TACTILE PAVERS</div></div><div><div></div><div>TEMPORARY BENCH MARK</div></div><div><div></div><div>HOUSE DRAIN</div></div><div><div></div><div>ELECTRICAL LIGHT POLE</div></div></div> <div><div></div><div>EXISTING TREE</div></div> <div><div></div><div>TITLE LINE</div></div> <div><div></div><div>TELSTRA PIT</div></div> <div><div></div><div>BOLLARD</div></div> <div><div></div><div>ELECTRICAL POLE</div></div> |
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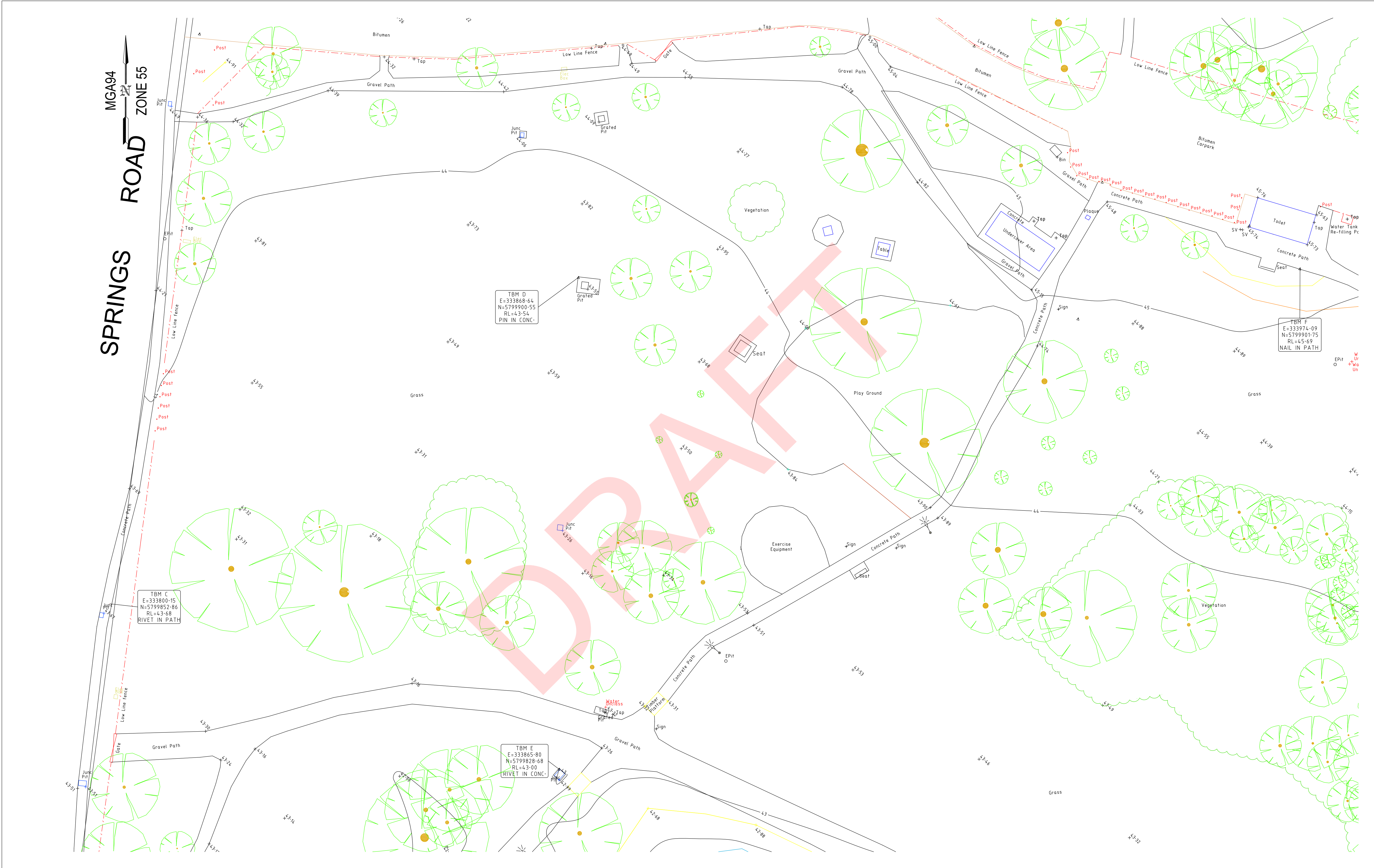
INVERT LEVEL

JUNCTION PIT

GRADED PIT

SIDE ENTRY PIT

PHOTOS



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| LEGEND: <div><div><div></div><div>DISABLED PARKING</div></div><div><div></div><div>TACTILE PAVERS</div></div><div><div></div><div>TEMPORARY BENCH MARK</div></div><div><div></div><div>HOUSE DRAIN</div></div><div><div></div><div>ELECTRICAL LIGHT POLE</div></div></div> <div><div><div></div><div>EXISTING TREE</div></div><div><div></div><div>TITLE LINE</div></div><div><div></div><div>TELSTRA PIT</div></div><div><div></div><div>BOLLARD</div></div><div><div></div><div>ELECTRICAL POLE</div></div></div> <div><div><div></div><div>INVERT LEVEL</div></div><div><div></div><div>JUNCTION PIT</div></div><div><div></div><div>GRADED PIT</div></div><div><div></div><div>SIDE ENTRY PIT</div></div><div><div></div><div>PHOTOS</div></div></div> |
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DO NOT SCALE DRAWING

SCALE 1:250
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LENGTHS ARE IN METRES

PLEASE NOTE:

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MOONLAND GROUP

ABN 97 994 395 762
info@moonland.com.au

Level 1, 1 Carters Avenue
Toorak, VIC, 3142

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M 0401 005 921

NOTES:

• ACCURACY OF FEATURES ± 0.05m AND ACCURACY OF REDUCED LEVELS ± 0.02m.

• TRAVERSE BEARINGS AND DISTANCES SHOWN HEREON HAVE BEEN DERIVED FROM EDM MEASUREMENT.

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• TREE SPREAD SHOWN ON THIS PLAN IS INDICATIVE ONLY.

• LOCATION OF ABUTTING BUILDING AND ENVIRONMENT IS INDICATIVE ONLY UNLESS OTHERWISE SHOWN.

SURVEY BY: PR & KD

SURVEY OF FEATURES EXISTING ON: 30/11/2020

DRAWN BY: PR & KD

DATE DRAWN: 04/12/2020

LEVELS SHOWN THUS ²/₃ ARE TO AHD VIDE MORDIALLOC PM 176 WITH A STATED VALUE OF 57.595

Client: **THE COMMUNITY COLLABORATIVE**

Project: **NAMATJIRA PARK, CLAYTON**

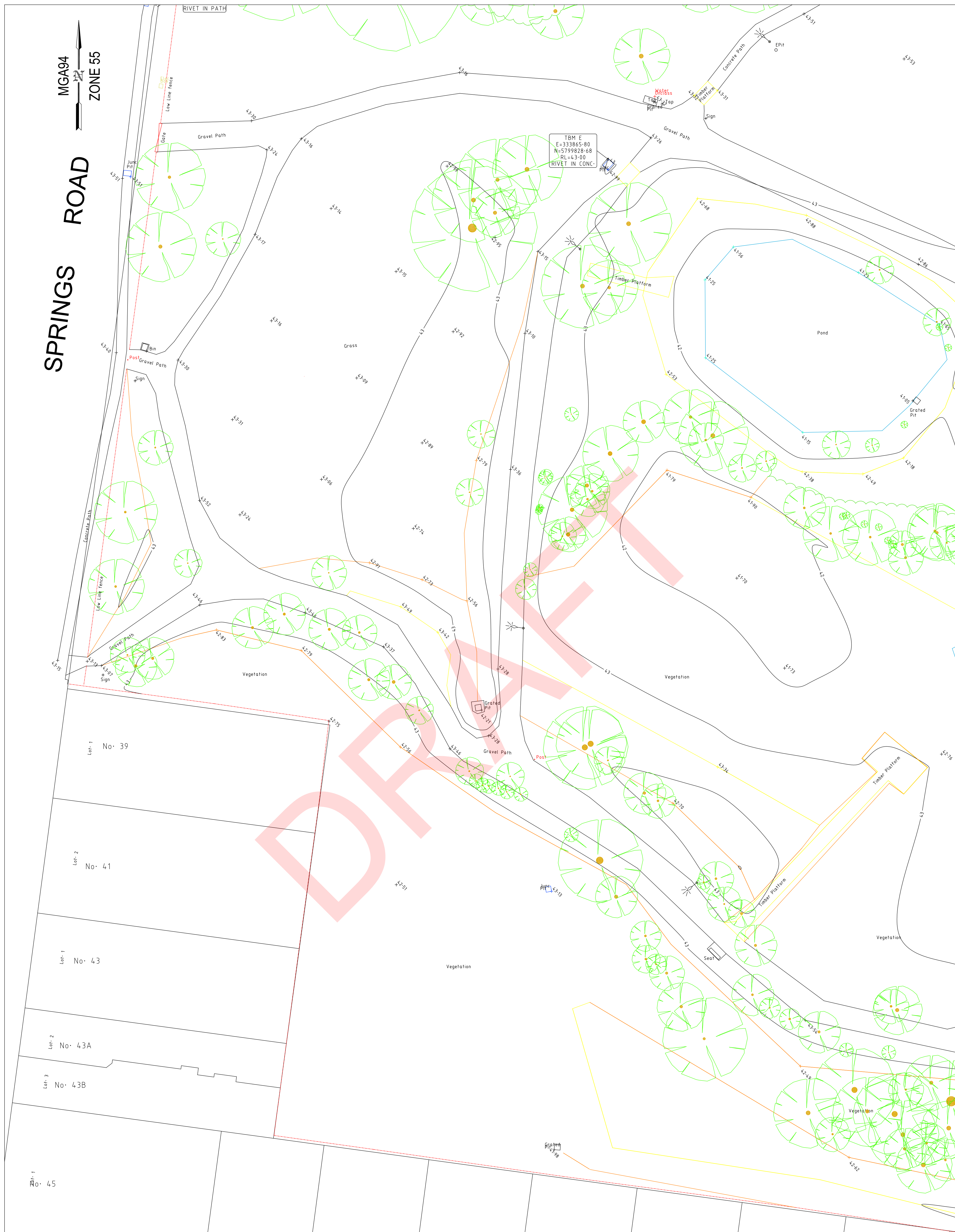
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Rev: **A**



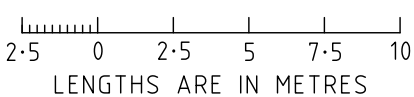
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| | DISABLED PARKING | | EXISTING TREE | IL | INVERT LEVEL |
| | TACTILE PAVERS | | TITLE LINE | JP | JUNCTION PIT |
| | TEMPORARY BENCH MARK | | TELSTRA PIT | GP | GRADED PIT |
| | HOUSE DRAIN | | BOLLARD | SEP | SIDE ENTRY PIT |
| | ELECTRICAL LIGHT POLE | | ELECTRICAL POLE | | PHOTOS |

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SCALE 1:250



PLEASE NOTE:

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SURVEY BY: PR & KD

SURVEY OF FEATURES EXISTING ON: 30/11/2020

DRAWN BY: PR & KD

DATE DRAWN: 09/12/2020

LEVELS SHOWN THUS $\nearrow_{\text{e.g.}}$ ARE TO AHD VIDE MORDIALLOCK

PM 176 WITH A STATED VALUE OF 57.595

Client: **THE COMMUNITY COLLABORATIVE**
Project: **NAMATJIRA PARK, CLAYTON**

Title: **FEATURE & LEVEL SURVEY**

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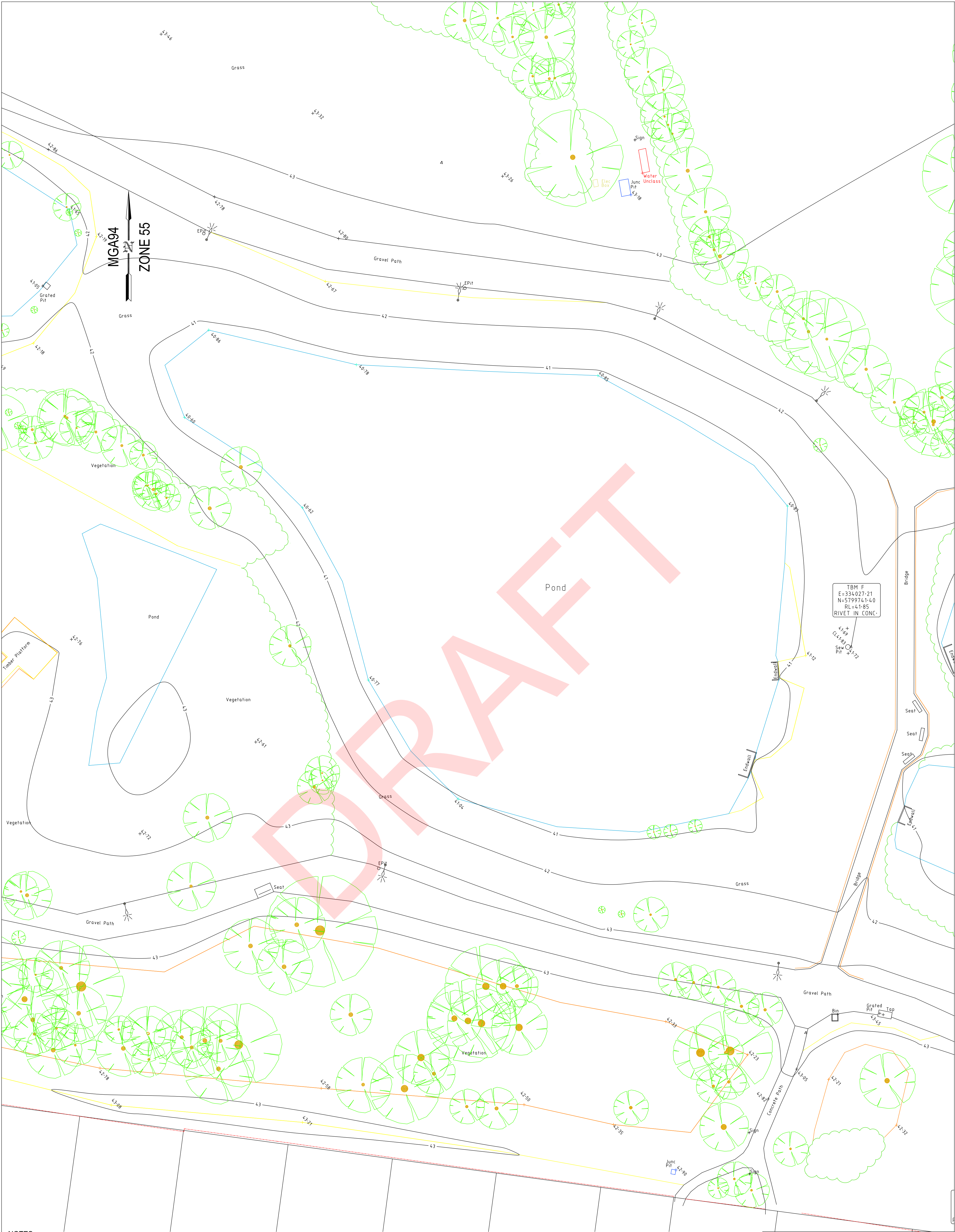


MOONLAND
GROUP

ABN 97 994 395 762
info@moonland.com.au

Level 1, 1 Carters Avenue
Toorak, VIC, 3142

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NOTES:

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| | DISABLED PARKING | | EXISTING TREE | | IL INVERT LEVEL |
| | TACTILE PAVERS | | TITLE LINE | | JP JUNCTION PIT |
| | TEMPORARY BENCH MARK | | TELSTRA PIT | | GP GRATED PIT |
| | HOUSE DRAIN | | BOLLARD | | SEP SIDE ENTRY PIT |
| | ELECTRICAL LIGHT POLE | | ELECTRICAL POLE | | PHOTOS |

DO NOT SCALE DRAWING

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| DRAWN BY: PR & KD | |
| DATE DRAWN: 09/12/2020 | |
| LEVELS SHOWN THUS ARE TO AHD VIDE MORDIALLOC PM 176 WITH A STATED VALUE OF 57.595 | |

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| Client: | THE COMMUNITY COLLABORATIVE | |
| Project: | NAMATJIRA PARK, CLAYTON | |
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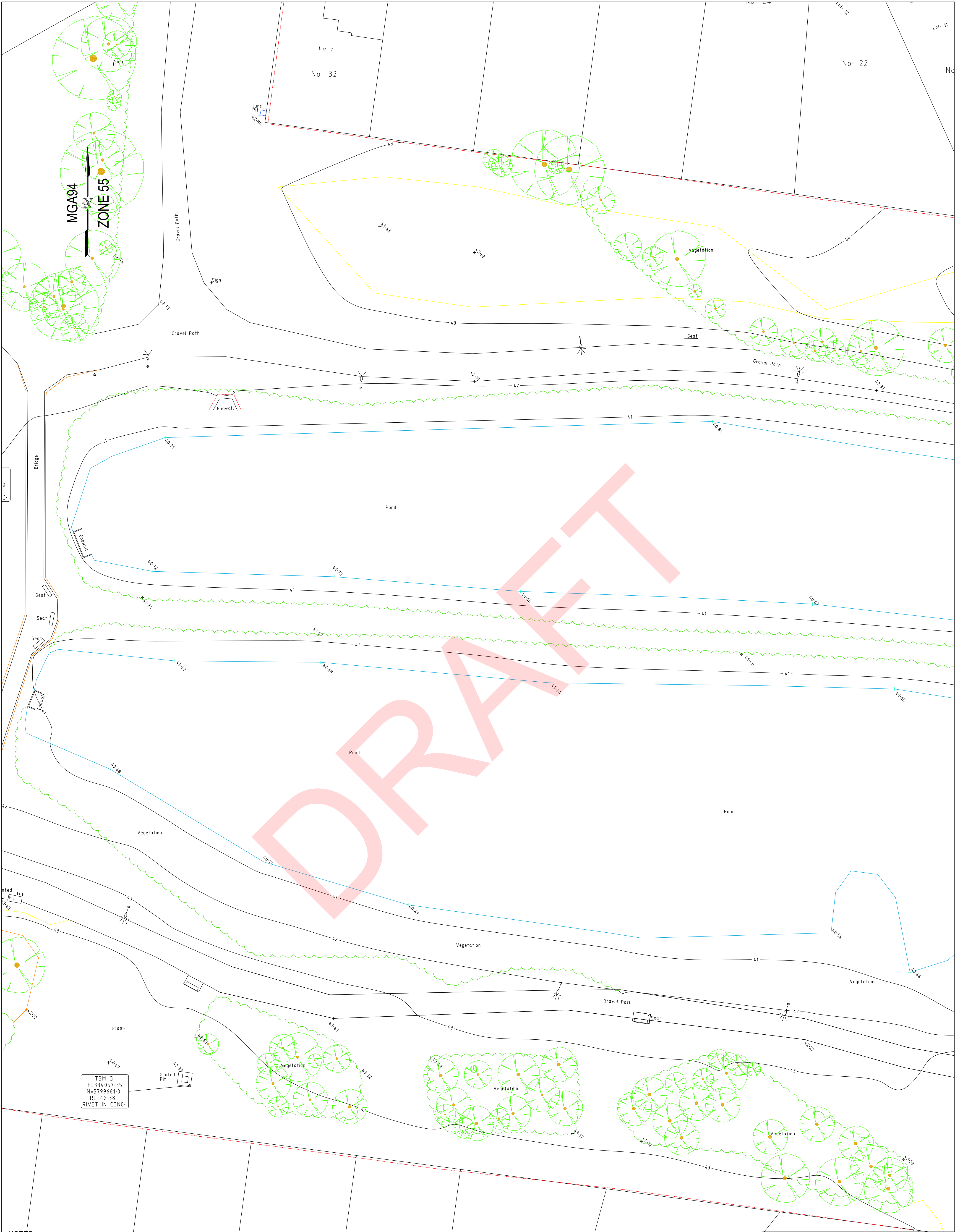
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| | HOUSE DRAIN | | BOLLARD |
| | ELECTRICAL LIGHT POLE | | ELECTRICAL POLE |
| | | | INVERT LEVEL |
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| Project: NAMATJIRA PARK, CLAYTON | | |
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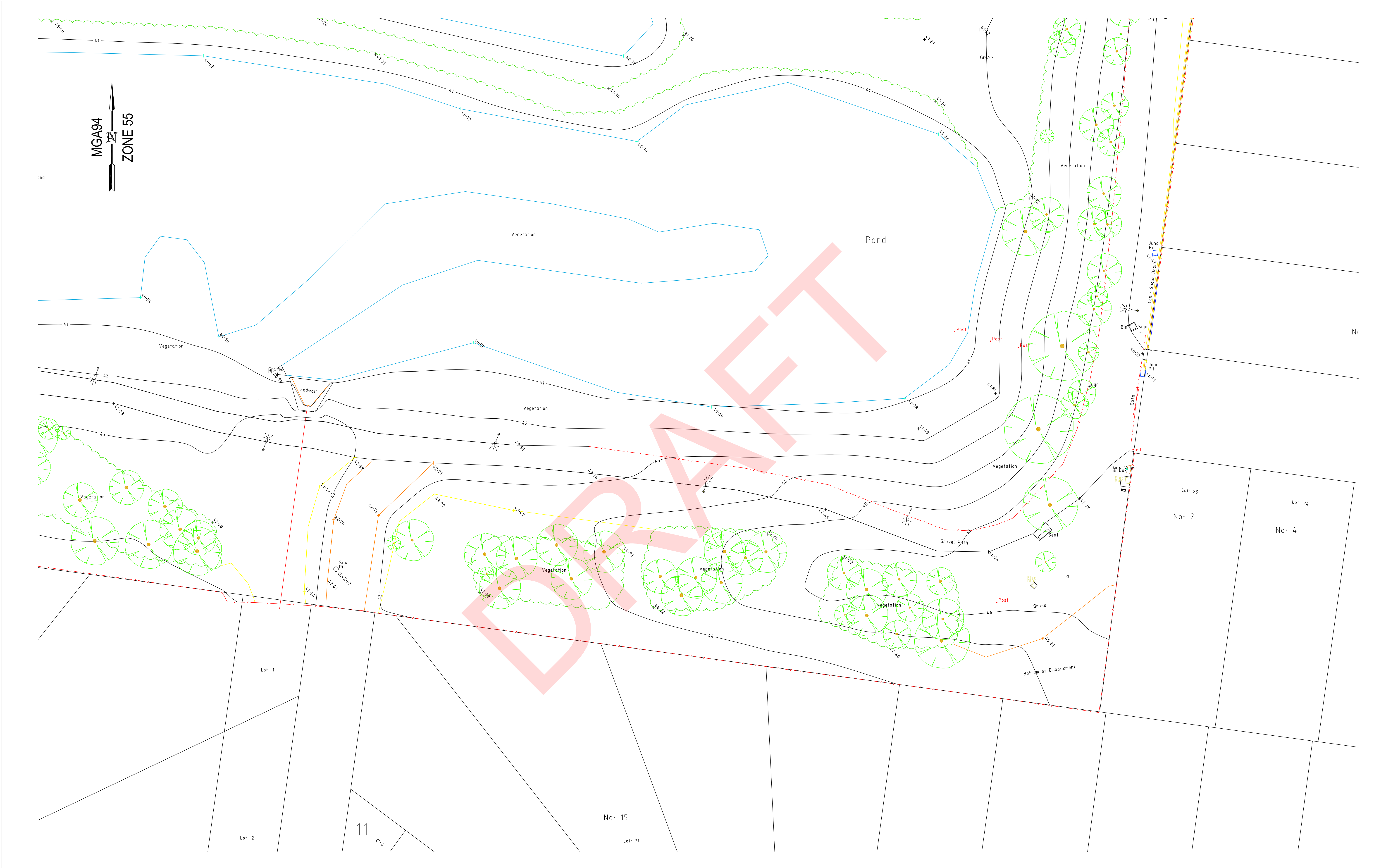
SURVEYED BY:

MOONLAND GROUP

ABN 97 994 395 762
info@moonland.com.au

Level 1, 1 Carters Avenue
Toorak, VIC, 3142

T 9824 0354
M 0401 005 921



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appendix 7 – traffic assessment

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Namatjira Park Master Plan

Transport Impact Assessment



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7 January 2021

onemilegrid

ABN: 79 168 115 679

(03) 9939 8250

56 Down Street

COLLINGWOOD, VIC 3066

www.onemilegrid.com.au

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1 INTRODUCTION

onemilegrid has been engaged by The Community Collaborative to assist with development of the Namatjira Park Master Plan.

The Master Plan intends to develop a strategic vision for the reserve, considering the existing and future needs of users, and the infrastructure required to support them.

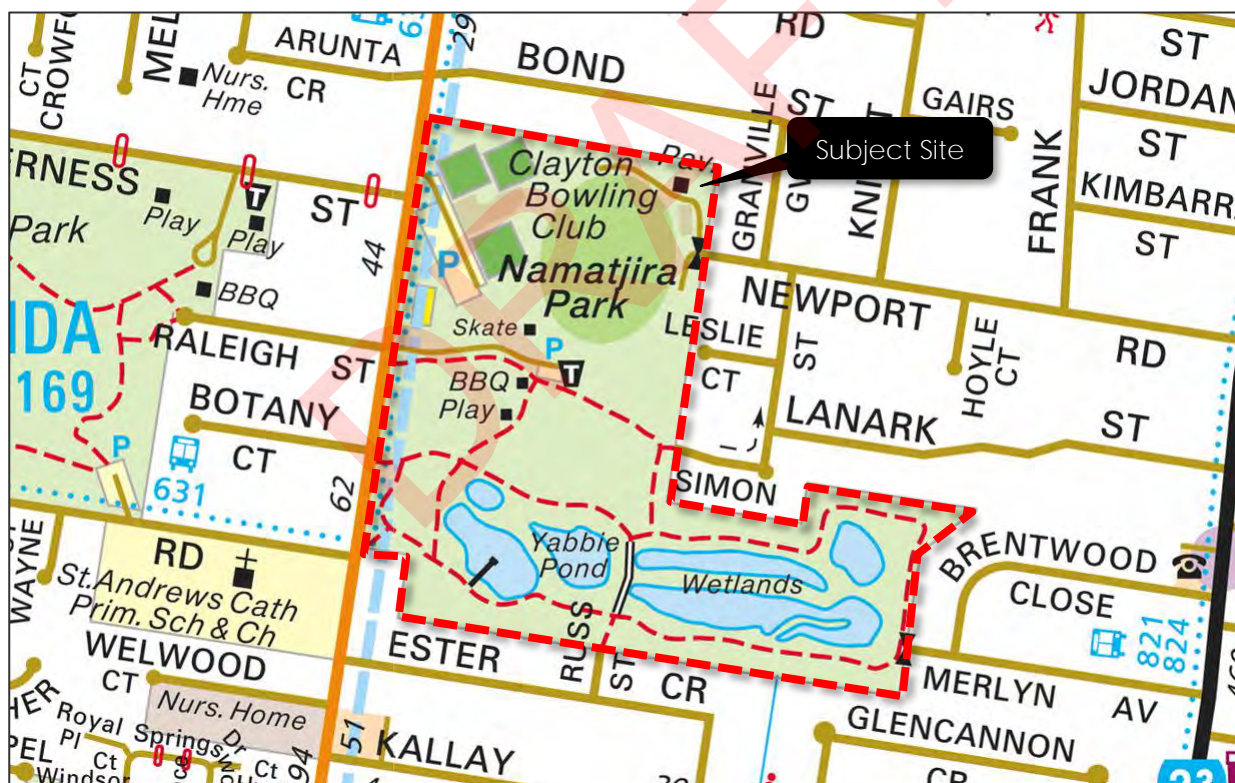
As part of this assessment the subject site has been inspected with due consideration of the development proposal, traffic and parking data has been sourced and relevant background reports have been reviewed.

2 EXISTING CONDITIONS

2.1 Site Location

The subject site is located on the eastern side of Springs Road in Clayton South, approximately 1.5 km south-west of the Clayton Activity Centre, shown in Figure 1 in context with its immediate surrounds.

Figure 1 Site Location



The site is irregular in shape, with a frontage of approximately 410 metres to Springs Road, and a total site area of 17 hectares.

Land use in the vicinity of the site is largely residential, but includes the St Andrews Catholic Church and Primary School to the south-west and Bald Hill Park to the west.

An aerial view of the subject site is provided in Figure 2.

Figure 2 Site Context



Copyright Nearmap

2.2 Road Network

Springs Road is a major Council road aligned generally north-south between Centre Road and Bourke Road.

At the frontage of the site, it provides for a single traffic lane and an unrestricted kerbside parking lane in each direction, with footpaths provided on both sides.

The cross-section of Springs Road is shown in Figure 3.

Figure 3 Springs Road, looking north (left) and south (right) alongside the subject site



A 60km/h speed limit applies to Springs Road.

2.3 Crash History

Crash history information was obtained through the Department of Transport (VicRoads) CrashStats database (the Victorian accident statistics and mapping program) for the latest available 5-year period (2013 – 2018 inclusive) in the site's vicinity.

The data is summarised below:

- Springs Road
 - ✦ Fall from a vehicle, resulting in serious injury
 - ✦ Collision with a fixed object, resulting in injury
 - ✦ Collision with a fixed object, resulting in injury
- Bond Street
 - ✦ Collision with a vehicle, resulting in serious injury
- Lanark Street
 - ✦ Collision with a vehicle, resulting in serious injury

This data does not suggest any trends or serious safety issues specific to the site.

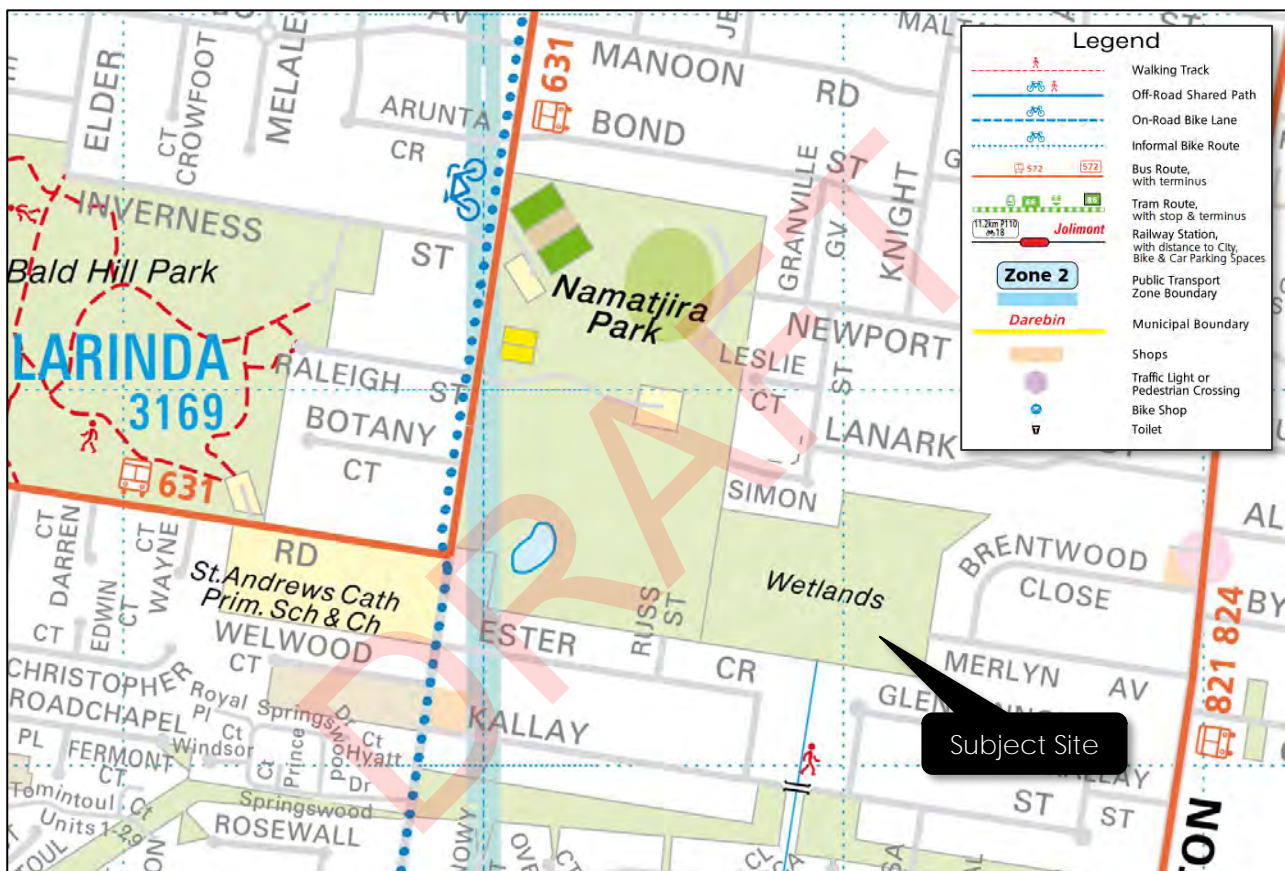
2.4 Sustainable Transport

An extract of the TravelSmart Map for the City of Kingston is shown in Figure 4, highlighting the existing public transport, bicycle and pedestrian facilities in the area.

Access to the site via public transport is limited, with the Route 631 operating along the site frontage (with stops located to the south of the main access, and north of Bond Street), and Routes 821 and 824 accessible a short distance to the east. Both services link to an interchange at Clayton Railway Station.

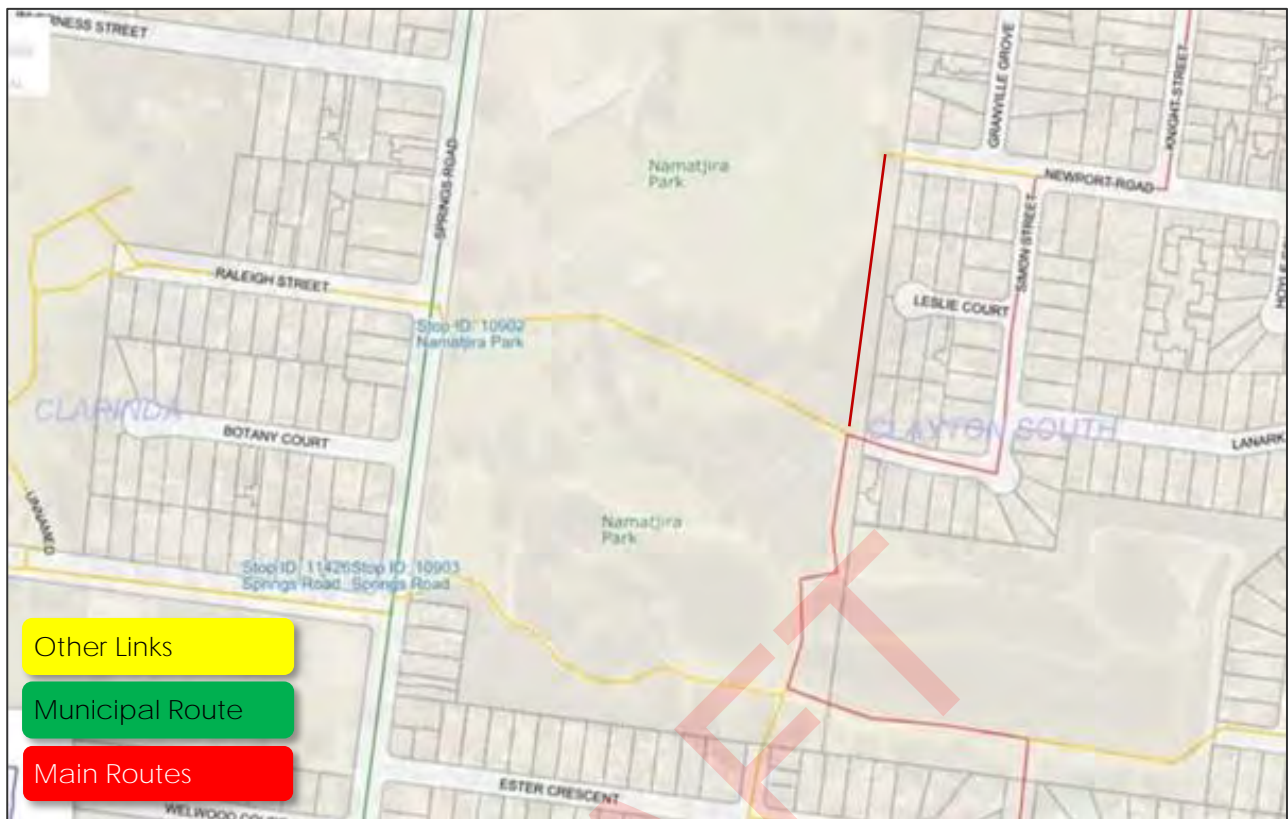
Cycling access is relatively poor, with Springs Road providing the only connection in the site's vicinity, as an informal route.

Figure 4 TravelSmart Map



In addition to those existing routes, we have been advised Council are considering the addition of new cycling links within the precinct, including a "main route" linking Mordialloc to the Dingley Bypass largely along the Melbourne Water drain, and "other links" providing east-west connectivity through the park along existing paths between Simon Street and Raleigh Street and between Merlyn Avenue and Bunney Road. These paths are shown in Figure 5 below.

Figure 5 Potential Cycle Routes



3 NAMATJIRA PARK

3.1 User Groups & Facilities

The site accommodates a range of users, with a summary of the various groups and activities on-site is provided below:

- Clayton Bowls Club
- Champions Bistro (Restaurant & Bar)
- Parkdale United Cricket Club
- Clayton District Cricket Club
- Kingston United Cricket Club
- Carnegie United Cricket Club
- South Eastern Predators Gridiron Club

A summary of the sports club usage characteristics is provided in Table 1 below.

The park accommodates the following facilities:

- Bowls Club (12 rinks)
- Turf Sports Field (Cricket, Gridiron) and associated Clubhouse
- Tennis Court
- Wall Court
- Basketball half Court
- Skate Bowl
- Playground
- Walking and Cycling Trails

3.2 Access & Movement

3.2.1 Vehicles

Vehicular access to the site is provided primarily from Springs Road, with a fully-directional access servicing the bowls club and restaurant towards the northern end of the site, and an additional fully-directional access located opposite Raleigh Street mid-way long the frontage.

An additional vehicular access is provided from Newport Road, providing access to car parking alongside the sports field, which is closed and locked when not in use.

3.2.2 Pedestrians & Bicycles

Pedestrian access to the site is provided primarily from Springs Road, with footpaths linking directly to internal pedestrian paths.

Additional connections are provided along the park periphery, including from Russ Street, Merlyn Avenue, Simon Street and Newport Road.

Table 1 Sports Field User Groups

| User Group | Season | Sport | Pavilion | Operation | | | | | | | | | | | | | |
|-------------------------|--------|----------|----------|-----------|---------|---------|---------|-----------|---------|----------|---------|--------|---------|----------|---------|--------|---------|
| | | | | Monday | | Tuesday | | Wednesday | | Thursday | | Friday | | Saturday | | Sunday | |
| | | | | Day | Evening | Day | Evening | Day | Evening | Day | Evening | Day | Evening | Day | Evening | Day | Evening |
| Parkdale United | Summer | Cricket | X | | | | | | | | | | | X | | | |
| Clayton District | Summer | Cricket | | | | | | | | | | | | X | | | |
| Kingston United | Summer | Cricket | X | | | | | | | | | | | | | X | X |
| Carnegie United | Summer | Cricket | X | | | | | | | | | | | | | X | X |
| South Eastern Predators | Summer | Gridiron | | | | | X | | | | X | | | | | | |
| | Winter | | X | | | | X | | | | X | | | X | X | X | |

4 MASTER PLAN

As part of planning for the future of Namatjira Park, we understand there are four use scenarios being considered:

- Scenario 1- No change
 - ✦ Based on current usage and reserve layout
- Scenario 2 – Full utilisation
 - ✦ If current reserve layout is maintained but facilities are utilised to full potential (i.e. training every night of the week and games all day Sat/Sun)
- Scenario 3 – Additional sports field
 - ✦ If a second oval was to be developed on site
 - ✦ This scenario will likely result in the demolition and replacement of the existing pavilion to the west of the existing oval, adjacent to the bowls club
- Scenario 4 – Bowls Upgrade
 - ✦ The bowls club are considering an upgrade to existing facilities, which would likely result in an increase in membership and usage

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5 CAR PARKING

5.1 Existing Conditions

Car parking on-site is provided in three main parking areas, located adjacent to the bowls club and restaurant, the sports field pavilion, and the playground.

On-street parking around the periphery of the park is largely unrestricted, with some sections adjacent to the primary school south-west of the park subject to No Stopping or 5 minute restrictions during school pick-up/drop-off.

A summary of the parking areas is detailed below, and pictured in Figure 6.

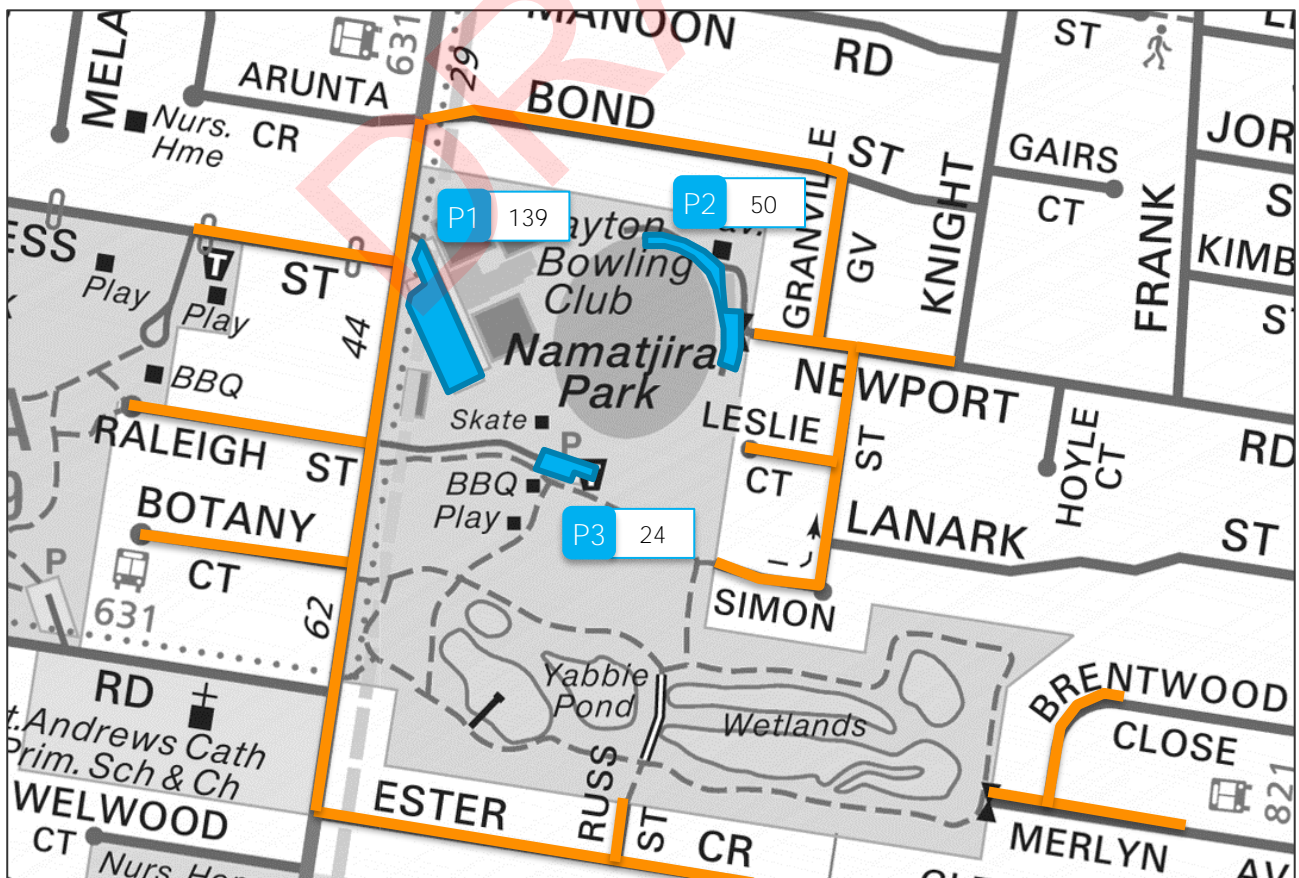
- Area 1 (Bowls Club): 139 spaces (including 4x disabled, 2x P15min)
- Area 2 (Sports Field): 50 spaces (estimated, unsealed and unmarked)
- Area 3 (Playground): 24 spaces

5.1.1 Survey

To confirm existing parking supplies, and understand that variation in usage over time, onemilegrid commissioned car parking occupancy surveys on-site and in the surrounding streets during the following days and times:

- Thursday 26/11/2020 1:00pm – 9:00pm
- Saturday 28/11/2020 9:00am - 6:00pm
- Sunday 29/11/2020 12:00pm - 6:00pm

Figure 6 Car Parking Supply



At the time of the surveys, we understand that the bowls club and restaurant were in operation (with COVID-19 restrictions largely easing in the preceding week). Cricket games were scheduled on both the Saturday and Sunday, however there were no users of the sports field scheduled at other times. The park was otherwise free of restrictions on use.

The results of these surveys are illustrated below.

Figure 7 Parking Occupancy On-Site – Thursday 26th November 2020

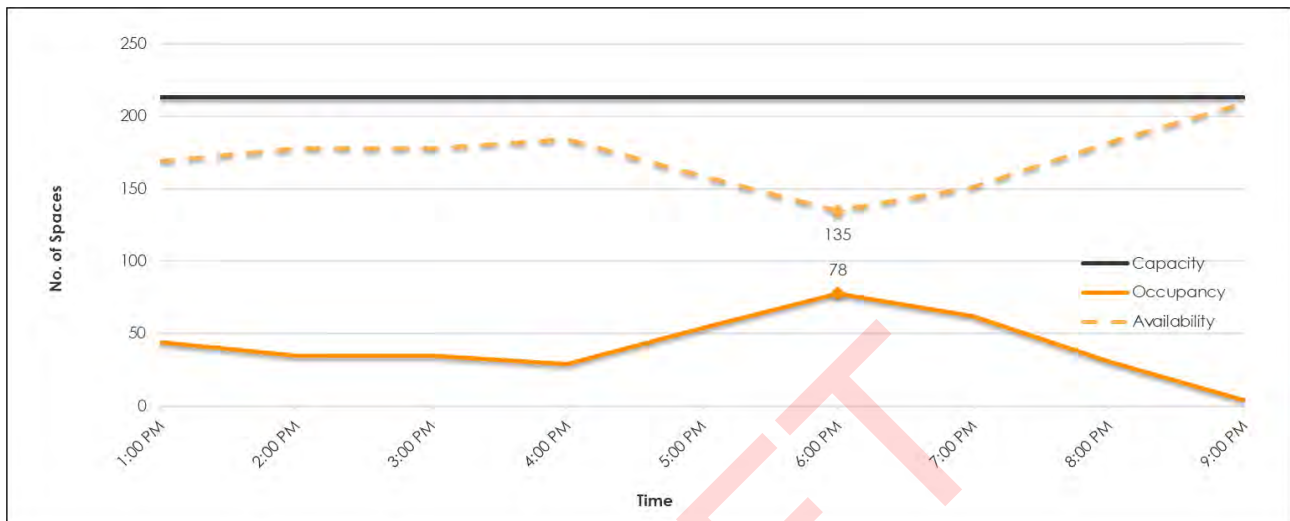
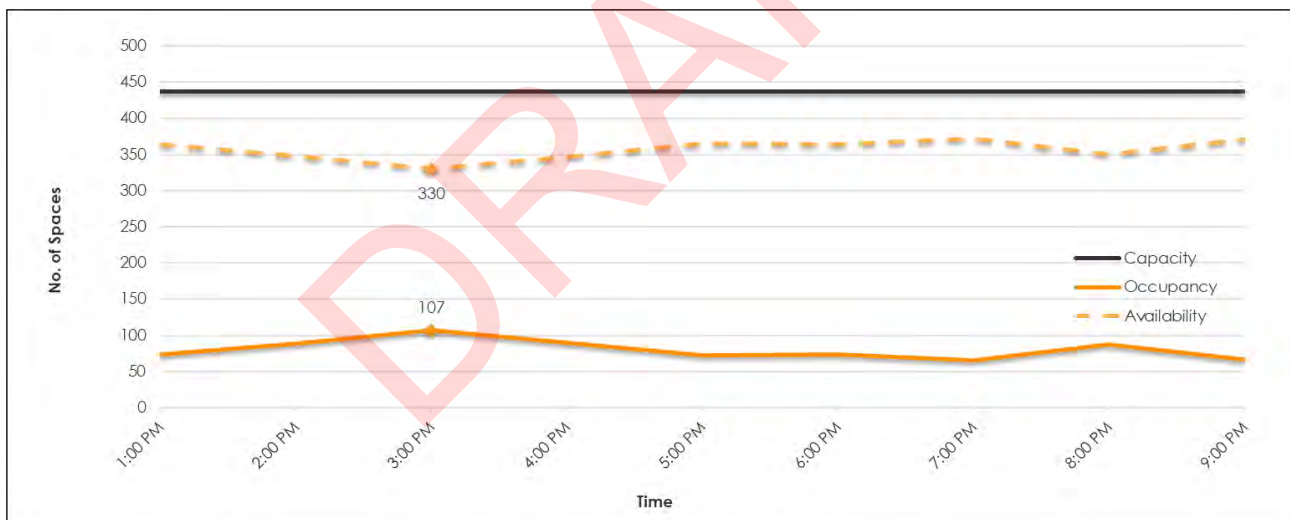


Figure 8 Parking Occupancy On-Street – Thursday 26th November 2020



On-site on the Thursday, peak occupancy occurred at 6:00 PM when 78 of the 213 spaces were occupied, leaving no fewer than 135 spaces available for use. Parking utilisation varied between 37% and 2% of capacity. At this time, the central Playground parking area was fully occupied, and the Bowls Club car park was less than 40% occupied.

On-street, the surveys identified a supply of 437 parking spaces. Peak occupancy occurred at 3:00 PM when 107 spaces were occupied, leaving no fewer than 330 spaces available for use. Parking utilisation varied between 24% and 15% of capacity.

There were no obvious indications of on-street parking attributable to users of the park.

Figure 9 Parking Occupancy On-Site – Saturday 28th November 2020

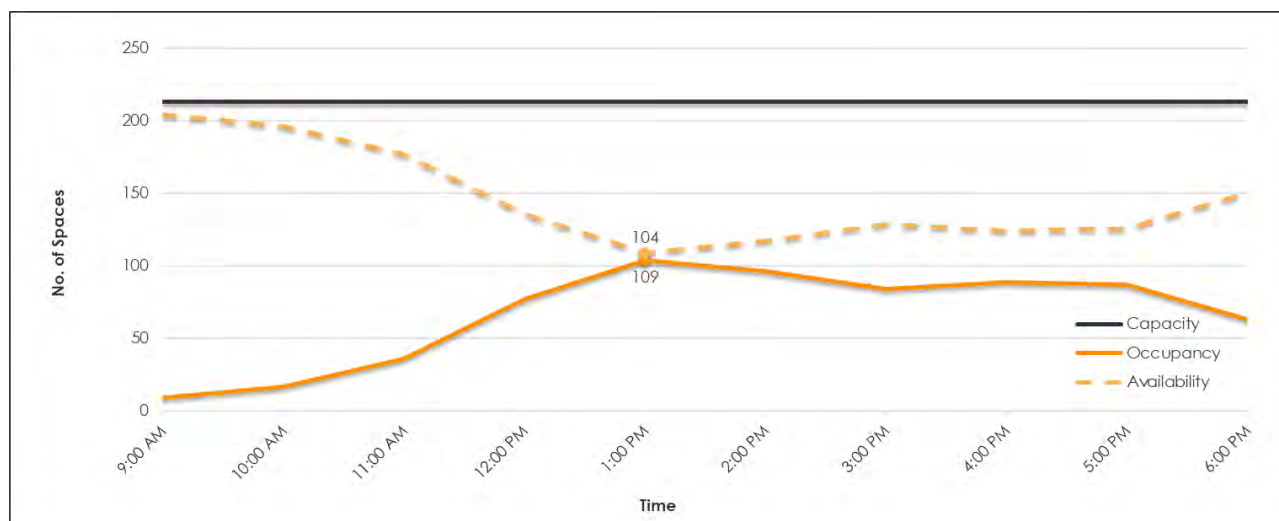
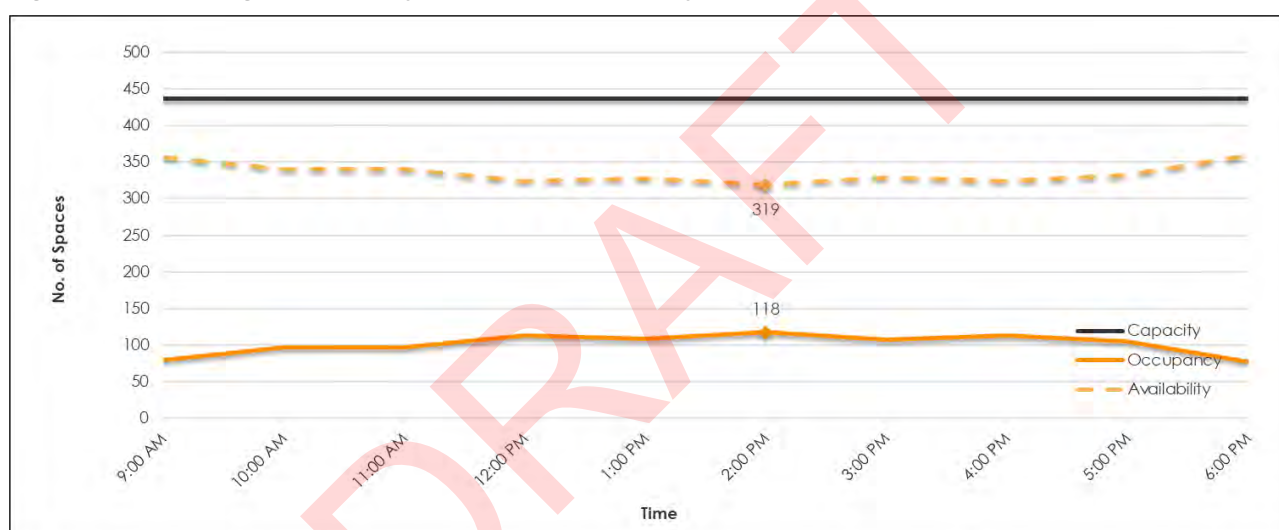


Figure 10 Parking Occupancy On- Street – Saturday 28th November 2020



On-site on the Saturday, peak occupancy occurred at 1:00 PM when 104 of the 213 spaces were occupied, leaving no fewer than 109 spaces available for use. Parking utilisation varied between 49% and 4% of capacity. During the early afternoon, the central Playground parking area was almost fully occupied, the Bowls Club car park was less than 50% occupied, and the parking adjacent to the sports field contained a maximum of 21 vehicles.

On-street on the Saturday, peak occupancy occurred at 2:00 PM when 118 spaces were occupied, leaving no fewer than 319 spaces available for use.

When the playground parking area was fully occupied, demands along Springs Road increased, suggesting overflow parking demand for approximately 10 spaces. There were no other indications of parking occurring on-street.

Figure 11 Parking Occupancy On-Site – Sunday 29th November 2020

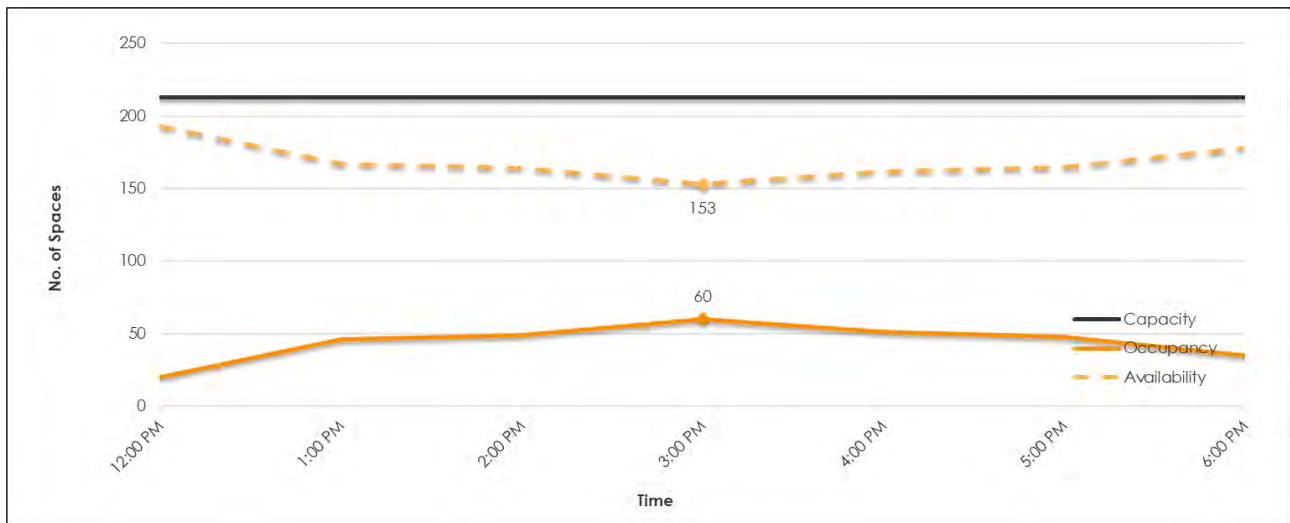
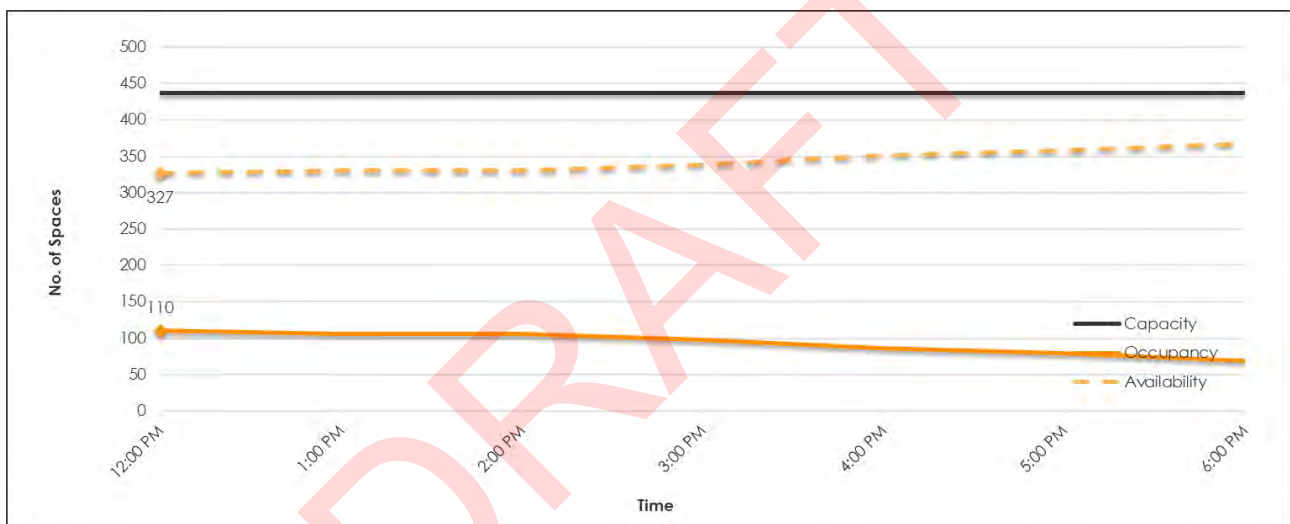


Figure 12 Parking Occupancy On- Street – Sunday 29th November 2020



On-site on the Sunday, peak occupancy occurred at 3:00 PM when 60 spaces were occupied, leaving no fewer than 153 spaces available for use. Parking utilisation varied between 28% and 9% of capacity.

At this time, 19 spaces were occupied within the sports field car park, 33 spaces within the bowls club car park, and only 8 spaces within the Playground parking area.

On-street on the Sunday, peak occupancy occurred at 12:00 PM when 110 spaces were occupied, leaving no fewer than 327 spaces available for use. Parking utilisation varied between 24% and 16% of capacity. There were no obvious indications of on-street parking attributable to users of the park.

5.1.2 Validation

For each of the survey days, we have undertaken a review of historical aerial photography data to establish the typical occupancy on-site for weekday, Saturday and Sunday periods.

In each case, the historical parking demands are roughly matched to what was observed on-site, indicating that the parking data is representative of "typical" conditions and fit for purpose.

To further validate the recorded demands associated with the use of the sports field for cricket (recording peak demands for between 19 and 21 spaces), we have undertaken a first principles assessment of likely parking demands based on the following assumptions:

- Each team would field 11 players;
- Each match would have two officials plus two coaches;
- 75% of players, coaches and officials will drive to the game and park on-site;
- Only one match would be scheduled each day; and
- There would be limited spectators.

This suggests a demand for approximately 20 parking spaces is likely to be realised for each cricket match, closely matching that observed on-site.

5.2 Master Plan Review

5.2.1 Scenario 1 – No Change

5.2.1.1 Bowls Club and Restaurant

Surveyed parking demands associated with the bowls club and restaurant are all comfortably accommodated within the on-site car park, with demands not exceeding 50% of capacity during any stage. It is acknowledged however that the survey dates may not have captured a tournament or club match at the bowls club which are likely to be critical for parking.

To provide some guidance in this regard, we have referred to the New South Wales Roads and Traffic Authority document "**Guide to Traffic Generating Developments**", which identifies peak parking rates for a range of land uses based on surveys of existing facilities. For lawn bowls facilities, the document suggests parking demands for 30 spaces for the first court (four rinks), and 15 spaces to each court thereafter.

With three courts on the subject site, we could reasonably expect demand for 60 parking spaces during peak operation, which is expected to occur on a weekend afternoon. Operation during the week, and on weekday evenings is expected to be considerably lower.

The guide also provides parking rates for restaurants, suggesting that parking should be provided at the rate of 15 spaces per 100m² of gross floor area, or 1 space per 3 seats (equivalent to 0.33 spaces per seat).

While details of the restaurant use have not been provided, we can estimate that the use occupies approximately 870m² gross floor area, and may generate demand for in the order of 130 spaces during peak operation, likely on a weekend evening. Lunch time trade is typically half that of the evening, and is estimated at approximately 65 spaces.

The existing supply of 139 spaces is therefore expected to be sufficient to cater for peak demands generated by the existing uses, with demands for approximately 125 spaces expected to be generated during the day on a weekend, and 130 spaces during the evening.

It is noted that this assessment assumes no overlap between visitors to the bowls club and restaurant uses. In practise, it is expected that there will be some patrons of the bowls club will also visit the restaurant.

5.2.1.2 Sports Field

When used for cricket over summer, demands associated with cricket matches (maximum of 21 spaces) are readily accommodated within the on-site car park with ample capacity remaining. There are some demands for match days likely recorded within the other parking areas on-site, however given the relative inconvenience accessing the sports field pavilion from these locations, it is expected that they are minimal.

We have been advised that anecdotally, the home teams tend to park within the areas adjacent to the pavilion, while away teams tend to park within the bowls club car park.

It is noted that surveys of the use were unable to be undertaken to capture winter use of the field, and the demands associated with gridiron matches or training. In assessing the parking demands likely to be generated for these events, the following assumptions have been adopted for a match day:

- Each team would field 20 players (11 on field, plus 9 substitutes);
- Each game would have two officials plus two coaches;
- 75% of players, coaches and officials will drive to the game and park on-site;
- A match day may accommodate two successive games, and approximately 50% of attendees would arrive before or depart after the next scheduled game; and
- There would be limited spectators.

The above assumptions suggest a peak demand for approximately 50 car spaces, which would also be accommodated within the existing parking supply.

It is recommended that these assumptions are validated.

5.2.1.3 Playground

For the central car park adjacent to the playground, it was observed that demands exceeded the supply of parking by approximately 10 spaces, suggesting additional parking should be provided.

We understand that parking is often observed along the accessway servicing the central car park during busy periods, though this was not identified during the periods surveyed. It is recommended that this arrangement is formalised, and the spaces line marked to provide additional parking supply, and mitigate any potential issues that uncontrolled parking may present. From a review of the accessway dimensions, this may be accommodated without modifying the existing accessway or fencing.

In addition, it is recommended that the parking design be modified to provide a turnaround bay to ensure that all drivers may exit the site in a forward direction, even if all spaces are occupied. This may result in the loss of one space.

5.2.2 Scenario 2 – Full Utilisation

This scenario considers no increase in the number of people using the facilities on-site at any one time but considers the possibility of more regular usage, including multiple matches on the weekend, or regularly scheduled training or matches during the week.

At present, the sport field is not utilised for any competition or training of a weekday evening with the exception of the South Eastern Predators Gridiron Club, who operate two nights per week.

This scenario will have minimal impact on car parking demands, with any demands associated with gridiron or cricket training expected to be less than those of a match day, and accommodated within the on-site supply.

5.2.3 Scenario 3 – Additional Sports Field

At present, we understand that only one cricket match is scheduled each weekend day, with surveys identifying an associated demand for 21 parking spaces. In addition, the above first-principles assessment of gridiron demands estimated demands for approximately 50 spaces, assuming some overlap between successive games.

In the event that an additional sports field were to be developed on the site, we would expect a doubling in parking demands associated with match play, giving potential demands for 42 spaces associated with cricket matches, and 100 spaces with gridiron matches. It is noted that this is a conservative assessment, and assumes that both fields would have matches finishing and starting at the same time.

While the existing supply of parking would cater for demands associated with two concurrent cricket games, there would be a shortfall of approximately 50 spaces during the winter gridiron games. The additional field may be utilised for an alternative winter sport (e.g. soccer, Australian rules football) in which case the shortfall in demand may reduce, but a shortfall of some description will likely persist.

Surveys on-site identified some vacancies within the bowls club car park, however on a busier day at the bowls club and restaurant, it is expected that there will remain only limited car parking for other users. If additional parking were not provided to offset the shortfall generated by an additional sports field, we expect that this would result in greater usage of the bowls club and playground car parks by users of the sports fields, likely displacing parking demands for these other uses further from their desired destination.

It is noted that the surveys identified considerable vacancies in on-street parking along the Springs Road frontage, with a minimum of 30 vacant spaces on the Saturday and 40 spaces on the Sunday. As such, there is likely to remain sufficient total capacity to accommodate all demands generated at Namatjira Park. If relying on this on-street parking to accommodate additional demands, it is recommended that improved connectivity is provided to the sports field(s) to maximise the convenience of this parking relative to the residential areas to the east. It is however preferable to provide car parking closest to the destination to ensure reasonable travel distances.

With limited capacity within the other parking areas on-site, and a desire to limit impacts to residential areas east of the park, it is recommended that additional car parking be provided to offset any shortfall generated. This parking would be preferentially located central to the park site (close to the new pavilion location) to allow for more efficient use by others in periods of low demand for the sports field, to limit potential impacts of the associated traffic through residential areas to the east, and to limit the impacts of visitors displacing parking from the bowls club and playground parking areas as they will naturally choose to park in the closest available spaces.

A conventional car park design will typically require 25-30m² per space (including accessways). This suggests between 1,250-1,500m² of additional parking area would potentially be required on-site. It is noted that formalisation and expansion of the existing pavilion car park is likely to yield an increase in capacity, reducing the additional requirements for parking.

5.2.4 Scenario 4 – Bowls Upgrade

This scenario considers the expansion or improvements to the existing bowls club facilities, potentially driving increased membership and attendance. The form of the expansion or improvements are not known at this stage, but likely comprise an additional court or renovated/modernised facilities.

Any additional court constructed is likely to attract parking demands for 15 additional spaces (see discussion above), potentially generating total demand for 75 parking spaces during peak operation.

With a supply of 139 spaces shared with the restaurant, and largely disparate peak periods of operation, this expansion will likely not have any considerable impact to parking availability.

The renovation or modernisation of existing facilities may drive some increase in attendance, but is not expected to materially alter existing parking demands.

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6 TRAFFIC

6.1 Existing Conditions

In order to establish existing activity on the site, onemilegrid commissioned surveys for each of the site access points during the following times:

- Thursday 26/11/2020 3:00pm – 7:00pm
- Saturday 28/11/2020 11:00am - 4:00pm
- Sunday 29/11/2020 12:00pm - 6:00pm

During the Thursday surveys, we understand that the bowls club and bistro were operating, and that cricket matches were scheduled for both Saturday and Sunday.

Weather observations from the Bureau of Meteorology for each day of the survey is provided below:

- Thursday 26/11/2020 19.8 degrees maximum, no rainfall
- Saturday 28/11/2020 22.6 degrees maximum, no rainfall
- Sunday 29/11/2020 18.9 degrees maximum, no rainfall

The results of the surveys are shown below, with Figure 13 to Figure 15 showing the profile of movements to and from the site, and Figure 16 to Figure 18 detailing the individual traffic movements during the respective peak periods.

Figure 13 Traffic Generation (Hourly) - Thursday

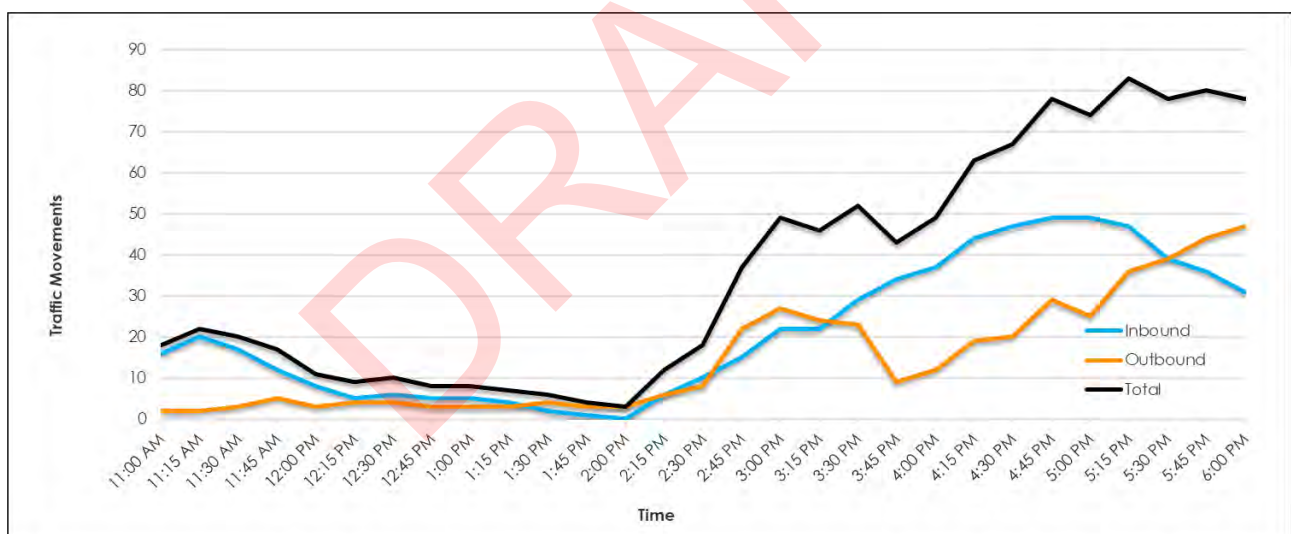


Figure 14 Traffic Generation (Hourly) - Saturday

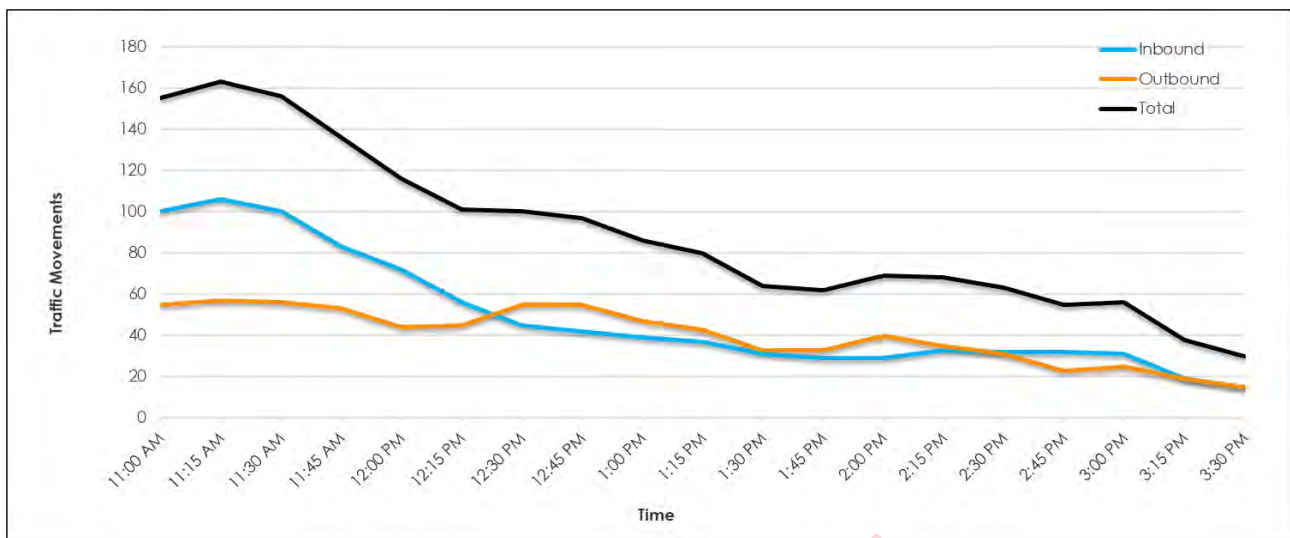
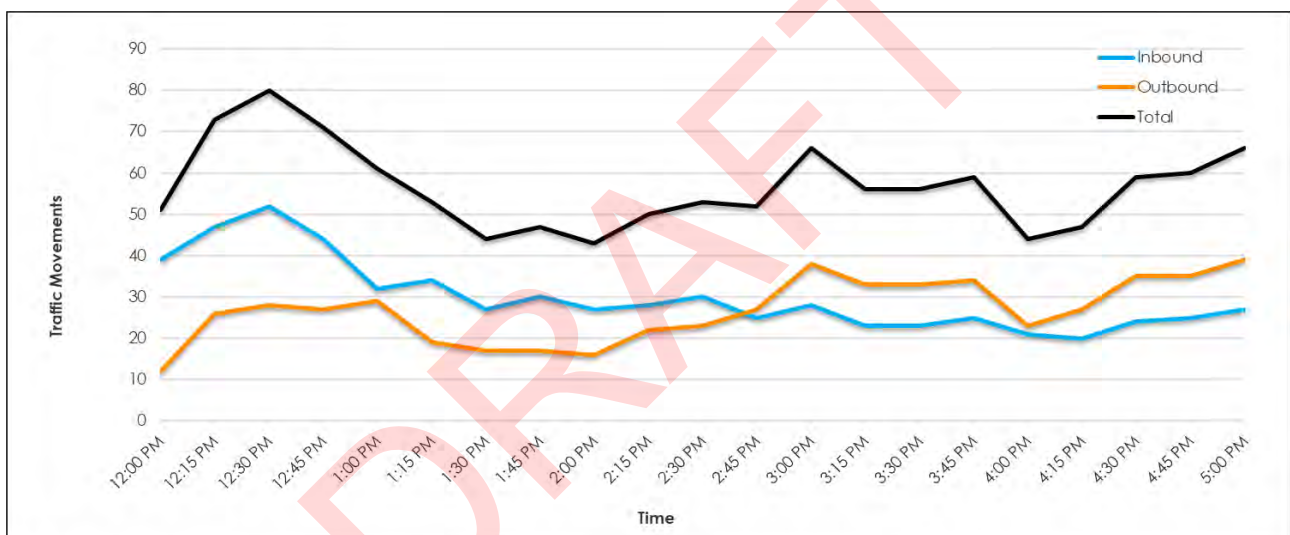


Figure 15 Traffic Generation (Hourly) - Sunday



The site is busiest on the weekday afternoon and evening at 5:15PM-6:15PM, where movements to and from the site are relatively even. Traffic is split evenly between the northern and southern Springs Road accesses, with no traffic observed via the Newport Road access.

On the Saturday, the site is busiest from 11:15AM-12:15PM, where there is a bias for inbound movements, around half of which are located at the northern bowls club access.

On the Sunday, the site is busiest from 12:30PM-1:00PM, with most traffic again distributed via the northern access, and an even proportion through the southern access and Newport Road (sports field) access.

Figure 16 Traffic Surveys – Thursday 26th November 2020

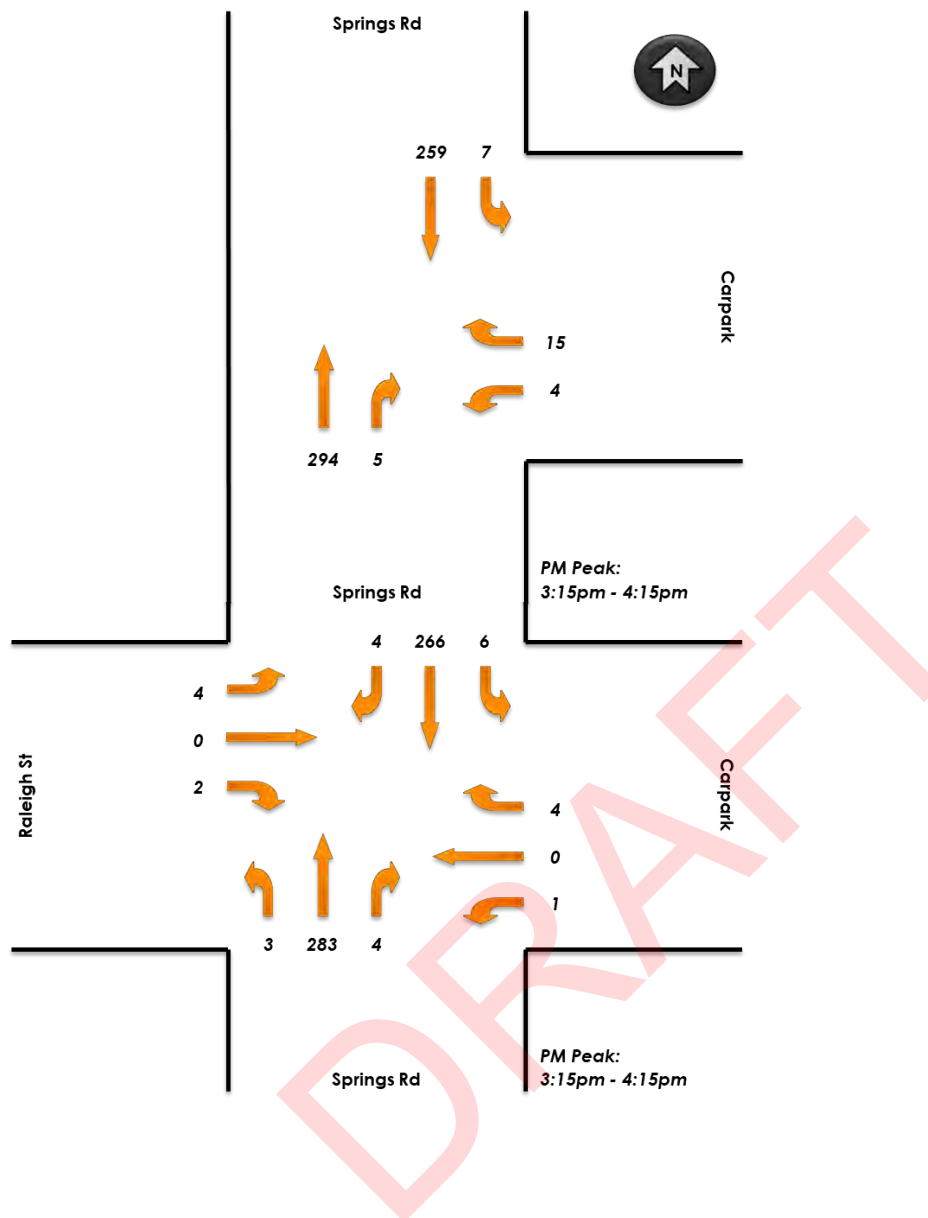


Figure 17 Traffic Surveys – Saturday 28th November 2020

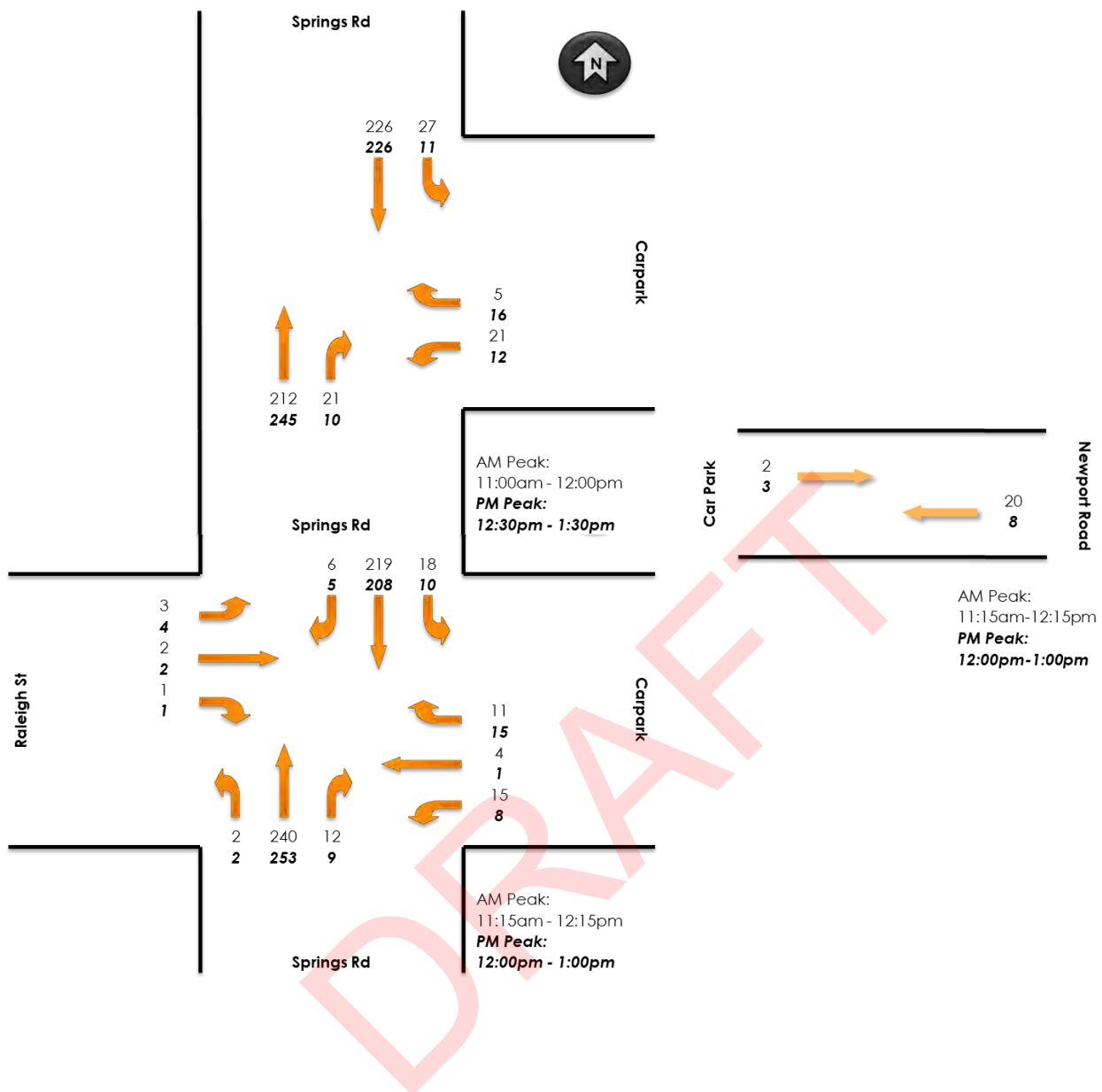
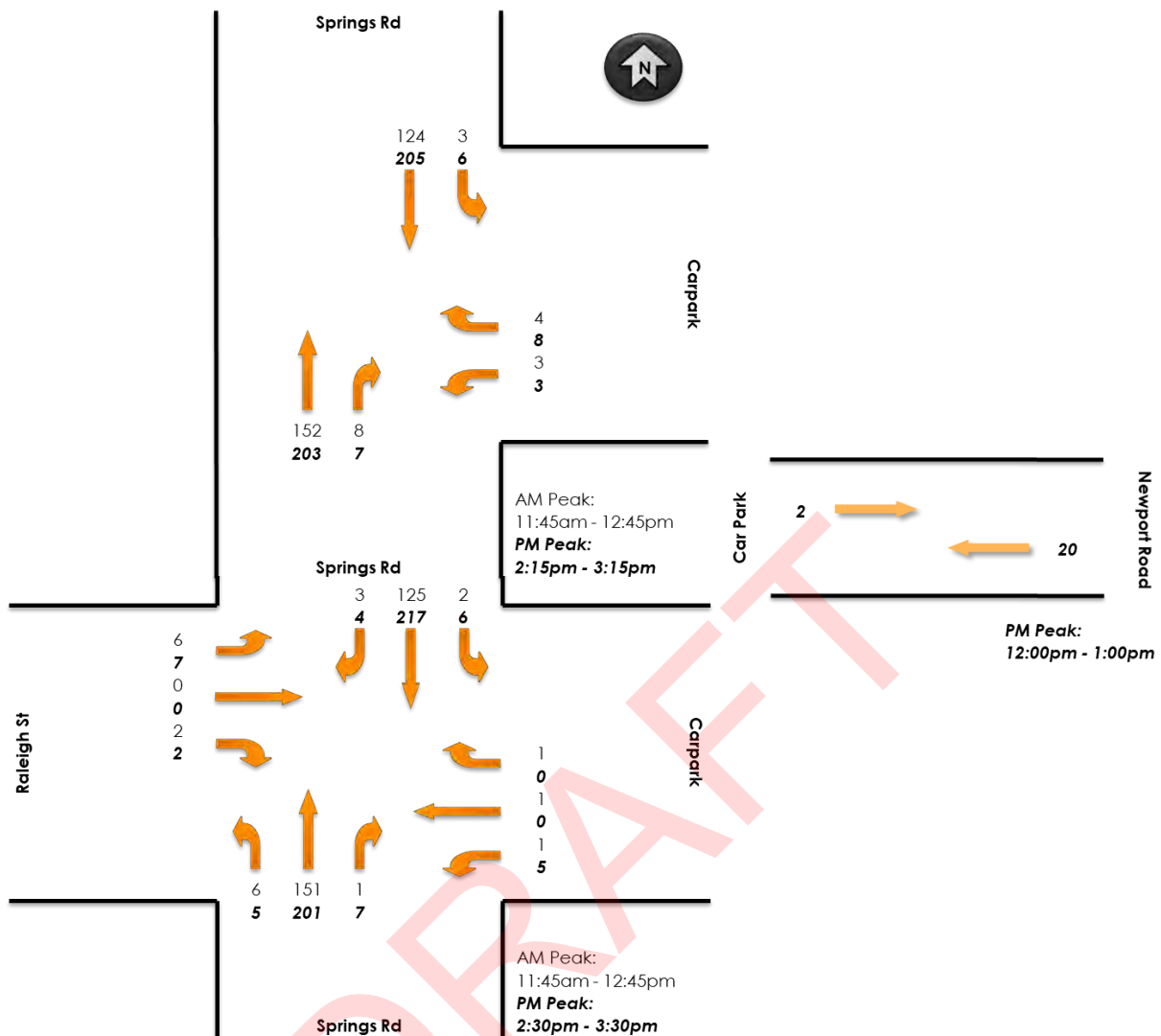


Figure 18 Traffic Surveys – Sunday 29th November 2020



To assess the operation of the intersection the traffic volumes have been input into SIDRA Intersection, a traffic modelling software package.

The SIDRA Intersection software package has been developed to provide information on the capacity of an intersection with regard to a number of parameters. Those parameters considered relevant are, Degree of Saturation (DoS), 95th Percentile Queue, and Average Delay as described below.

Table 2 SIDRA Intersection Parameters

| Parameter | Description | | | | | | | | | | | | | | |
|--|---|----------------------|--------|------------|-----------|-------------|-----------|-------------|------|-------------|------|-------------|------|------------|-----------|
| Degree of Saturation (DoS) | The DoS represents the ratio of the traffic volume making a particular movement compared to the maximum capacity for that particular movement. The value of the DoS has a corresponding rating depending on the ratio as shown below. | | | | | | | | | | | | | | |
| | <table><tr><th>Degree of Saturation</th><th>Rating</th></tr><tr><td>Up to 0.60</td><td>Excellent</td></tr><tr><td>0.61 – 0.70</td><td>Very Good</td></tr><tr><td>0.71 – 0.80</td><td>Good</td></tr><tr><td>0.81 – 0.90</td><td>Fair</td></tr><tr><td>0.91 – 1.00</td><td>Poor</td></tr><tr><td>Above 1.00</td><td>Very Poor</td></tr></table> | Degree of Saturation | Rating | Up to 0.60 | Excellent | 0.61 – 0.70 | Very Good | 0.71 – 0.80 | Good | 0.81 – 0.90 | Fair | 0.91 – 1.00 | Poor | Above 1.00 | Very Poor |
| | Degree of Saturation | Rating | | | | | | | | | | | | | |
| | Up to 0.60 | Excellent | | | | | | | | | | | | | |
| | 0.61 – 0.70 | Very Good | | | | | | | | | | | | | |
| | 0.71 – 0.80 | Good | | | | | | | | | | | | | |
| | 0.81 – 0.90 | Fair | | | | | | | | | | | | | |
| | 0.91 – 1.00 | Poor | | | | | | | | | | | | | |
| Above 1.00 | Very Poor | | | | | | | | | | | | | | |
| It is noted that whilst the range of 0.91 – 1.00 is rated as 'poor', it is acceptable for critical movements at an intersection to be operating within this range during high peak periods, reflecting actual conditions in a significant number of suburban signalised intersections. | | | | | | | | | | | | | | | |
| Average Delay (seconds) | Average delay is the time delay that can be expected for all vehicles undertaking a particular movement in seconds. | | | | | | | | | | | | | | |
| 95th Percentile (95%ile) Queue | 95%ile queue represents the maximum queue length in metres that can be expected in 95% of observed queue lengths in the peak hour | | | | | | | | | | | | | | |

The results of the analysis are provided in Table 3 and Table 4 below.

Table 3 Springs Road / Bowls Club Access – Existing Conditions

| Approach | DoS | Avg. Delay (sec) | Queue (m) |
|------------------|-------|------------------|-----------|
| Thursday PM Peak | | | |
| Springs Road (S) | 0.165 | 0.1 | 0.3 |
| Site Access (E) | 0.025 | 5.8 | 0.6 |
| Springs Road (N) | 0.146 | 0.2 | 0.0 |
| Saturday PM Peak | | | |
| Springs Road (S) | 0.142 | 0.3 | 0.6 |
| Site Access (E) | 0.031 | 5.1 | 0.8 |
| Springs Road (N) | 0.130 | 0.3 | 0.0 |
| Sunday PM Peak | | | |
| Springs Road (S) | 0.116 | 0.2 | 0.4 |
| Site Access (E) | 0.012 | 4.9 | 0.3 |
| Springs Road (N) | 0.116 | 0.2 | 0.0 |

Table 4 Springs Road / Raleigh Street / Site Access – Existing Conditions

| Approach | DoS | Avg. Delay (sec) | Queue (m) |
|--------------------|-------|------------------|-----------|
| Thursday PM Peak | | | |
| Springs Road (S) | 0.160 | 0.2 | 0.3 |
| Site Access (E) | 0.010 | 6.6 | 0.2 |
| Springs Road (N) | 0.152 | 0.3 | 0.3 |
| Raleigh Street (W) | 0.009 | 7.3 | 0.2 |
| Saturday PM Peak | | | |
| Springs Road (S) | 0.146 | 0.3 | 0.6 |
| Site Access (E) | 0.032 | 5.7 | 0.8 |
| Springs Road (N) | 0.123 | 0.4 | 0.4 |
| Raleigh Street (W) | 0.008 | 6.7 | 0.2 |
| Sunday PM Peak | | | |
| Springs Road (S) | 0.118 | 0.4 | 0.5 |
| Site Access (E) | 0.007 | 4.7 | 0.2 |
| Springs Road (N) | 0.125 | 0.3 | 0.3 |
| Raleigh Street (W) | 0.010 | 6.5 | 0.3 |

The above data suggests that both the northern and southern site accesses operate under excellent conditions with very minimal delays and queues during all periods of data collection.

Given the modest traffic volumes along Springs Road, and only minimal traffic generated from each access, there is considerable capacity to accommodate traffic volume growth.

6.2 Master Plan Review

6.2.1 Scenario 1 – No Change

As identified above, all existing accesses to Springs Road operate under excellent conditions, with minimal queues and delays and considerable capacity for growth.

While it is acknowledged that surveys undertaken on-site may not have captured peak activity, particularly associated with the bowls club and restaurant, it is not expected that the increase in traffic would be problematic given the capacity available.

Additionally, there are no clear patterns of crash history or safety risks that were observable on-site.

Noting this, the existing access arrangements are considered appropriate.

6.2.2 Scenario 2 – Full Utilisation

This scenario does not consider any increase in the intensity of use, rather it will generate the same volumes of traffic to the site more often. While the sports field is utilised sporadically in winter on weekday evenings, there are currently no training or match events on weekdays in summer.

With more regular use of the sport field during weekdays, the frequency of traffic accessing the car park from Newport Road will naturally increase. While volumes will be low (approx. 20 movements in an hour) and well within capacity, this may attract criticism from nearby residents due to increases in the regularity of non-local traffic.

6.2.3 Scenario 3 – Additional Sports Field

As noted above, the addition of another sports field on the site will double the existing traffic volumes generated to the site during the critical weekend peak periods.

For the purposes of quantifying and assessing the impact of this, and noting the recommendations within Section 5.2.3 above to establish a new central parking area to service the expansion of these uses, we have assumed that this increase in traffic is generated to and from the southern Springs Road access. In practise, some of this increase in traffic may be generated to Newport Road, and subsequently to Bond Street and Knight Street, however the increases to each road are likely to be minor only, with limited impact to any individual intersection across the wider road network.

In undertaking this assessment, we have assumed the more conservative use of the two sports fields for gridiron matches (rather than cricket) which are anticipated to generate approximately 66 traffic movements in the hour period between two successive matches, distributed evenly between inbound and outbound movements.

Superimposing this traffic onto that captured during our surveys allows an assessment of post-development traffic conditions, presented in Table 5 below.

Table 5 Springs Road / Raleigh Street / Site Access – Future Conditions

| Approach | DoS | | Avg. Delay (sec) | | Queue (m) | |
|--------------------|----------|--------|------------------|--------|-----------|--------|
| | Existing | Future | Existing | Future | Existing | Future |
| Saturday PM Peak | | | | | | |
| Springs Road (S) | 0.146 | 0.159 | 0.3 | 0.8 | 0.6 | 1.7 |
| Site Access (E) | 0.032 | 0.073 | 5.7 | 5.7 | 0.8 | 1.7 |
| Springs Road (N) | 0.123 | 0.133 | 0.4 | 0.8 | 0.4 | 0.4 |
| Raleigh Street (W) | 0.008 | 0.008 | 6.7 | 6.8 | 0.2 | 0.2 |
| Sunday PM Peak | | | | | | |
| Springs Road (S) | 0.118 | 0.140 | 0.4 | 1.3 | 0.5 | 1.8 |
| Site Access (E) | 0.007 | 0.045 | 4.7 | 5.2 | 0.2 | 1.1 |
| Springs Road (N) | 0.125 | 0.134 | 0.3 | 0.6 | 0.3 | 0.3 |
| Raleigh Street (W) | 0.010 | 0.010 | 6.5 | 6.6 | 0.3 | 0.3 |

As shown above, the site access performance is expected to marginally reduce, however it will remain operating under excellent conditions, with average delays increasing by no more than 0.5 seconds, and queues by in the order of one metre.

The addition of another sports field and the associated traffic will therefore have no material impacts, nor require any mitigation measures.

6.2.4 Scenario 4 – Bowls Upgrade

The additional parking demand for 15 spaces, and the associated traffic movements generated to the bowls facility are not expected to have any material impact on the operation of the Springs Road intersection, equating on average to one additional movement every 4 minutes.

7 ACTIVE TRANSPORT

7.1 Access

The site is will served for pedestrian access, with multiple points of entry provided from Springs Road, and a number of entry points from local roads to the south and east including Russ Street, Merlyn Avenue, Simon Street and Newport Road.

Access for cyclists is limited to sharing of traffic routes, with no formal facilities provided in the vicinity, though external links are beyond the scope of this review.

7.2 Existing Use

Strava is a social network and training tool for cyclists, runners and swimmers. Users record their physical activity using a dedicated GPS device or utilise the mobile app, and upload the file to their profile. Strava anonymises this information and makes it available through their "Global Heatmap" tool, showing aggregated all public activities over the last two years across the world.

A view of the cycling and running heatmap in proximity to the site is provided below in Figure 19. Routes of higher usage are brighter in colour.

Figure 19 Strava Heatmap



The heatmap identifies that the site is popular location for cycling and walking for fitness and recreational purposes, largely utilising the network of walking tracks within the southern portion of the site.

It is noted that this information includes all cycling and running activities recorded on the platform, inclusive of weekend trips, and all trips throughout the day.

7.3 Master Plan Review

None of the master plan scenarios will have direct impacts, positively or negatively, on pedestrian or cyclist access, however they do offer an opportunity to provide for improvements to existing facilities as part of any development works.

Internal pedestrian links to the sports field are non-existent, with no formal connections providing access to the sports field and pavilion from either Springs Road or the playground car park. These should be considered, particularly if a new central car park is established to service an additional sports field.

Further, there is currently no formal connection for pedestrians between the playground area and bowls club/restaurant, despite "goat tracks" indicating demand for the route.

No bicycle parking facilities were observed during a site inspection, offering no opportunity for a secure location to park a bicycle. It is recommended that bicycle parking hoops are established at strategic locations across the site to service the key uses (restaurant, playground, sports pavilion/field). These should be placed to ensure passive surveillance.

Bus stops are located adjacent to the sites southern Springs Road access, however no formal pedestrian crossing facilities are provided to assist with access to and from the northbound stop, except kerb outstands located south of Botany Court. Volumes of pedestrians crossing Springs Road would not warrant a crossing that provides priority to pedestrians, however a pedestrian refuge could be provided with minor modifications to parking to assist with access to and from the park.

The above recommendations are illustrated in Figure 20 below.

Figure 20 Active Transport Recommendations



appendix 8 – tree investigations

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Preliminary Tree Assessment
for
The Community Collaborative
Assessment of trees at Namatjira Park, Clayton South

Prepared by

Homewood Consulting Pty Ltd
Unit 10 / 350 Settlement Road
Thomastown VIC 3074

Prepared for

Dan Ferguson
Founder and Managing Director
The Community Collaborative

Consulting Arborists

Damien Navaud

Bachelor of Horticulture
Email: damienn@homewood.com.au

Maria Koulaginis

Graduate Certificate of Arboriculture
Bachelor of Science (Plant Science)
Email: mariak@homewood.com.au
Mobile: 0400 160 422

Wednesday, 23 December 2020

Executive Summary

The Preliminary Tree Assessment is an arboricultural report which provides an assessment of the existing trees on a property to assist the preparation of a development design. It is not an assessment of the impact of proposed development on the trees. For planning purposes, an 'Arboricultural Impact Assessment' is generally required.

346 trees were assessed at Namatjira Park Clayton South. Preliminary investigations are being undertaken in regard to proposed works on the site and the health, condition and arboriculture retention value of existing trees is assessed early in the design phase to determine any development constraints the trees may present.

All trees were assessed for their health, structure, landscape contribution and Useful Life Expectancy (ULE) and were assigned an arboricultural retention value (Table 1).

Table 1: Retention Values for assessed trees

| Retention Value | No of Trees |
|-----------------|-------------|
| Very High | 6 |
| High | 86 |
| Medium | 94 |
| Low | 160 |
| Total | 346 |

Trees assessed with a 'Very High' and/or 'High' retention value are the most significant trees on site and all reasonable efforts should be made to retain them in the landscape with any design proposal and ensure they are protected throughout works.

Trees assessed with a 'Medium' retention value are generally mature trees with structural faults or defects reducing their Useful Life Expectancy, or semi-mature trees that are well established and in good condition. As many trees as possible with Medium retention value should be incorporated into the new design. Replacement planting should be undertaken on site to compensate for the removal of any Medium retention value trees.

Trees assessed with a 'Low' retention value may be trees with poor health and/or structure, environmental weed species, young/small trees that can be easily replaced in the landscape, or trees which are otherwise not suitable to be retained with a new development. These trees are not worthy of impeding development and generally do not need to be incorporated into the development design.

A.1 It is recommended that:

1. Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) dimensions are depicted to scale for trees to be retained, on all design plans.
2. The tree retention values, TPZ and SRZ dimensions detailed within this report are used to determine site constraints.
3. The design team maintains regular contact with the Project Arborist to ensure the design is sensitive to the protection requirements of trees worthy of retention and that the trees will not be compromised by the proposed design. Design considerations are provided in Section 6.
4. Following completion of a proposed design, the plans are assessed by the Project Arborist to determine the impact to the trees (Arboricultural Impact Assessment).

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1. Introduction

Homewood Consulting Pty Ltd has been engaged to provide a preliminary tree assessment report on existing trees at Namatjira Park, Clayton South.

It is proposed to redevelop the site and an arborist report is required to assess the health and condition and arboricultural retention value of the trees, to assist in the design phase and determine any site constraints the trees may present.

A feature survey plan has been supplied by The Community Collaborative (Moonland Group M2276 -AI 4/12/2020). This plan has been used to locate the trees on site.

This report provides Tree Protection Zone (TPZ) dimensions, Structural Root Zone Dimensions (SRZ) and design considerations in accordance with the Australian Standard (AS 4970-2009) *Protection of Trees on Development Sites* for the subject trees.

2. Method

On Monday 14 December, Wednesday 16 December, Thursday, 17 December 2020, Friday 18 December and Saturday 19 December Maria Koulaginis conducted a site inspection.

Data collected for the trees included:

- Photograph
- Botanical Name
- Canopy Dimensions
- Diameter at Breast Height (DBH)
- Diameter above basal root flare
- Health
- Structure
- Useful Life Expectancy (ULE)
- Landscape Contribution
- Retention Value.

A 'Visual Tree Assessment' (VTA) was conducted for each tree. A VTA consists of a detailed visual inspection of a tree and its surrounding site, including a complete walk around the tree, looking at the buttress roots, trunk, branches and leaves. The tree is observed from a distance and close up to consider crown shape, landscape context and surroundings.

17 groups of trees have been included within the assessments and are included as Trees 87, 96, 225, 231, 232, 239, 241, 245, 265, 293, 301, 302, 303, 330, 337, 338, 343. Each of these tree points include individuals of similar size and species. All groups of trees have been referred to as single tree points throughout this report.

Table 2: Tree groupings

| Tree ID Number | Number of individuals |
|----------------|-----------------------|
| 87 | 10 |
| 96 | 10 |
| 225 | 3 |
| 231 | 4 |
| 232 | 2 |
| 239 | 4 |
| 241 | 2 |
| 245 | 2 |
| 265 | 3 |

| Tree ID Number | Number of individuals |
|----------------|-----------------------|
| 293 | 5 |
| 301 | 4 |
| 302 | 3 |
| 303 | 2 |
| 330 | 2 |
| 337 | 4 |
| 338 | 10 |
| 343 | 5 |

The assessment was conducted from ground level with no instruments used other than a diameter tape to measure trunk diameter. Any assessments of decay are qualitative only.

A feature survey plan has been supplied by The Community Collaborative (Moonland Group M2276 -AI 4/12/2020). This plan has been used to locate the trees on-site.

Assessment area does not include the entirety of Namatjira Park, further details of assessment area can be seen in Appendix 2.1 (page 39).

As requested by Community Collaborative (pers Comms Daniel Ferguson 16/12/2020) only perimeter trees were collected in areas of dense vegetation. Areas where only perimeter trees were collected can be seen in Appendix 2.2 (page 40).

Appendix 1 shows the data collected for the trees. For definitions and descriptors of the data collected on site see Appendix 2.

3. Tree Overview

346 trees have been assessed. All assessed trees are within Namatjira Park and are owned by Kingston City Council.

Assessed trees have a range of maturities from newly planted staked trees to large remnant indigenous trees. Assessed trees are of native and indigenous origin. No exotic trees have been assessed on site.

The most prolific species on site is *Eucalyptus camaldulensis* (River Red Gum) with 113 individuals. River Red Gums are indigenous to the area and multiple large and mature individuals can be seen across the assessed area (Figure 1).



Figure 1: Large mature River Red Gums across the site.

The majority of trees are in 'Good' health and 'Fair' structure. Hollows can be seen in large trees with decay located in upper canopies. Trees 30, 33 and 313 are dead.

90 trees have a high landscape contribution. These are large trees that add character and aesthetic value to the landscape.

Majority of assessed trees are expected to remain in the landscape long term with 265 of the assessed trees having a useful life expectancy greater than 20 years, 28 of the 346 trees assessed have a useful life expectancy of under 10 years. Useful Life Expectancy is an approximation of how long a tree can be retained safely and usefully in the landscape with an acceptable level of risk.

Table 3: Species assessed

| Botanical Name | Common Name | Number of Individuals |
|---|--------------------------------|-----------------------|
| <i>Eucalyptus camaldulensis</i> | River Red Gum | 113 |
| <i>Eucalyptus radiata</i> | Narrow-leaved Peppermint | 37 |
| <i>Eucalyptus botryoides</i> | Southern Mahogany | 34 |
| <i>Angophora costata</i> | Smooth-barked Apple Myrtle | 27 |
| <i>Eucalyptus ovata</i> | Swamp Gum | 19 |
| <i>Acacia melanoxylon</i> | Blackwood | 9 |
| <i>Eucalyptus melliodora</i> | Yellow Box | 9 |
| <i>Acacia implexa</i> | Lightwood | 8 |
| <i>Eucalyptus saligna</i> | Sydney Blue Gum | 8 |
| <i>Eucalyptus cinerea</i> | Mealy Stringybark | 7 |
| <i>Corymbia ficifolia</i> | Flowering Gum | 6 |
| <i>Eucalyptus sideroxylon</i> | Red Ironbark | 6 |
| <i>Allocasuarina littoralis</i> | Black She-oak | 6 |
| <i>Eucalyptus globulus</i> | Blue Gum | 6 |
| <i>Acacia dealbata</i> | Silver Wattle | 5 |
| <i>Melaleuca linariifolia</i> | Snow in Summer | 4 |
| <i>Corymbia citriodora</i> | Lemon-scented Gum | 4 |
| <i>Casuarina cunninghamiana</i> | River She-oak | 4 |
| <i>Eucalyptus leucoxylon</i> | Yellow Gum | 3 |
| <i>Corymbia maculata</i> | Spotted Gum | 3 |
| <i>Eucalyptus polyanthemos</i> | Red Box | 2 |
| <i>Melaleuca styphelioides</i> | Prickly Paperbark | 2 |
| <i>Agonis flexuosa</i> | West Australian Willow Myrtle | 2 |
| <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Gippsland Manna Gum | 2 |
| <i>Angophora floribunda</i> | Rough Barked Apple | 2 |
| <i>Melaleuca armillaris</i> | Giant Honey Myrtle | 2 |
| <i>Eucalyptus mannifera</i> | Brittle Gum | 2 |
| <i>Eucalyptus yarraensis</i> | Yarra Gum | 2 |
| <i>Pittosporum undulatum</i> | Sweet Pittosporum | 2 |
| <i>Eucalyptus nicholii</i> | Narrow-leaved Black Peppermint | 2 |
| <i>Acacia floribunda</i> | Catkin Wattle | 1 |
| <i>Melia azedarach</i> | White Cedar | 1 |
| <i>Acacia longifolia</i> var. <i>sophorae</i> | Coast Wattle | 1 |
| <i>Allocasuarina verticillata</i> | Drooping She Oak | 1 |
| <i>Eucalyptus viminalis</i> | Manna Gum | 1 |
| <i>Callistemon 'Kings Park Special'</i> | Crimson Bottlebrush | 1 |
| <i>Eucalyptus scoparia</i> | Wallangarra Gum | 1 |
| <i>Callistemon citrinus</i> | Crimson Bottle Brush | 1 |

3.1 Retention Value

92 trees have a 'Very High or 'High' retention value. Trees in these categories are generally large trees and the most significant trees on site. These trees are all mature specimens with good or fair health and structure and a high or medium landscape contribution. They are expected to be assets in the landscape for the long-term. All efforts should be made to incorporate these trees into any new development/design.

94 have a 'Medium' retention value. Trees in this category are generally mature trees in good or fair condition with a structural fault that may require arboricultural input or semi-mature trees that are well established and in good condition. Where practical, design modifications should be considered to retain and protect these trees from arboricultural impact. Replacement planting should be undertaken on site to compensate for the removal of any Medium retention value trees.

160 have a 'Low' retention value. Trees in this category may be trees with poor health and/or structure, environmental weed species, young/small trees that can be easily replaced in the landscape, or trees which are otherwise not suitable to be retained with a new development. These trees are not worthy of impeding development and generally do not need to be incorporated into the development design.

For a more detailed description of retention values see Appendix 3.

Table 4: Summary of Retention value

| Retention Category | No of Trees |
|--------------------|-------------|
| Very High | 6 |
| High | 86 |
| Medium | 94 |
| Low | 160 |
| Total | 346 |

4. Design Proposal

It is proposed to redevelop the existing oval as well as multiple access paths and facilities within Namatjira Park, Clayton.



Figure 2: Existing oval and surrounding trees at Namatjira Park.

Any design for development of the site needs to consider the existing vegetation. Tree protection measures need to be employed to ensure trees worthy of retention are identified and are incorporated into the design so they can continue to be assets in the landscape following development.

All retained trees require protection and the best way to protect trees is to establish a Tree Protection Zone (TPZ).

5. Introduction to Tree Protection Zone (TPZ)

The Tree Protection Zone (TPZ) is the principal means of protecting trees on development sites. It is a combination of the root area and crown area which is isolated from construction disturbance, so that the tree remains viable. The TPZ incorporates the Structural Root Zone (SRZ); the area around the base of a tree required for the tree's stability in the ground, with the woody root growth and soil cohesion in this area necessary to hold the tree upright. Further description of the TPZ and SRZ, and methods used for their calculation can be seen in 3.1.

Arboricultural impact is determined based on the level of encroachment into the TPZ of a tree as specified in Australian Standard AS 4970-2009 Protection of Trees on Development Sites. If the proposed encroachment is less than 10% of the area of the TPZ and is outside the SRZ ('minor' encroachment), detailed root investigations should not be required. The area lost to this encroachment may require compensation by extending the TPZ into the undeveloped area. Where the proposed encroachment is greater than 10% of the TPZ or inside the SRZ ('major' encroachment), the Project Arborist must demonstrate how, or if, the tree will remain viable.

Table 5 on page 14 displays the assessment data for all trees, including retention values and the dimensions of the TPZs and SRZs.

6. Changed Land Use

A new development can often change the occupancy of parts of the site and some trees that would be considered 'manageable' in the present landscape may be inappropriate in a changed landscape. For example trees with obvious structural faults may present an unacceptable risk next to busy paths or in a high profile location frequented by pedestrians. If the land use around the tree changes (to higher frequency of pedestrians) then the same tree may be considered to have a higher risk of harm potential. Works may be necessary to reduce the risk, the design may require altering or the tree removed.

7. Tree Sensitive Design and Construction

To minimise impact from construction within the TPZ of retained trees, the following alternative and root sensitive construction methods should be considered at the design stage.

7.1 Soil Compaction or Fill

One of the most common impacts to trees on construction sites is changes to the soil environment where roots are growing. Roots need access to soil nutrients, water, oxygen and other gases in the atmosphere in order to survive.

Soil compaction or fill (imported material greater than 100mm depth above natural grade) can inhibit these processes and should be avoided within the TPZ of retained trees. Soil compaction 'squashes' the pores in the soil while fill can create an impermeable layer over existing soil. Both processes can reduce or completely prevent water infiltration and gas exchange with the soil. This can lead to a decline in tree health and even death. Continuous pedestrian traffic, cars, trucks and earth moving machinery can all cause soil compaction.

7.2 Tree Sensitive Footings (Pier and Beam, Stumps, Screw Pile Footings)

Buildings constructed on pier and beam, screw pile or stump footings (as opposed to traditional slab or trench foundations) generally have a lower impact on surrounding vegetation because soil excavation is kept to a minimum. Individual holes for piers or stumps are less likely to damage tree roots compared with a large excavation for a slab or a continual open trench. If a pier and beam system is to be utilised the beam must be above grade and not installed via excavation or trenching.

Some flexibility in the placement of the footings is required to ensure that if any significant roots are discovered (i.e. greater than 30mm diameter), the footing location can be adjusted to avoid root damage. In some instances where the footing location cannot be altered, a root investigation may be required prior to excavation.

7.3 Driveways, paths and paved areas

Hard surfaces, including driveways, paths and paved areas should be constructed from a permeable or porous material within the TPZ of trees to be retained, and the material laid at or above grade. There should be minimal compaction of the material and no compaction of the subgrade.

Permeable materials reduce runoff, allow water to penetrate through the soil and facilitate gas exchange with the atmosphere, thereby maintaining a high soil oxygen level (Ferguson 2005).

Figure 3 provides an example of porous paving using Eco-Trihex pavers, which may be applicable for paved areas. Figure 4 provides an example of rubber paving (flexible and permeable) and a completed porous path.



Figure 3: Eco-Trihex Paving around a fig tree.



Figure 4: Installation of rubber paving (L) and a finished path (R).

7.4 Boardwalks

Creating a boardwalk underneath the canopies of trees reduces the impact as only post holes need to be dug (rather than large scale earth scraping and cutting to create a level path) minimising soil disturbance. Soil compaction from human and vehicular traffic is also eliminated.

It is important that the boardwalk sits a few centimetres above grade to avoid compaction of the soil. Planks should have a minimum of 3mm between to allow water to filter down to the soil and roots below.

Figure 5 & Figure 6 provide a schematic of a boardwalk designed to minimise tree impacts.

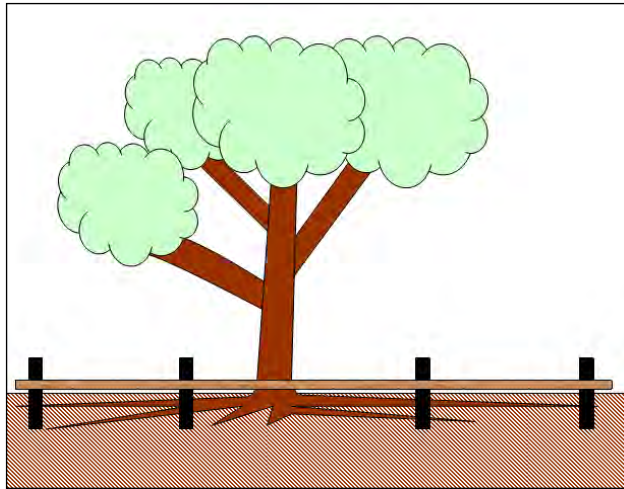


Figure 5: Approximate boardwalk design.

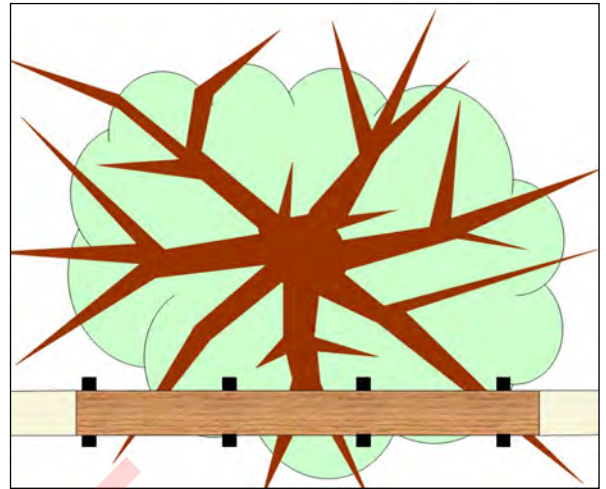


Figure 6: Aerial view of boardwalk design.

7.5 Landscaping

Soft and hard landscaping within Tree Protection Zones should be assessed by the Project Arborist at the design stage, and prior to the commencement of works. In general:

- There should be no grade changes within the TPZ of trees to be retained. If a level surface is required, no more than 100mm of fill (e.g. topsoil or crushed rock) should be used.
- There should be no soil preparation for landscaping (cultivation, replacement of existing substrate or compaction) within the TPZ of trees to be retained.
- Excavation for planting holes, fence posts, garden edging, etc. should be undertaken manually within the TPZ of trees to be retained. If significant roots (greater than 30mm diameter) are encountered these are to be retained unscathed and the location of the landscape component shifted. Any small roots are to be cleanly pruned by the Project Arborist, at right angles, using sharp, clean tools.

7.6 Underground services

Underground services within Tree Protection Zones should be assessed by the Project Arborist at the design stage, and prior to the commencement of works.

- All underground services (including water, sewage, electricity, gas and communications) should be located outside of the TPZ of trees to be retained.
- If underground services are to be routed within an established TPZ, they should be installed by directional boring with the top of the bore to be a minimum depth of 800mm below the existing grade.
- Bore pits should be located outside of the TPZ or manually excavated under the direct supervision of the Project Arborist.

8. Ideal Workflow

An ideal workflow for key stages of tree protection within the development process has been formulated and these steps are often required to obtain planning permits. The following workflow will ensure that the development process runs smoothly and optimal protection is afforded to the trees, thereby promoting tree health and stability and allowing for long-term retention in the landscape.

- ✓ Preliminary Tree Assessment report prepared by Project Arborist
- ✓ Calculate TPZs and SRZs for those trees suitable for retention
- Use the Preliminary Tree Assessment to aid the design process and determine which trees should be retained
- Consult with the Project Arborist to determine suitable tree protection measures
- Submit the design to the Project Arborist who will prepare the Arboricultural Impact Assessment & Tree Management Plan
- Establish Tree Protection Zones and other tree protection measures on site
- Site induction, supervision of works and tree protection certification by Project Arborist over course of project.

9. References

AS 4970 - 2009, *Australian Standard, Protection of Trees on Development Sites*, Standards Australia.

AS 4373 - 2007, *Australian Standard, Pruning of Amenity Trees*, Standards Australia.

Biddle, P.G., 1998, *Tree root damage to buildings, Causes, Diagnosis and Remedy*, Willowmead Publishing Ltd., Wantage, UK.

Ferguson, B. K., 2005, *Porous Pavements*, CRC Press, Florida.

Mattheck, C. and Breloer, H. 1994, *The body language of trees: a handbook for failure analysis*, London: HMSO.

Appendix 1. Tree Assessments

Table 5: Tree Assessment table

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|----|-------------------------------|--------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|----------------------|----------------|----------------|
| 1 | <i>Corymbia ficifolia</i> | Native | 4 x 5 | 32 | Mature | Good | Fair | 20 - 40 | Medium | | 3.84 | 2.05 |
| 2 | <i>Eucalyptus botryoides</i> | Native | 16 x 12 | 100 | Mature | Good | Fair | 40+ | High | Nest in upper canopy | 12 | 3.67 |
| 3 | <i>Corymbia ficifolia</i> | Native | 3 x 4 | 17 | Semi mature | Good | Fair | 20 - 40 | Low | | 2.04 | 1.82 |
| 4 | <i>Angophora costata</i> | Native | 9 x 5 | 29 | Semi mature | Good | Fair | 20 - 40 | Medium | | 3.48 | 2.05 |
| 5 | <i>Angophora costata</i> | Native | 10 x 6 | 30 | Mature | Good | Fair | 20 - 40 | Medium | | 3.6 | 2.13 |
| 6 | <i>Angophora costata</i> | Native | 11 x 5 | 28 | Mature | Good | Fair | 20 - 40 | Medium | | 3.36 | 2.1 |
| 7 | <i>Angophora costata</i> | Native | 11 x 7 | 48 | Mature | Good | Fair | 20 - 40 | Medium | | 5.76 | 2.49 |
| 8 | <i>Angophora costata</i> | Native | 7 x 8 | 35 | Mature | Good | Good | 40+ | Medium | | 4.2 | 2.25 |
| 9 | <i>Eucalyptus sideroxylon</i> | Native | 10 x 8 | 45 | Mature | Good | Fair | 40+ | High | | 5.4 | 2.49 |
| 10 | <i>Corymbia ficifolia</i> | Native | 3 x 4 | 19 | Semi mature | Good | Fair | 20 - 40 | Low | | 2.28 | 1.79 |
| 11 | <i>Eucalyptus sideroxylon</i> | Native | 11 x 9 | 60 | Mature | Good | Fair | 40+ | High | | 7.2 | 2.74 |
| 12 | <i>Eucalyptus sideroxylon</i> | Native | 9 x 7 | 38 | Mature | Good | Fair | 40+ | Medium | | 4.56 | 2.41 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------|----------------|----------------|
| 13 | <i>Corymbia ficifolia</i> | Native | 3 x 5 | 16 | Semi mature | Good | Fair | 40+ | Low | | 2 | 1.79 |
| 14 | <i>Eucalyptus botryoides</i> | Native | 21 x 13 | 106 | Mature | Good | Fair | 40+ | Very High | Hollow in upper canopy | 12.72 | 3.63 |
| 15 | <i>Eucalyptus botryoides</i> | Native | 16 x 12 | 63 | Mature | Fair | Fair | 20 - 40 | High | | 7.56 | 2.85 |
| 16 | <i>Eucalyptus botryoides</i> | Native | 13 x 9 | 50 | Mature | Good | Fair | 20 - 40 | High | | 6 | 2.71 |
| 17 | <i>Eucalyptus botryoides</i> | Native | 15 x 10 | 60 | Mature | Good | Fair | 20 - 40 | High | | 7.2 | 2.76 |
| 18 | <i>Eucalyptus botryoides</i> | Native | 12 x 10 | 32 | Mature | Fair | Fair | 10 - 20 | Medium | | 3.84 | 2.28 |
| 19 | <i>Eucalyptus botryoides</i> | Native | 17 x 11 | 57 | Mature | Fair | Fair | 20 - 40 | High | | 6.84 | 3.08 |
| 20 | <i>Eucalyptus botryoides</i> | Native | 11 x 7 | 31 | Mature | Fair | Fair | 20 - 40 | Medium | | 3.72 | 2.15 |
| 21 | <i>Eucalyptus botryoides</i> | Native | 15 x 10 | 43 | Mature | Fair | Fair | 20 - 40 | Medium | | 5.16 | 2.51 |
| 22 | <i>Eucalyptus botryoides</i> | Native | 18 x 10 | 91 | Mature | Good | Fair | 20 - 40 | High | Multistemmed, Hollow in canopy | 10.92 | 3.24 |
| 23 | <i>Eucalyptus botryoides</i> | Native | 17 x 15 | 94 | Mature | Fair | Good | 40+ | Very High | | 11.28 | 3.44 |
| 24 | <i>Eucalyptus scoparia</i> | Native | 12 x 11 | 77 | Mature | Good | Fair | 20 - 40 | High | | 9.24 | 3.21 |
| 25 | <i>Casuarina cunninghamiana</i> | Native | 13 x 9 | 98 | Mature | Good | Good | 20 - 40 | High | | 11.76 | 3.52 |
| 26 | <i>Eucalyptus camaldulensis</i> | Indigenous | 20 x 9 | 80 | Mature | Fair | Fair | 20 - 40 | High | | 9.6 | 3.21 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|----|---------------------------------|------------|--------------------|----------|-----------|--------|-----------|-------------|-----------------|--------------------------------------|----------------|----------------|
| 27 | <i>Eucalyptus mannifera</i> | Native | 22 x 14 | 134 | Mature | Good | Fair | 40+ | Very High | | 15 | 3.91 |
| 28 | <i>Eucalyptus viminalis</i> | Indigenous | 16 x 11 | 79 | Mature | Good | Fair | 20 - 40 | High | | 9.48 | 3.2 |
| 29 | <i>Eucalyptus radiata</i> | Indigenous | 13 x 15 | 70 | Mature | Poor | Poor | 5 - 10 | Low | | 8.4 | 2.93 |
| 30 | <i>Eucalyptus radiata</i> | Indigenous | 8 x 10 | 68 | Mature | Dead | Poor | Zero | Low | | 8.16 | 2.76 |
| 31 | <i>Casuarina cunninghamiana</i> | Native | 11 x 10 | 59 | Mature | Good | Fair | 40+ | Medium | | 7.08 | 2.74 |
| 32 | <i>Eucalyptus radiata</i> | Indigenous | 10 x 11 | 68 | Mature | Fair | Very poor | Zero | Low | | 8.16 | 2.85 |
| 33 | <i>Eucalyptus radiata</i> | Indigenous | 15 x 10 | 73 | Mature | Dead | Poor | Zero | Low | | 8.76 | 3.01 |
| 34 | <i>Eucalyptus botryoides</i> | Native | 16 x 15 | 66 | Mature | Fair | Good | 40+ | High | | 7.92 | 2.88 |
| 35 | <i>Eucalyptus botryoides</i> | Native | 16 x 14 | 58 | Mature | Fair | Fair | 20 - 40 | Medium | Decay throughout canopy | 6.96 | 2.85 |
| 36 | <i>Eucalyptus radiata</i> | Indigenous | 13 x 12 | 52 | Mature | Poor | Fair | 1 - 5 | Low | | 6.24 | 2.69 |
| 37 | <i>Eucalyptus botryoides</i> | Native | 15 x 13 | 72 | Mature | Fair | Poor | 20 - 40 | Medium | Remove splitting branch towards oval | 8.64 | 2.97 |
| 38 | <i>Eucalyptus botryoides</i> | Native | 13 x 12 | 64 | Mature | Fair | Fair | 10 - 20 | Medium | | 7.68 | 2.88 |
| 39 | <i>Eucalyptus radiata</i> | Indigenous | 12 x 11 | 73 | Mature | Fair | Poor | 5 - 10 | Medium | | 8.76 | 3.08 |
| 40 | <i>Eucalyptus camaldulensis</i> | Indigenous | 14 x 12 | 85 | Mature | Good | Poor | 5 - 10 | Low | Nest in upper canopy | 10.2 | 3.22 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------|----------------|----------------|
| 41 | <i>Eucalyptus camaldulensis</i> | Indigenous | 15 x 12 | 74 | Mature | Good | Fair | 10 - 20 | Medium | | 8.88 | 3.09 |
| 42 | <i>Angophora costata</i> | Native | 16 x 10 | 76 | Mature | Good | Good | 40+ | High | | 9.12 | 3.06 |
| 43 | <i>Eucalyptus leucoxylon</i> | Native | 9 x 7 | 19 | Semi mature | Fair | Fair | 20 - 40 | Medium | Overshadowed by adjacent trees | 2.28 | 1.82 |
| 44 | <i>Eucalyptus nicholii</i> | Native | 13 x 12 | 77 | Mature | Good | Fair | 20 - 40 | High | | 9.24 | 3.03 |
| 45 | <i>Eucalyptus camaldulensis</i> | Indigenous | 14 x 7 | 51 | Mature | Good | Good | 40+ | High | | 6.12 | 2.83 |
| 46 | <i>Eucalyptus globulus</i> | Native | 16 x 15 | 125 | Mature | Good | Good | 40+ | Very High | | 15 | 3.88 |
| 47 | <i>Casuarina cunninghamiana</i> | Native | 12 x 9 | 72 | Mature | Good | Fair | 40+ | High | | 8.64 | 3.09 |
| 48 | <i>Corymbia maculata</i> | Native | 20 x 12 | 65 | Mature | Good | Good | 40+ | High | Nest in upper canopy | 7.8 | 3 |
| 49 | <i>Corymbia maculata</i> | Native | 15 x 12 | 66 | Mature | Good | Good | 40+ | High | | 7.92 | 2.98 |
| 50 | <i>Eucalyptus cinerea</i> | Native | 7 x 4 | 30 | Semi mature | Good | Fair | 40+ | Medium | | 3.6 | 2.13 |
| 51 | <i>Eucalyptus cinerea</i> | Native | 6 x 3 | 25 | Semi mature | Good | Fair | 40+ | Medium | | 3 | 1.97 |
| 52 | <i>Angophora floribunda</i> | Native | 11 x 7 | 42 | Mature | Good | Fair | 40+ | High | | 5.04 | 2.45 |
| 53 | <i>Angophora floribunda</i> | Native | 13 x 5 | 36 | Mature | Fair | Fair | 20 - 40 | Medium | | 4.32 | 2.39 |
| 54 | <i>Eucalyptus botryoides</i> | Native | 18 x 8 | 117 | Mature | Good | Fair | 20 - 40 | Very High | Hollow in trunk, Bird damage | 14.04 | 3.65 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|----|---------------------------------|------------|--------------------|----------|-------------|-----------|-----------|-------------|-----------------|----------|----------------|----------------|
| 55 | <i>Eucalyptus cinerea</i> | Native | 10 x 5 | 37 | Mature | Excellent | Good | 40+ | Medium | | 4.44 | 2.37 |
| 56 | <i>Eucalyptus cinerea</i> | Native | 8 x 5 | 32 | Mature | Good | Good | 40+ | Medium | | 3.84 | 2.32 |
| 57 | <i>Eucalyptus cinerea</i> | Native | 6 x 5 | 26 | Semi mature | Good | Fair | 40+ | Medium | | 3.12 | 2.02 |
| 58 | <i>Eucalyptus cinerea</i> | Native | 10 x 7 | 49 | Mature | Good | Fair | 40+ | High | | 5.88 | 2.57 |
| 59 | <i>Angophora costata</i> | Native | 7 x 5 | 22 | Semi mature | Good | Fair | 40+ | Medium | | 2.64 | 1.88 |
| 60 | <i>Angophora costata</i> | Native | 8 x 5 | 28 | Semi mature | Good | Fair | 20 - 40 | Medium | | 3.36 | 1.97 |
| 61 | <i>Allocasuarina littoralis</i> | Indigenous | 9 x 5 | 42 | Mature | Good | Fair | 20 - 40 | Medium | | 5.04 | 2.47 |
| 62 | <i>Allocasuarina littoralis</i> | Indigenous | 10 x 8 | 50 | Mature | Good | Fair | 20 - 40 | Medium | | 6 | 2.63 |
| 63 | <i>Allocasuarina littoralis</i> | Indigenous | 9 x 5 | 29 | Mature | Fair | Fair | 10 - 20 | Medium | | 3.48 | 2.2 |
| 64 | <i>Allocasuarina littoralis</i> | Indigenous | 9 x 8 | 38 | Mature | Fair | Fair | 20 - 40 | Medium | | 4.56 | 2.43 |
| 65 | <i>Eucalyptus camaldulensis</i> | Indigenous | 3 x 1 | 4 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 66 | <i>Eucalyptus polyanthemos</i> | Indigenous | 3 x 1 | 3 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 67 | <i>Angophora costata</i> | Native | 3 x 1 | 3 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 68 | <i>Eucalyptus globulus</i> | Native | 4 x 3 | 11 | Semi mature | Good | Good | 40+ | Low | | 2 | 1.5 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|----------------------|----------------|----------------|
| 69 | <i>Angophora costata</i> | Native | 2 x 1 | 3 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 70 | <i>Eucalyptus camaldulensis</i> | Indigenous | 8 x 6 | 40 | Mature | Good | Fair | 20 - 40 | Medium | | 4.8 | 2.47 |
| 71 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 9 | 48 | Mature | Good | Fair | 20 - 40 | Medium | | 5.76 | 2.63 |
| 72 | <i>Angophora costata</i> | Native | 8 x 5 | 25 | Semi mature | Good | Fair | 40+ | Medium | | 3 | 2.02 |
| 73 | <i>Angophora costata</i> | Native | 11 x 6 | 33 | Mature | Good | Fair | 40+ | Medium | | 3.96 | 2.25 |
| 74 | <i>Angophora costata</i> | Native | 11 x 8 | 39 | Mature | Good | Fair | 40+ | High | Nest in upper canopy | 4.68 | 2.37 |
| 75 | <i>Angophora costata</i> | Native | 9 x 6 | 28 | Mature | Good | Good | 40+ | Medium | | 3.36 | 2.18 |
| 76 | <i>Eucalyptus camaldulensis</i> | Indigenous | 7 x 8 | 39 | Mature | Fair | Fair | 10 - 20 | Medium | | 4.68 | 2.47 |
| 77 | <i>Eucalyptus camaldulensis</i> | Indigenous | 6 x 6 | 23 | Mature | Poor | Fair | 5 - 10 | Low | | 2.76 | 1.91 |
| 78 | <i>Eucalyptus camaldulensis</i> | Indigenous | 9 x 8 | 51 | Mature | Good | Fair | 40+ | Medium | | 6.12 | 2.59 |
| 79 | <i>Eucalyptus melliodora</i> | Indigenous | 6 x 4 | 21 | Semi mature | Good | Fair | 40+ | Low | | 2.52 | 1.85 |
| 80 | <i>Eucalyptus camaldulensis</i> | Indigenous | 15 x 8 | 55 | Mature | Fair | Good | 40+ | High | | 6.6 | 2.73 |
| 81 | <i>Eucalyptus melliodora</i> | Indigenous | 9 x 4 | 29 | Semi mature | Good | Very poor | 1 - 5 | Low | | 3.48 | 2.05 |
| 82 | <i>Eucalyptus camaldulensis</i> | Indigenous | 10 x 6 | 43 | Mature | Good | Fair | 40+ | Medium | | 5.16 | 2.57 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|----|-----------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|---|----------------|----------------|
| 83 | <i>Eucalyptus melliodora</i> | Indigenous | 5 x 3 | 15 | Semi mature | Fair | Fair | 20 - 40 | Low | Whipper snipper damage | 2 | 1.65 |
| 84 | <i>Eucalyptus camaldulensis</i> | Indigenous | 10 x 8 | 43 | Mature | Good | Fair | 40+ | Medium | | 5.16 | 2.49 |
| 85 | <i>Corymbia citriodora</i> | Native | 16 x 13 | 84 | Mature | Good | Good | 40+ | High | Nest in upper canopy | 10.08 | 3.28 |
| 86 | <i>Pittosporum undulatum</i> | Native | 5 x 5 | 18 | Mature | Good | Fair | 20 - 40 | Low | Estimated DBH | 2.16 | 1.68 |
| 87 | <i>Callistemon citrinus</i> | Native | 5 x 3 | 12 | Mature | Fair | Fair | 10 - 20 | Low | Group of 10 | 2 | 1.61 |
| 88 | <i>Pittosporum undulatum</i> | Native | 5 x 5 | 20 | Mature | Good | Fair | 10 - 20 | Low | | 2.4 | 1.85 |
| 89 | <i>Melia azedarach</i> | Native | 7 x 8 | 55 | Mature | Good | Fair | 20 - 40 | Medium | | 6.6 | 2.67 |
| 90 | <i>Eucalyptus leucoxydon</i> | Native | 7 x 14 | 39 | Mature | Good | Fair | 10 - 20 | Medium | | 4.68 | 2.43 |
| 91 | <i>Corymbia citriodora</i> | Native | 16 x 17 | 72 | Mature | Good | Fair | 40+ | High | | 8.64 | 3.08 |
| 92 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 8 | 54 | Mature | Good | Fair | 20 - 40 | High | Overshadowed by adjacent trees | 6.48 | 2.83 |
| 93 | <i>Eucalyptus camaldulensis</i> | Indigenous | 17 x 15 | 107 | Mature | Good | Fair | 20 - 40 | High | | 12.84 | 3.55 |
| 94 | <i>Allocasuarina verticillata</i> | Indigenous | 7 x 6 | 38 | Mature | Fair | Fair | 10 - 20 | Medium | | 4.56 | 2.3 |
| 95 | <i>Eucalyptus camaldulensis</i> | Indigenous | 17 x 14 | 130 | Mature | Fair | Fair | 20 - 40 | High | | 15 | 3.83 |
| 96 | <i>Eucalyptus camaldulensis</i> | Indigenous | 8 x 3 | 11 | Semi mature | Good | Fair | 20 - 40 | Low | Group of 8 suckers under 15cm DBH . Suckers under 8cm | 2 | 1.53 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|---|----------------|----------------|
| | | | | | | | | | | DBH were not collected. | | |
| 97 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 3 | 15 | Semi mature | Good | Good | 40+ | Low | | 2 | 1.68 |
| 98 | <i>Eucalyptus globulus</i> | Native | 11 x 4 | 26 | Semi mature | Good | Good | 20 - 40 | Medium | Overshadowed by adjacent trees | 3.12 | 2.1 |
| 99 | <i>Acacia longifolia</i> var. <i>sophorae</i> | Indigenous | 7 x 8 | 35 | Mature | Good | Fair | 20 - 40 | Medium | Nest, used as cubby house | 4.2 | 2.34 |
| 100 | <i>Acacia implexa</i> | Indigenous | 6 x 3 | 11 | Semi mature | Good | Poor | 1 - 5 | Low | | 2 | 1.53 |
| 101 | <i>Eucalyptus camaldulensis</i> | Indigenous | 20 x 12 | 114 | Mature | Fair | Fair | 20 - 40 | High | Multiple hollows, has been underplanted, high habitat value | 13.68 | 3.68 |
| 102 | <i>Eucalyptus camaldulensis</i> | Indigenous | 17 x 10 | 67 | Mature | Fair | Fair | 20 - 40 | High | | 8.04 | 3 |
| 103 | <i>Eucalyptus camaldulensis</i> | Indigenous | 20 x 8 | 67 | Mature | Good | Fair | 40+ | High | | 8.04 | 3.15 |
| 104 | <i>Eucalyptus camaldulensis</i> | Indigenous | 18 x 12 | 58 | Mature | Good | Fair | 40+ | High | | 6.96 | 3.18 |
| 105 | <i>Eucalyptus camaldulensis</i> | Indigenous | 17 x 4 | 38 | Mature | Fair | Fair | 20 - 40 | High | | 4.56 | 2.45 |
| 106 | <i>Eucalyptus camaldulensis</i> | Indigenous | 18 x 6 | 42 | Mature | Good | Good | 40+ | High | | 5.04 | 2.61 |
| 107 | <i>Eucalyptus camaldulensis</i> | Indigenous | 18 x 7 | 63 | Mature | Good | Fair | 20 - 40 | High | Hollow in trunk | 7.56 | 2.92 |
| 108 | <i>Eucalyptus camaldulensis</i> | Indigenous | 16 x 10 | 66 | Mature | Good | Fair | 20 - 40 | High | | 7.92 | 3.03 |
| 109 | <i>Eucalyptus camaldulensis</i> | Indigenous | 9 x 2 | 17 | Semi mature | Good | Poor | 5 - 10 | Low | Regrowth from stump | 2.04 | 1.68 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--|----------------|----------------|
| 110 | <i>Eucalyptus camaldulensis</i> | Indigenous | 17 x 8 | 70 | Mature | Good | Fair | 20 - 40 | High | | 8.4 | 3.17 |
| 111 | <i>Eucalyptus camaldulensis</i> | Indigenous | 16 x 12 | 80 | Mature | Good | Fair | 40+ | High | | 9.6 | 3.3 |
| 112 | <i>Eucalyptus camaldulensis</i> | Indigenous | 16 x 12 | 71 | Mature | Good | Fair | 40+ | High | | 8.52 | 3.12 |
| 113 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 4 | 37 | Mature | Good | Fair | 40+ | Medium | | 4.44 | 2.41 |
| 114 | <i>Eucalyptus camaldulensis</i> | Indigenous | 17 x 7 | 52 | Mature | Fair | Fair | 20 - 40 | High | | 6.24 | 2.8 |
| 115 | <i>Eucalyptus camaldulensis</i> | Indigenous | 17 x 10 | 80 | Mature | Good | Fair | 40+ | High | | 9.6 | 3.5 |
| 116 | <i>Eucalyptus camaldulensis</i> | Indigenous | 21 x 16 | 119 | Mature | Good | Fair | 40+ | High | | 14.28 | 3.74 |
| 117 | <i>Eucalyptus camaldulensis</i> | Indigenous | 20 x 7 | 59 | Mature | Fair | Fair | 40+ | High | | 7.08 | 2.87 |
| 118 | <i>Eucalyptus camaldulensis</i> | Indigenous | 20 x 8 | 67 | Mature | Good | Fair | 20 - 40 | High | Will require structural pruning due to included union in canopy. | 8.04 | 3.09 |
| 119 | <i>Eucalyptus camaldulensis</i> | Indigenous | 22 x 10 | 82 | Mature | Fair | Fair | 20 - 40 | High | | 9.84 | 3.31 |
| 120 | <i>Eucalyptus camaldulensis</i> | Indigenous | 22 x 6 | 56 | Mature | Fair | Fair | 20 - 40 | High | | 6.72 | 2.92 |
| 121 | <i>Eucalyptus melliodora</i> | Indigenous | 5 x 4 | 16 | Semi mature | Good | Fair | 40+ | Low | | 2 | 1.65 |
| 122 | <i>Eucalyptus melliodora</i> | Indigenous | 4 x 4 | 18 | Semi mature | Good | Fair | 40+ | Low | | 2.16 | 1.75 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|---------------------------------|----------------|----------------|
| 123 | <i>Eucalyptus melliodora</i> | Indigenous | 6 x 4 | 19 | Semi mature | Good | Fair | 40+ | Medium | | 2.28 | 1.85 |
| 124 | <i>Acacia melanoxylon</i> | Indigenous | 7 x 6 | 22 | Mature | Good | Fair | 20 - 40 | Medium | | 2.64 | 1.82 |
| 125 | <i>Eucalyptus camaldulensis</i> | Indigenous | 4 x 6 | 12 | Semi mature | Good | Fair | 5 - 10 | Low | Regrowth from stump, front edge | 2 | 1.5 |
| 126 | <i>Acacia melanoxylon</i> | Indigenous | 7 x 6 | 28 | Mature | Good | Good | 20 - 40 | Medium | | 3.36 | 2.1 |
| 127 | <i>Acacia melanoxylon</i> | Indigenous | 8 x 6 | 30 | Mature | Good | Good | 20 - 40 | Medium | Estimated DBH due to vegetation | 3.6 | 2.39 |
| 128 | <i>Eucalyptus nicholii</i> | Native | 11 x 10 | 78 | Mature | Fair | Fair | 20 - 40 | High | | 9.36 | 3.17 |
| 129 | <i>Angophora costata</i> | Native | 2 x 1 | 2 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 130 | <i>Eucalyptus sideroxylon</i> | Native | 2 x 1 | 4 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 131 | <i>Eucalyptus sideroxylon</i> | Native | 3 x 1 | 3 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 132 | <i>Angophora costata</i> | Native | 2 x 1 | 3 | Young | Fair | Good | 40+ | Low | | 2 | 1.5 |
| 133 | <i>Eucalyptus polyanthemos</i> | Indigenous | 2 x 1 | 5 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 134 | <i>Angophora costata</i> | Native | 2 x 2 | 4 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 135 | <i>Angophora costata</i> | Native | 2 x 1 | 3 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |
| 136 | <i>Eucalyptus sideroxylon</i> | Native | 4 x 1 | 3 | Young | Good | Good | 40+ | Low | | 2 | 1.5 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|------------------------------|--------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------|----------------|----------------|
| 137 | <i>Eucalyptus globulus</i> | Native | 14 x 14 | 121 | Mature | Good | Fair | 10 - 20 | High | Large bracket fungi | 14.52 | 3.8 |
| 138 | <i>Eucalyptus globulus</i> | Native | 14 x 14 | 120 | Mature | Good | Fair | 10 - 20 | High | Multiple bracket fungi | 14.4 | 3.73 |
| 139 | <i>Angophora costata</i> | Native | 16 x 8 | 65 | Mature | Good | Fair | 40+ | High | | 7.8 | 2.88 |
| 140 | <i>Angophora costata</i> | Native | 16 x 12 | 60 | Mature | Fair | Fair | 20 - 40 | High | | 7.2 | 2.87 |
| 141 | <i>Eucalyptus botryoides</i> | Native | 11 x 11 | 50 | Mature | Fair | Fair | 20 - 40 | Medium | | 6 | 2.69 |
| 142 | <i>Eucalyptus botryoides</i> | Native | 14 x 11 | 73 | Mature | Fair | Fair | 20 - 40 | High | | 8.76 | 3.32 |
| 143 | <i>Eucalyptus botryoides</i> | Native | 18 x 15 | 91 | Mature | Fair | Fair | 20 - 40 | High | | 10.92 | 3.4 |
| 144 | <i>Eucalyptus botryoides</i> | Native | 13 x 10 | 57 | Mature | Fair | Poor | 5 - 10 | Low | Overshadowed by adjacent trees | 6.84 | 2.74 |
| 145 | <i>Eucalyptus botryoides</i> | Native | 19 x 7 | 59 | Mature | Fair | Poor | 10 - 20 | Medium | Hollow in canopy | 7.08 | 2.85 |
| 146 | <i>Eucalyptus botryoides</i> | Native | 17 x 9 | 47 | Mature | Fair | Fair | 20 - 40 | Medium | | 5.64 | 2.59 |
| 147 | <i>Angophora costata</i> | Native | 13 x 4 | 29 | Mature | Good | Fair | 20 - 40 | Medium | | 3.48 | 2.18 |
| 148 | <i>Angophora costata</i> | Native | 8 x 5 | 19 | Semi mature | Good | Fair | 20 - 40 | Low | | 2.28 | 1.82 |
| 149 | <i>Angophora costata</i> | Native | 18 x 11 | 66 | Mature | Good | Fair | 40+ | High | | 7.92 | 2.97 |
| 150 | <i>Angophora costata</i> | Native | 13 x 17 | 78 | Mature | Good | Fair | 40+ | High | | 9.36 | 3.12 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------|----------------|----------------|
| 151 | <i>Angophora costata</i> | Native | 13 x 11 | 57 | Mature | Fair | Poor | 5 - 10 | Low | | 6.84 | 2.81 |
| 152 | <i>Eucalyptus botryoides</i> | Native | 10 x 11 | 58 | Mature | Fair | Poor | 1 - 5 | Low | | 6.96 | 2.76 |
| 154 | <i>Eucalyptus radiata</i> | Indigenous | 10 x 11 | 62 | Mature | Fair | Fair | 10 - 20 | Medium | | 7.44 | 3.14 |
| 155 | <i>Eucalyptus radiata</i> | Indigenous | 14 x 15 | 92 | Mature | Fair | Fair | 10 - 20 | Medium | | 11.04 | 3.31 |
| 156 | <i>Agonis flexuosa</i> | Native | 7 x 10 | 70 | Mature | Fair | Poor | 10 - 20 | Medium | | 8.4 | 3.06 |
| 157 | <i>Agonis flexuosa</i> | Native | 9 x 9 | 78 | Mature | Fair | Fair | 10 - 20 | Medium | | 9.36 | 3.18 |
| 158 | <i>Eucalyptus saligna</i> | Native | 18 x 13 | 66 | Mature | Fair | Fair | 10 - 20 | Medium | | 7.92 | 2.98 |
| 159 | <i>Corymbia citriodora</i> | Native | 18 x 13 | 79 | Mature | Good | Fair | 40+ | High | | 9.48 | 3.27 |
| 160 | <i>Eucalyptus botryoides</i> | Native | 14 x 6 | 37 | Mature | Good | Fair | 20 - 40 | Medium | | 4.44 | 2.25 |
| 161 | <i>Eucalyptus botryoides</i> | Native | 16 x 11 | 81 | Mature | Good | Fair | 40+ | High | | 9.72 | 3.21 |
| 162 | <i>Melaleuca armillaris</i> | Native | 7 x 10 | 49 | Mature | Fair | Fair | 20 - 40 | Medium | Overshadowed by adjacent trees | 5.88 | 2.71 |
| 163 | <i>Corymbia maculata</i> | Native | 12 x 3 | 31 | Semi mature | Good | Good | 40+ | Medium | | 3.72 | 2.2 |
| 164 | <i>Angophora costata</i> | Native | 13 x 7 | 41 | Mature | Good | Good | 40+ | Medium | Girdling root | 4.92 | 2.51 |
| 165 | <i>Eucalyptus botryoides</i> | Native | 14 x 7 | 34 | Mature | Good | Fair | 40+ | Medium | | 4.08 | 2.45 |
| 166 | <i>Eucalyptus saligna</i> | Native | 11 x 6 | 21 | Semi mature | Good | Good | 40+ | Medium | | 2.52 | 1.82 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------|----------------|----------------|
| 167 | <i>Eucalyptus saligna</i> | Native | 14 x 5 | 31 | Mature | Good | Fair | 40+ | Medium | | 3.72 | 2.25 |
| 168 | <i>Eucalyptus camaldulensis</i> | Indigenous | 15 x 5 | 32 | Mature | Good | Fair | 40+ | Medium | | 3.84 | 2.28 |
| 169 | <i>Acacia melanoxylon</i> | Indigenous | 7 x 4 | 28 | Mature | Fair | Poor | 10 - 20 | Low | | 3.36 | 2.08 |
| 170 | <i>Angophora costata</i> | Native | 15 x 7 | 54 | Mature | Good | Fair | 20 - 40 | High | | 6.48 | 2.76 |
| 171 | <i>Eucalyptus radiata</i> | Indigenous | 4 x 7 | 26 | Mature | Fair | Poor | 10 - 20 | Low | Overshadowed by adjacent trees | 3.12 | 2.1 |
| 172 | <i>Eucalyptus radiata</i> | Indigenous | 3 x 8 | 21 | Mature | Fair | Poor | 10 - 20 | Low | Overshadowed by adjacent trees | 2.52 | 1.91 |
| 173 | <i>Eucalyptus saligna</i> | Native | 16 x 7 | 51 | Mature | Good | Fair | 40+ | High | | 6.12 | 2.76 |
| 174 | <i>Corymbia citriodora</i> | Native | 16 x 8 | 48 | Mature | Good | Fair | 40+ | High | | 5.76 | 2.67 |
| 175 | <i>Allocasuarina littoralis</i> | Indigenous | 9 x 8 | 40 | Mature | Good | Fair | 20 - 40 | Medium | | 4.8 | 2.59 |
| 176 | <i>Eucalyptus botryoides</i> | Native | 15 x 7 | 42 | Mature | Good | Fair | 40+ | High | | 5.04 | 2.59 |
| 177 | <i>Eucalyptus botryoides</i> | Native | 14 x 8 | 57 | Mature | Fair | Poor | 5 - 10 | Low | | 6.84 | 2.76 |
| 178 | <i>Acacia implexa</i> | Indigenous | 6 x 5 | 15 | Semi mature | Good | Fair | 10 - 20 | Low | | 2 | 1.72 |
| 179 | <i>Eucalyptus camaldulensis</i> | Indigenous | 15 x 7 | 44 | Mature | Good | Fair | 20 - 40 | High | | 5.28 | 2.55 |
| 180 | <i>Eucalyptus radiata</i> | Indigenous | 12 x 6 | 32 | Mature | Fair | Fair | 20 - 40 | Medium | | 3.84 | 2.34 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|---------------------------------|----------------|----------------|
| 181 | <i>Eucalyptus saligna</i> | Native | 11 x 4 | 19 | Semi mature | Fair | Fair | 40+ | Medium | | 2.28 | 1.75 |
| 182 | <i>Eucalyptus saligna</i> | Native | 11 x 3 | 17 | Semi mature | Fair | Fair | 40+ | Medium | | 2.04 | 1.82 |
| 183 | <i>Melaleuca styphelioides</i> | Native | 10 x 7 | 57 | Mature | Fair | Good | 20 - 40 | Medium | | 6.84 | 2.73 |
| 184 | <i>Melaleuca styphelioides</i> | Native | 9 x 7 | 62 | Mature | Good | Fair | 20 - 40 | Medium | | 7.44 | 2.67 |
| 185 | <i>Callistemon 'Kings Park Special'</i> | Native | 5 x 7 | 41 | Mature | Fair | Very poor | Zero | Low | | 4.92 | 2.34 |
| 186 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 7 | 33 | Mature | Good | Fair | 20 - 40 | Medium | | 3.96 | 2.3 |
| 187 | <i>Eucalyptus radiata</i> | Indigenous | 9 x 8 | 25 | Mature | Fair | Fair | 10 - 20 | Medium | Estimated DBH due to vegetation | 3 | 2.13 |
| 188 | <i>Eucalyptus radiata</i> | Indigenous | 17 x 7 | 44 | Mature | Fair | Good | 20 - 40 | Medium | | 5.28 | 2.57 |
| 189 | <i>Eucalyptus radiata</i> | Indigenous | 15 x 9 | 40 | Mature | Fair | Fair | 20 - 40 | Medium | | 4.8 | 2.51 |
| 190 | <i>Eucalyptus radiata</i> | Indigenous | 15 x 7 | 37 | Mature | Good | Fair | 20 - 40 | Medium | Overshadowed by adjacent trees | 4.44 | 2.43 |
| 191 | <i>Eucalyptus botryoides</i> | Native | 16 x 11 | 59 | Mature | Good | Fair | 20 - 40 | High | | 7.08 | 2.85 |
| 192 | <i>Eucalyptus botryoides</i> | Native | 9 x 6 | 35 | Mature | Fair | Poor | 5 - 10 | Low | | 4.2 | 2.13 |
| 193 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 6 | 28 | Semi mature | Good | Fair | 40+ | Medium | | 3.36 | 2.13 |
| 194 | <i>Allocasuarina littoralis</i> | Indigenous | 8 x 3 | 18 | Semi mature | Good | Good | 40+ | Low | | 2.16 | 1.79 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|------------------------------|----------------|----------------|
| 195 | <i>Eucalyptus radiata</i> | Indigenous | 14 x 8 | 50 | Mature | Fair | Good | 40+ | High | | 6 | 2.63 |
| 196 | <i>Eucalyptus radiata</i> | Indigenous | 10 x 8 | 26 | Mature | Fair | Poor | 10 - 20 | Low | Growing into adjacent canopy | 3.12 | 2.18 |
| 197 | <i>Eucalyptus radiata</i> | Indigenous | 14 x 8 | 40 | Mature | Fair | Fair | 20 - 40 | Medium | | 4.8 | 2.39 |
| 198 | <i>Eucalyptus radiata</i> | Indigenous | 14 x 7 | 37 | Mature | Fair | Fair | 10 - 20 | Medium | | 4.44 | 2.39 |
| 199 | <i>Eucalyptus radiata</i> | Indigenous | 14 x 7 | 36 | Mature | Fair | Fair | 20 - 40 | Medium | | 4.32 | 2.41 |
| 200 | <i>Eucalyptus radiata</i> | Indigenous | 13 x 9 | 48 | Mature | Fair | Fair | 20 - 40 | Medium | | 5.76 | 2.78 |
| 201 | <i>Eucalyptus camaldulensis</i> | Indigenous | 8 x 2 | 16 | Semi mature | Good | Fair | 40+ | Low | | 2 | 1.72 |
| 202 | <i>Eucalyptus saligna</i> | Native | 8 x 8 | 25 | Semi mature | Poor | Poor | 5 - 10 | Low | | 3 | 2.05 |
| 203 | <i>Eucalyptus radiata</i> | Indigenous | 11 x 9 | 44 | Mature | Good | Fair | 20 - 40 | Medium | | 5.28 | 2.49 |
| 204 | <i>Eucalyptus radiata</i> | Indigenous | 10 x 7 | 34 | Mature | Poor | Fair | 1 - 5 | Low | | 4.08 | 2.3 |
| 205 | <i>Eucalyptus radiata</i> | Indigenous | 10 x 7 | 31 | Mature | Poor | Fair | 5 - 10 | Low | | 3.72 | 2.2 |
| 206 | <i>Eucalyptus radiata</i> | Indigenous | 7 x 4 | 23 | Semi mature | Fair | Fair | 10 - 20 | Low | | 2.76 | 1.91 |
| 207 | <i>Eucalyptus yarraensis</i> | Indigenous | 12 x 11 | 49 | Mature | Good | Fair | 20 - 40 | High | | 5.88 | 2.51 |
| 208 | <i>Eucalyptus yarraensis</i> | Indigenous | 15 x 7 | 41 | Mature | Fair | Fair | 20 - 40 | High | | 4.92 | 2.49 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|--|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------|----------------|----------------|
| 209 | <i>Eucalyptus radiata</i> | Indigenous | 7 x 4 | 15 | Semi mature | Fair | Fair | 10 - 20 | Low | Overshadowed by adjacent trees | 2 | 1.75 |
| 210 | <i>Eucalyptus viminalis subsp. pryoriana</i> | Indigenous | 15 x 8 | 41 | Mature | Good | Fair | 40+ | High | | 4.92 | 2.63 |
| 211 | <i>Eucalyptus radiata</i> | Indigenous | 11 x 10 | 44 | Mature | Good | Fair | 20 - 40 | Medium | | 5.28 | 2.47 |
| 212 | <i>Eucalyptus radiata</i> | Indigenous | 5 x 6 | 29 | Mature | Good | Fair | 10 - 20 | Medium | Overshadowed by adjacent trees | 3.48 | 2.02 |
| 213 | <i>Eucalyptus radiata</i> | Indigenous | 11 x 10 | 48 | Mature | Fair | Fair | 20 - 40 | Medium | | 5.76 | 2.55 |
| 214 | <i>Eucalyptus botryoides</i> | Native | 14 x 6 | 42 | Mature | Good | Good | 40+ | Medium | | 5.04 | 2.51 |
| 215 | <i>Eucalyptus radiata</i> | Indigenous | 15 x 6 | 30 | Mature | Fair | Fair | 10 - 20 | Medium | | 3.6 | 2.28 |
| 216 | <i>Eucalyptus radiata</i> | Indigenous | 8 x 10 | 49 | Mature | Good | Fair | 20 - 40 | Medium | | 5.88 | 2.88 |
| 217 | <i>Eucalyptus radiata</i> | Indigenous | 13 x 13 | 70 | Mature | Good | Fair | 40+ | High | | 8.4 | 3.04 |
| 218 | <i>Eucalyptus mannifera</i> | Native | 7 x 6 | 22 | Semi mature | Good | Fair | 20 - 40 | Medium | | 2.64 | 1.97 |
| 219 | <i>Acacia implexa</i> | Indigenous | 11 x 7 | 36 | Mature | Good | Fair | 10 - 20 | Medium | | 4.32 | 2.32 |
| 220 | <i>Eucalyptus camaldulensis</i> | Indigenous | 9 x 7 | 34 | Mature | Good | Fair | 20 - 40 | Medium | | 4.08 | 2.34 |
| 221 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 5 | 27 | Mature | Good | Fair | 40+ | Medium | | 3.24 | 2.23 |
| 222 | <i>Eucalyptus camaldulensis</i> | Indigenous | 13 x 6 | 43 | Mature | Fair | Fair | 40+ | Medium | | 5.16 | 2.45 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|--|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------|----------------|----------------|
| 223 | <i>Eucalyptus botryoides</i> | Native | 14 x 6 | 60 | Mature | Good | Fair | 40+ | Medium | | 7.2 | 2.85 |
| 224 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 5 | 36 | Mature | Good | Fair | 20 - 40 | Medium | | 4.32 | 2.39 |
| 225 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 3 | 18 | Mature | Fair | Fair | 20 - 40 | Low | Group of 3 | 2.16 | 1.91 |
| 226 | <i>Eucalyptus viminalis subsp. pryoriana</i> | Indigenous | 5 x 6 | 18 | Semi mature | Fair | Poor | 10 - 20 | Low | | 2.16 | 1.75 |
| 227 | <i>Eucalyptus camaldulensis</i> | Indigenous | 8 x 10 | 35 | Mature | Fair | Fair | 20 - 40 | Medium | | 4.2 | 2.37 |
| 228 | <i>Eucalyptus camaldulensis</i> | Indigenous | 9 x 7 | 33 | Mature | Good | Fair | 20 - 40 | Medium | | 3.96 | 2.2 |
| 229 | <i>Eucalyptus camaldulensis</i> | Indigenous | 7 x 6 | 16 | Semi mature | Good | Fair | 20 - 40 | Low | Overshadowed by adjacent trees | 2 | 1.88 |
| 230 | <i>Eucalyptus camaldulensis</i> | Indigenous | 7 x 5 | 21 | Semi mature | Fair | Fair | 20 - 40 | Low | | 2.52 | 1.91 |
| 231 | <i>Eucalyptus camaldulensis</i> | Indigenous | 7 x 8 | 17 | Semi mature | Poor | Fair | 10 - 20 | Low | Group of 4 | 2.04 | 1.68 |
| 232 | <i>Acacia implexa</i> | Indigenous | 6 x 3 | 12 | Semi mature | Good | Fair | 10 - 20 | Low | Group of 2 | 2 | 1.53 |
| 233 | <i>Eucalyptus radiata</i> | Indigenous | 13 x 8 | 38 | Mature | Good | Fair | 20 - 40 | Medium | | 4.56 | 2.45 |
| 234 | <i>Melaleuca linariifolia</i> | Native | 6 x 8 | 110 | Mature | Fair | Fair | 20 - 40 | Medium | | 13.2 | 3.47 |
| 235 | <i>Melaleuca linariifolia</i> | Native | 6 x 7 | 100 | Mature | Fair | Fair | 20 - 40 | Medium | | 12 | 3.31 |
| 236 | <i>Melaleuca linariifolia</i> | Native | 7 x 7 | 96 | Mature | Fair | Fair | 20 - 40 | Medium | | 11.52 | 3.38 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--|----------------|----------------|
| 237 | <i>Eucalyptus globulus</i> | Native | 16 x 15 | 114 | Mature | Good | Very poor | 5 - 10 | Low | Removal required with change of land use | 13.68 | 3.71 |
| 238 | <i>Eucalyptus leucoxylon</i> | Native | 6 x 6 | 28 | Semi mature | Fair | Fair | 20 - 40 | Medium | Estimated basal due to vegetation | 3.36 | 2 |
| 239 | <i>Acacia implexa</i> | Indigenous | 7 x 5 | 35 | Mature | Fair | Fair | 10 - 20 | Low | Group of 4 | 4.2 | 2.18 |
| 240 | <i>Acacia implexa</i> | Indigenous | 8 x 7 | 40 | Mature | Fair | Poor | 5 - 10 | Low | Estimated DBH | 4.8 | 2.47 |
| 241 | <i>Acacia melanoxylon</i> | Indigenous | 5 x 2 | 15 | Semi mature | Good | Good | 20 - 40 | Low | Group of 2 | 2 | 1.72 |
| 242 | <i>Eucalyptus botryoides</i> | Native | 14 x 6 | 45 | Mature | Good | Good | 40+ | High | | 5.4 | 2.61 |
| 243 | <i>Eucalyptus radiata</i> | Indigenous | 12 x 9 | 63 | Mature | Good | Fair | 40+ | Medium | | 7.56 | 3 |
| 244 | <i>Acacia implexa</i> | Indigenous | 8 x 3 | 24 | Mature | Good | Fair | 20 - 40 | Low | | 2.88 | 1.97 |
| 245 | <i>Acacia floribunda</i> | Native | 8 x 3 | 28 | Mature | Good | Fair | 20 - 40 | Low | Group of 2 | 3.36 | 2.13 |
| 246 | <i>Eucalyptus camaldulensis</i> | Indigenous | 9 x 8 | 55 | Mature | Good | Fair | 40+ | Medium | Weedy understorey | 6.6 | 2.13 |
| 247 | <i>Acacia implexa</i> | Indigenous | 7 x 5 | 33 | Mature | Good | Fair | 10 - 20 | Low | | 3.96 | 2.3 |
| 248 | <i>Eucalyptus camaldulensis</i> | Indigenous | 13 x 6 | 36 | Mature | Good | Fair | 40+ | Medium | | 4.32 | 2.37 |
| 249 | <i>Eucalyptus camaldulensis</i> | Indigenous | 13 x 6 | 33 | Mature | Good | Fair | 40+ | Medium | | 3.96 | 2.34 |
| 250 | <i>Eucalyptus botryoides</i> | Native | 13 x 5 | 28 | Semi mature | Good | Fair | 40+ | Medium | | 3.36 | 2.25 |
| 251 | <i>Eucalyptus camaldulensis</i> | Indigenous | 8 x 7 | 44 | Mature | Good | Fair | 20 - 40 | Medium | | 5.28 | 2.57 |
| 252 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 8 | 41 | Mature | Good | Fair | 20 - 40 | Medium | | 4.92 | 2.63 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--|----------------|----------------|
| 253 | <i>Eucalyptus camaldulensis</i> | Indigenous | 9 x 4 | 20 | Semi mature | Good | Fair | 40+ | Medium | Overshadowed by adjacent trees | 2.4 | 1.94 |
| 254 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 4 | 21 | Semi mature | Fair | Fair | 40+ | Medium | | 2.52 | 2 |
| 255 | <i>Eucalyptus camaldulensis</i> | Indigenous | 13 x 6 | 33 | Mature | Good | Fair | 40+ | Medium | | 3.96 | 2.39 |
| 256 | <i>Eucalyptus camaldulensis</i> | Indigenous | 6 x 8 | 30 | Mature | Good | Poor | 20 - 40 | Medium | | 3.6 | 2.23 |
| 257 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 7 | 36 | Mature | Good | Good | 40+ | Medium | | 4.32 | 2.3 |
| 258 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 6 | 28 | Mature | Good | Good | 40+ | Medium | Similar tree at rear | 3.36 | 2.18 |
| 259 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 6 | 31 | Mature | Good | Fair | 40+ | Medium | | 3.72 | 2.13 |
| 260 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 7 | 34 | Mature | Good | Fair | 40+ | Medium | | 4.08 | 2.41 |
| 261 | <i>Eucalyptus ovata</i> | Indigenous | 13 x 7 | 33 | Mature | Fair | Poor | 5 - 10 | Low | | 3.96 | 2.57 |
| 262 | <i>Eucalyptus ovata</i> | Indigenous | 12 x 6 | 36 | Mature | Good | Fair | 20 - 40 | Medium | | 4.32 | 2.57 |
| 263 | <i>Eucalyptus ovata</i> | Indigenous | 10 x 5 | 33 | Mature | Fair | Very poor | 1 - 5 | Low | | 3.96 | 2.25 |
| 264 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 11 | 54 | Mature | Good | Fair | 40+ | High | | 6.48 | 2.76 |
| 265 | <i>Eucalyptus camaldulensis</i> | Indigenous | 6 x 6 | 15 | Semi mature | Fair | Fair | 10 - 20 | Low | Overshadowed by adjacent trees, Group of 3 | 2 | 1.61 |
| 266 | <i>Eucalyptus camaldulensis</i> | Indigenous | 14 x 9 | 68 | Mature | Good | Fair | 40+ | High | | 8.16 | 3.01 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|---|----------------|----------------|
| 267 | <i>Eucalyptus camaldulensis</i> | Indigenous | 8 x 6 | 20 | Mature | Fair | Fair | 10 - 20 | Low | | 2.4 | 2.2 |
| 268 | <i>Eucalyptus camaldulensis</i> | Indigenous | 7 x 7 | 29 | Mature | Fair | Fair | 10 - 20 | Medium | Overshadowed by adjacent trees | 3.48 | 2.13 |
| 269 | <i>Melaleuca linariifolia</i> | Native | 6 x 7 | 73 | Mature | Fair | Fair | 20 - 40 | Medium | Estimated basal due to vegetation | 8.76 | 3.09 |
| 270 | <i>Eucalyptus radiata</i> | Indigenous | 8 x 10 | 40 | Mature | Good | Fair | 10 - 20 | Medium | Overshadowed by adjacent trees, estimated basal due to vegetation | 4.8 | 2.51 |
| 271 | <i>Eucalyptus radiata</i> | Indigenous | 13 x 7 | 46 | Mature | Good | Fair | 40+ | High | | 5.52 | 2.83 |
| 272 | <i>Eucalyptus ovata</i> | Indigenous | 12 x 9 | 57 | Mature | Good | Fair | 20 - 40 | High | Estimated DBH due to vegetation | 6.84 | 2.93 |
| 273 | <i>Eucalyptus camaldulensis</i> | Indigenous | 14 x 5 | 32 | Mature | Good | Fair | 40+ | Medium | Estimated basal due to vegetation | 3.84 | 2.25 |
| 274 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 8 | 24 | Mature | Good | Fair | 20 - 40 | Medium | Overshadowed by adjacent trees, Rubbing branches | 2.88 | 2.13 |
| 275 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 6 | 41 | Mature | Good | Fair | 40+ | Medium | Estimated DBH due to vegetation | 4.92 | 2.43 |
| 276 | <i>Eucalyptus camaldulensis</i> | Indigenous | 9 x 3 | 18 | Semi mature | Good | Fair | 40+ | Low | | 2.16 | 1.72 |
| 277 | <i>Eucalyptus ovata</i> | Indigenous | 16 x 7 | 66 | Mature | Good | Fair | 40+ | High | | 7.92 | 2.95 |
| 278 | <i>Eucalyptus camaldulensis</i> | Indigenous | 15 x 3 | 20 | Semi mature | Good | Good | 40+ | Medium | | 2.4 | 1.94 |
| 279 | <i>Eucalyptus camaldulensis</i> | Indigenous | 13 x 4 | 35 | Mature | Good | Fair | 40+ | Medium | | 4.2 | 2.37 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|-----------------------------------|----------------|----------------|
| 280 | <i>Eucalyptus ovata</i> | Indigenous | 15 x 6 | 31 | Mature | Good | Fair | 40+ | Medium | | 3.72 | 2.32 |
| 281 | <i>Eucalyptus ovata</i> | Indigenous | 14 x 6 | 40 | Mature | Good | Fair | 20 - 40 | Medium | | 4.8 | 2.73 |
| 282 | <i>Eucalyptus camaldulensis</i> | Indigenous | 16 x 5 | 45 | Mature | Good | Fair | 40+ | High | Estimated basal due to vegetation | 5.4 | 2.57 |
| 283 | <i>Eucalyptus camaldulensis</i> | Indigenous | 15 x 5 | 45 | Mature | Good | Fair | 40+ | High | | 5.4 | 2.53 |
| 284 | <i>Eucalyptus camaldulensis</i> | Indigenous | 14 x 7 | 60 | Mature | Good | Poor | 10 - 20 | Medium | | 7.2 | 2.87 |
| 285 | <i>Eucalyptus camaldulensis</i> | Indigenous | 14 x 14 | 84 | Mature | Good | Good | 40+ | High | | 10.08 | 3.38 |
| 286 | <i>Acacia melanoxylon</i> | Indigenous | 7 x 6 | 29 | Mature | Fair | Poor | 5 - 10 | Low | | 3.48 | 2.13 |
| 287 | <i>Acacia melanoxylon</i> | Indigenous | 6 x 3 | 18 | Mature | Good | Fair | 10 - 20 | Low | | 2.16 | 1.85 |
| 288 | <i>Acacia melanoxylon</i> | Indigenous | 6 x 5 | 22 | Mature | Good | Fair | 20 - 40 | Low | Estimated DBH due to vegetation | 2.64 | 1.91 |
| 289 | <i>Eucalyptus camaldulensis</i> | Indigenous | 8 x 4 | 24 | Semi mature | Good | Poor | 40+ | Medium | | 2.88 | 2 |
| 290 | <i>Eucalyptus camaldulensis</i> | Indigenous | 7 x 5 | 29 | Semi mature | Good | Good | 40+ | Medium | | 3.48 | 2.15 |
| 291 | <i>Eucalyptus camaldulensis</i> | Indigenous | 7 x 5 | 22 | Semi mature | Fair | Fair | 20 - 40 | Medium | | 2.64 | 1.94 |
| 292 | <i>Eucalyptus melliodora</i> | Indigenous | 5 x 4 | 15 | Semi mature | Fair | Fair | 40+ | Low | | 2 | 1.65 |
| 293 | <i>Eucalyptus camaldulensis</i> | Indigenous | 3 x 1 | 3 | Young | Good | Good | 40+ | Low | Group along path | 2 | 1.5 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|---------------------------------|----------------|----------------|
| 294 | <i>Eucalyptus ovata</i> | Indigenous | 9 x 6 | 38 | Mature | Fair | Fair | 20 - 40 | Medium | | 4.56 | 2.71 |
| 295 | <i>Eucalyptus ovata</i> | Indigenous | 10 x 8 | 54 | Mature | Fair | Fair | 10 - 20 | Medium | | 6.48 | 2.98 |
| 296 | <i>Eucalyptus camaldulensis</i> | Indigenous | 8 x 3 | 15 | Mature | Good | Good | 40+ | Low | | 2 | 1.68 |
| 297 | <i>Acacia dealbata</i> | Indigenous | 6 x 3 | 9 | Semi mature | Good | Good | 10 - 20 | Low | | 2 | 1.5 |
| 298 | <i>Eucalyptus ovata</i> | Indigenous | 10 x 9 | 44 | Mature | Good | Poor | 20 - 40 | Medium | Potentially regrowth from stump | 5.28 | 2.67 |
| 299 | <i>Eucalyptus ovata</i> | Indigenous | 10 x 4 | 30 | Mature | Fair | Poor | 10 - 20 | Medium | | 3.6 | 2.34 |
| 300 | <i>Eucalyptus camaldulensis</i> | Indigenous | 7 x 3 | 21 | Semi mature | Fair | Fair | 40+ | Low | | 2.52 | 1.94 |
| 301 | <i>Eucalyptus camaldulensis</i> | Indigenous | 6 x 3 | 13 | Semi mature | Fair | Good | 40+ | Low | | 2 | 1.61 |
| 302 | <i>Eucalyptus saligna</i> | Native | 7 x 5 | 16 | Semi mature | Good | Good | 40+ | Low | | 2 | 1.65 |
| 303 | <i>Eucalyptus camaldulensis</i> | Indigenous | 6 x 2 | 8 | Semi mature | Fair | Good | 40+ | Low | | 2 | 1.5 |
| 304 | <i>Acacia dealbata</i> | Indigenous | 7 x 5 | 19 | Mature | Good | Good | 10 - 20 | Low | | 2.28 | 1.79 |
| 305 | <i>Acacia dealbata</i> | Indigenous | 11 x 8 | 31 | Mature | Good | Fair | 10 - 20 | Medium | | 3.72 | 2.13 |
| 306 | <i>Acacia melanoxylon</i> | Indigenous | 9 x 5 | 25 | Mature | Good | Fair | 20 - 40 | Medium | | 3 | 2 |
| 307 | <i>Eucalyptus camaldulensis</i> | Indigenous | 9 x 3 | 20 | Semi mature | Fair | Fair | 40+ | Medium | | 2.4 | 1.97 |
| 308 | <i>Acacia dealbata</i> | Indigenous | 13 x 6 | 35 | Mature | Good | Fair | 10 - 20 | Medium | | 4.2 | 2.23 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------|----------------|----------------|
| 309 | <i>Eucalyptus camaldulensis</i> | Indigenous | 6 x 4 | 23 | Semi mature | Fair | Fair | 20 - 40 | Low | Overshadowed by adjacent trees | 2.76 | 1.91 |
| 310 | <i>Eucalyptus melliodora</i> | Indigenous | 7 x 4 | 23 | Semi mature | Good | Fair | 40+ | Medium | | 2.76 | 1.85 |
| 311 | <i>Melaleuca armillaris</i> | Native | 4 x 3 | 9 | Semi mature | Good | Fair | 20 - 40 | Low | | 2 | 1.5 |
| 312 | <i>Corymbia ficifolia</i> | Native | 4 x 3 | 9 | Semi mature | Good | Good | 40+ | Low | | 2 | 1.5 |
| 313 | <i>Eucalyptus melliodora</i> | Indigenous | 8 x 3 | 26 | Semi mature | Dead | Poor | Zero | Low | | 3.12 | 2 |
| 314 | <i>Eucalyptus camaldulensis</i> | Indigenous | 25 x 12 | 114 | Mature | Good | Fair | 40+ | Very High | Nest in canopy | 13.68 | 3.68 |
| 315 | <i>Eucalyptus camaldulensis</i> | Indigenous | 10 x 10 | 43 | Mature | Fair | Fair | 20 - 40 | Medium | Overshadowed by adjacent trees | 5.16 | 2.63 |
| 316 | <i>Eucalyptus camaldulensis</i> | Indigenous | 16 x 7 | 64 | Mature | Good | Fair | 40+ | High | | 7.68 | 2.92 |
| 317 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 8 | 39 | Mature | Fair | Fair | 20 - 40 | Medium | | 4.68 | 2.37 |
| 318 | <i>Eucalyptus ovata</i> | Indigenous | 13 x 12 | 63 | Mature | Fair | Fair | 20 - 40 | Medium | Regrowth from stump | 7.56 | 3.01 |
| 319 | <i>Eucalyptus ovata</i> | Indigenous | 17 x 14 | 63 | Mature | Fair | Fair | 10 - 20 | High | | 7.56 | 2.93 |
| 320 | <i>Eucalyptus ovata</i> | Indigenous | 17 x 8 | 43 | Mature | Good | Good | 40+ | High | | 5.16 | 2.59 |
| 321 | <i>Eucalyptus ovata</i> | Indigenous | 13 x 11 | 58 | Mature | Fair | Fair | 20 - 40 | High | | 6.96 | 2.93 |
| 322 | <i>Corymbia ficifolia</i> | Native | 6 x 5 | 24 | Mature | Good | Good | 40+ | Medium | | 2.88 | 2.02 |


| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------|----------------|----------------|
| 323 | <i>Eucalyptus ovata</i> | Indigenous | 15 x 9 | 54 | Mature | Fair | Poor | 10 - 20 | Medium | | 6.48 | 2.74 |
| 324 | <i>Eucalyptus camaldulensis</i> | Indigenous | 17 x 7 | 44 | Mature | Good | Fair | 40+ | High | | 5.28 | 2.53 |
| 325 | <i>Eucalyptus camaldulensis</i> | Indigenous | 18 x 11 | 84 | Mature | Good | Good | 40+ | High | | 10.08 | 3.24 |
| 326 | <i>Eucalyptus camaldulensis</i> | Indigenous | 10 x 6 | 38 | Mature | Fair | Fair | 10 - 20 | Medium | | 4.56 | 2.32 |
| 327 | <i>Eucalyptus camaldulensis</i> | Indigenous | 19 x 7 | 68 | Mature | Good | Good | 40+ | High | | 8.16 | 3.03 |
| 328 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 8 | 42 | Mature | Fair | Fair | 20 - 40 | Medium | Overshadowed by adjacent trees | 5.04 | 2.51 |
| 329 | <i>Eucalyptus camaldulensis</i> | Indigenous | 16 x 10 | 60 | Mature | Good | Fair | 40+ | High | | 7.2 | 2.95 |
| 330 | <i>Eucalyptus camaldulensis</i> | Indigenous | 6 x 3 | 6 | Semi mature | Good | Good | 40+ | Low | Group of 2 | 2 | 1.5 |
| 331 | <i>Eucalyptus ovata</i> | Indigenous | 8 x 4 | 19 | Semi mature | Good | Good | 40+ | Medium | | 2.28 | 1.91 |
| 332 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 5 | 29 | Semi mature | Good | Good | 40+ | Medium | | 3.48 | 2.15 |
| 333 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 3 | 31 | Semi mature | Good | Good | 40+ | Medium | | 3.72 | 2.15 |
| 334 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 7 | 51 | Mature | Fair | Fair | 20 - 40 | Medium | | 6.12 | 2.76 |
| 335 | <i>Eucalyptus camaldulensis</i> | Indigenous | 12 x 5 | 53 | Mature | Good | Fair | 40+ | Medium | | 6.36 | 2.76 |
| 336 | <i>Eucalyptus ovata</i> | Indigenous | 7 x 2 | 13 | Semi mature | Good | Poor | 10 - 20 | Low | | 2 | 1.68 |

| ID | Botanical Name | Origin | Height & Width (m) | DBH (cm) | Age Class | Health | Structure | ULE (years) | Retention Value | Comments | TPZ Radius (m) | SRZ Radius (m) |
|-----|---------------------------------|------------|--------------------|----------|-------------|--------|-----------|-------------|-----------------|--------------------------------------|----------------|----------------|
| 337 | <i>Casuarina cunninghamiana</i> | Native | 8 x 3 | 29 | Mature | Good | Fair | 10 - 20 | Low | Cluster of Casuarinas | 3.48 | 2.13 |
| 338 | <i>Acacia dealbata</i> | Indigenous | 7 x 8 | 37 | Mature | Good | Fair | 10 - 20 | Low | Cluster along the waters edge | 4.44 | 2.3 |
| 339 | <i>Eucalyptus camaldulensis</i> | Indigenous | 8 x 4 | 29 | Mature | Good | Fair | 40+ | Medium | | 3.48 | 2.2 |
| 340 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 6 | 43 | Mature | Good | Fair | 40+ | Medium | | 5.16 | 2.41 |
| 341 | <i>Eucalyptus camaldulensis</i> | Indigenous | 10 x 6 | 46 | Mature | Good | Fair | 40+ | Medium | Basal estimated due to Multi stemmed | 5.52 | 2.67 |
| 342 | <i>Eucalyptus camaldulensis</i> | Indigenous | 11 x 4 | 20 | Mature | Good | Fair | 40+ | Medium | Similar sized tree at rear | 2.4 | 2.1 |
| 343 | <i>Eucalyptus ovata</i> | Indigenous | 6 x 4 | 16 | Semi mature | Good | Poor | 5 - 10 | Low | Leader failed | 2 | 1.68 |
| 344 | <i>Eucalyptus camaldulensis</i> | Indigenous | 7 x 4 | 20 | Semi mature | Good | Good | 40+ | Medium | | 2.4 | 1.82 |
| 345 | <i>Eucalyptus camaldulensis</i> | Indigenous | 15 x 10 | 85 | Mature | Good | Good | 40+ | High | | 10.2 | 3.28 |
| 346 | <i>Eucalyptus cinerea</i> | Native | 3 x 1 | 26 | Semi mature | Good | Good | 40+ | Low | | 3.12 | 2.08 |



Assessments Area at Namatjira Park, Clayton South.

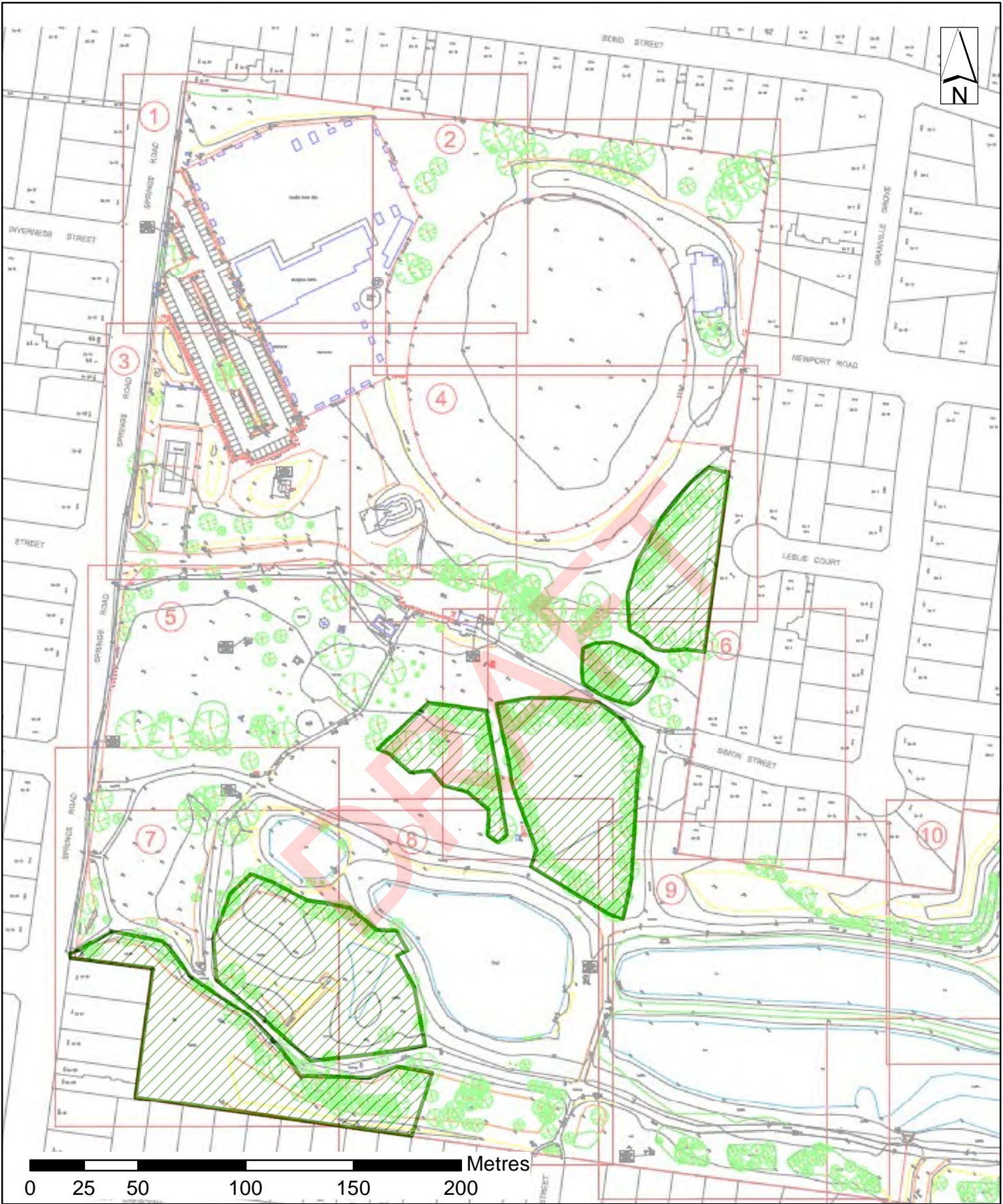
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 AreasAssessed

Base information supplied by:
The Community Collaborative
Plotted: MAK
Coordinate System:
GDA 1994 MGA Zone 55
Date: 18/12/2020




10/350 Settlement Road
Thomastown VIC 3074
Tel: 1300 404 558
ABN: 39 531 880 706



Bushland Areas at Namatjira Park, Clayton South.

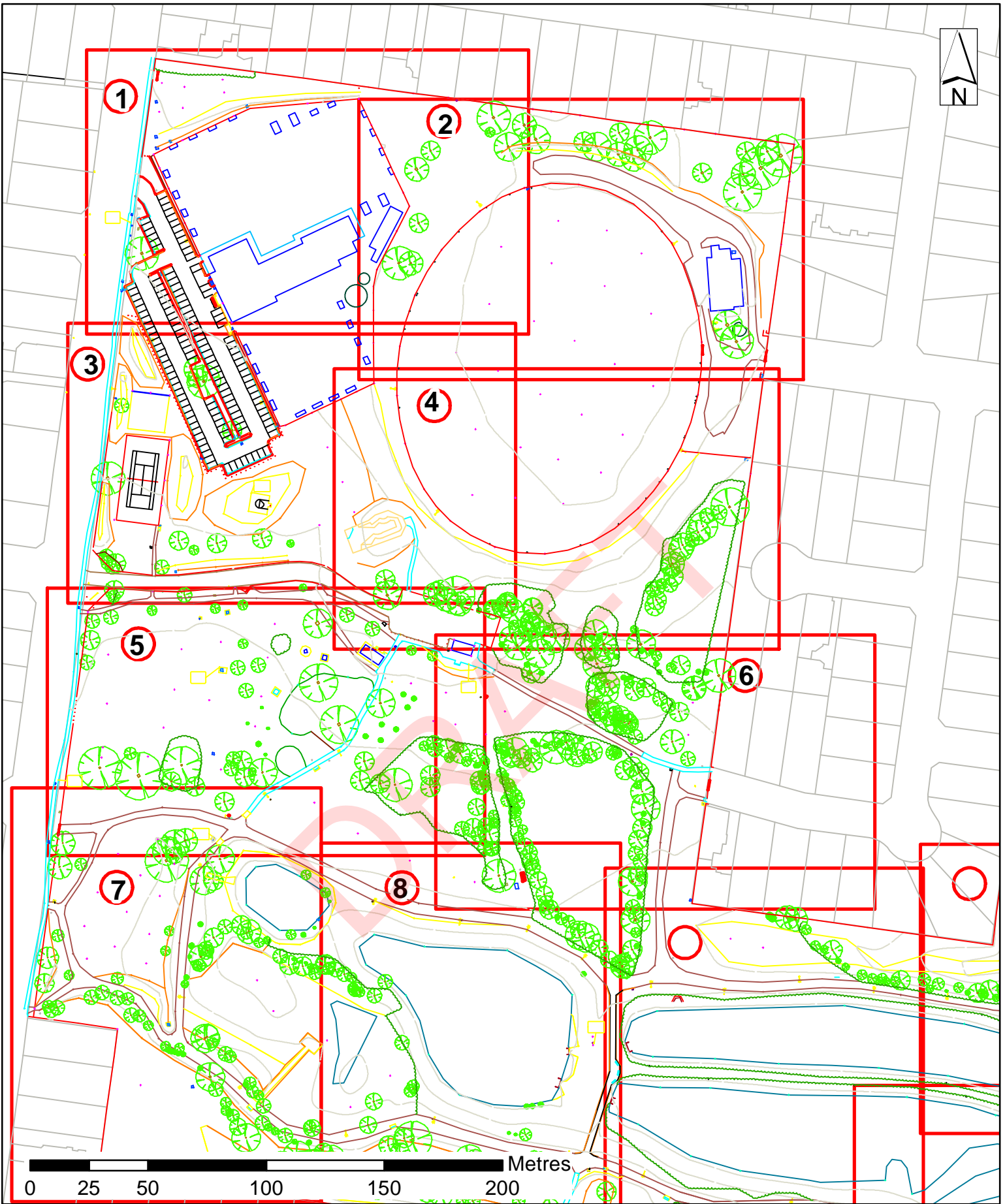
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 BushlandAreas

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Namatjira Park, Clayton South.

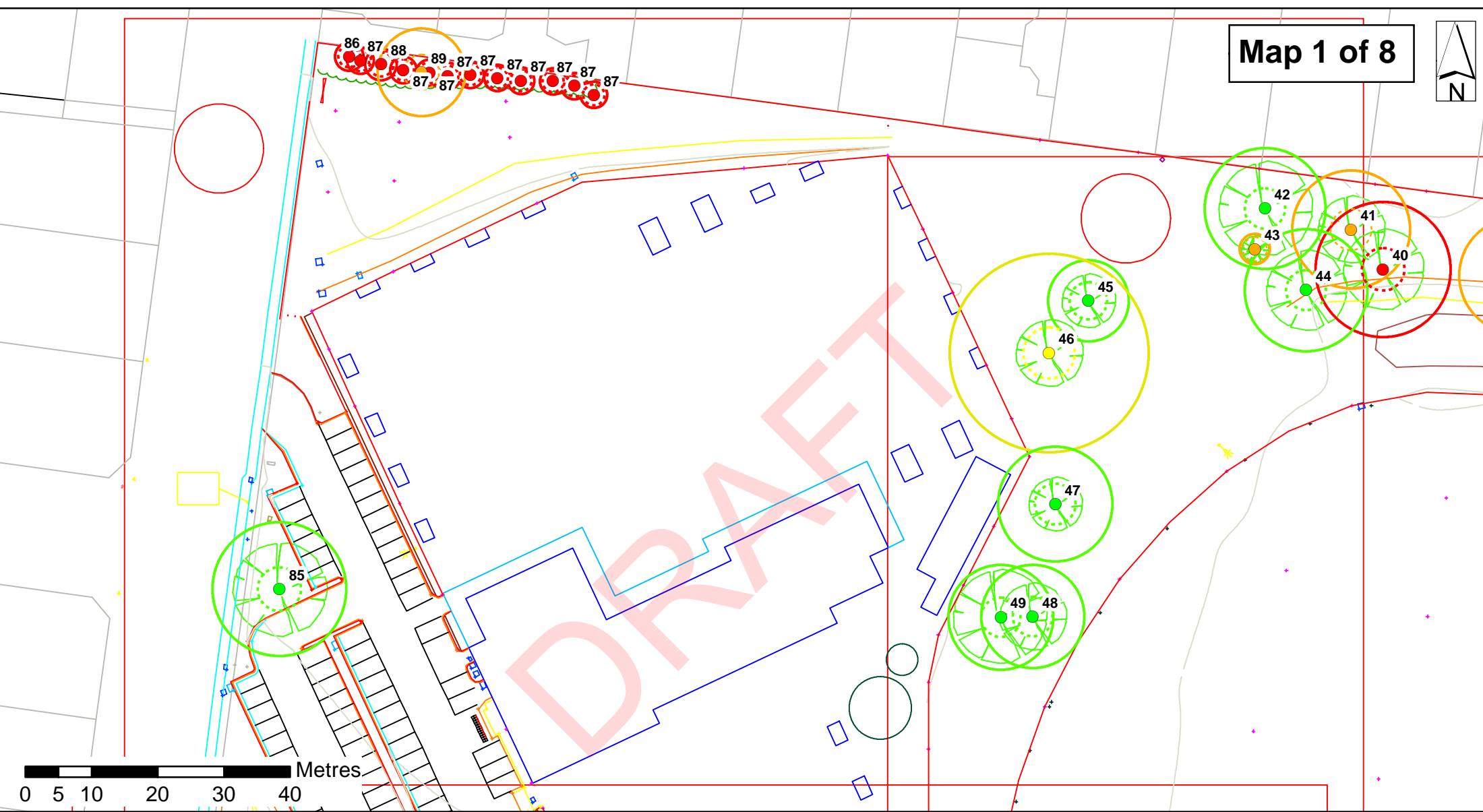
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 Map Grids

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Tel: 1300 404 558
ABN: 39 531 880 706



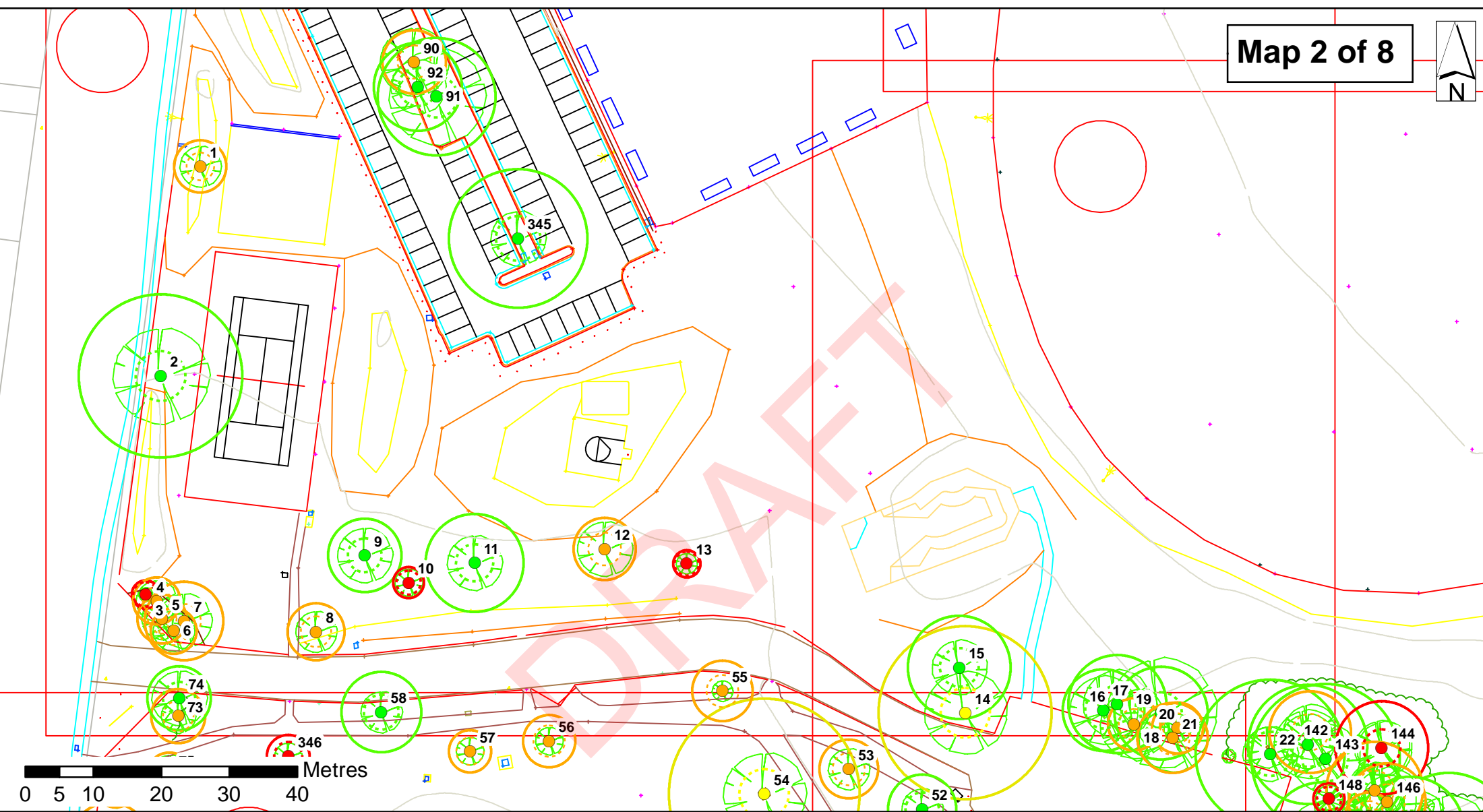
Preliminary Tree Assessments at Namatjira Park, Clayton South.

| Trees | SRZ | TPZ | |
|-------|-----|-----|-----------|
| ● | | | Very High |
| ● | | | High |
| ● | | | Medium |
| ● | | | Low |

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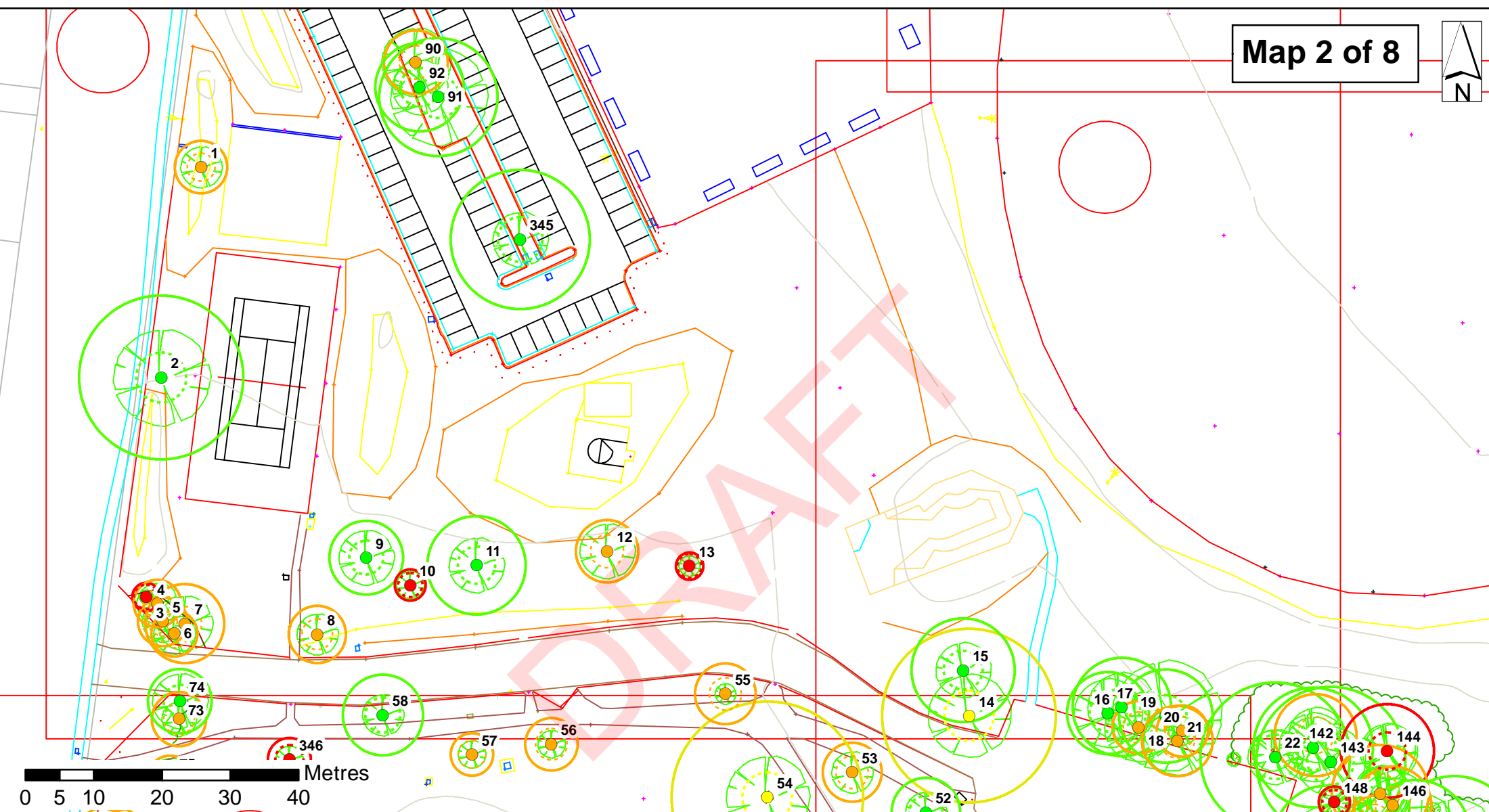
Preliminary Tree Assessments at Namatjira Park, Clayton South.

| Trees | SRZ | TPZ | |
|-------|-----|-----|-----------|
| ● | | | Very High |
| ● | | | High |
| ● | | | Medium |
| ● | | | Low |

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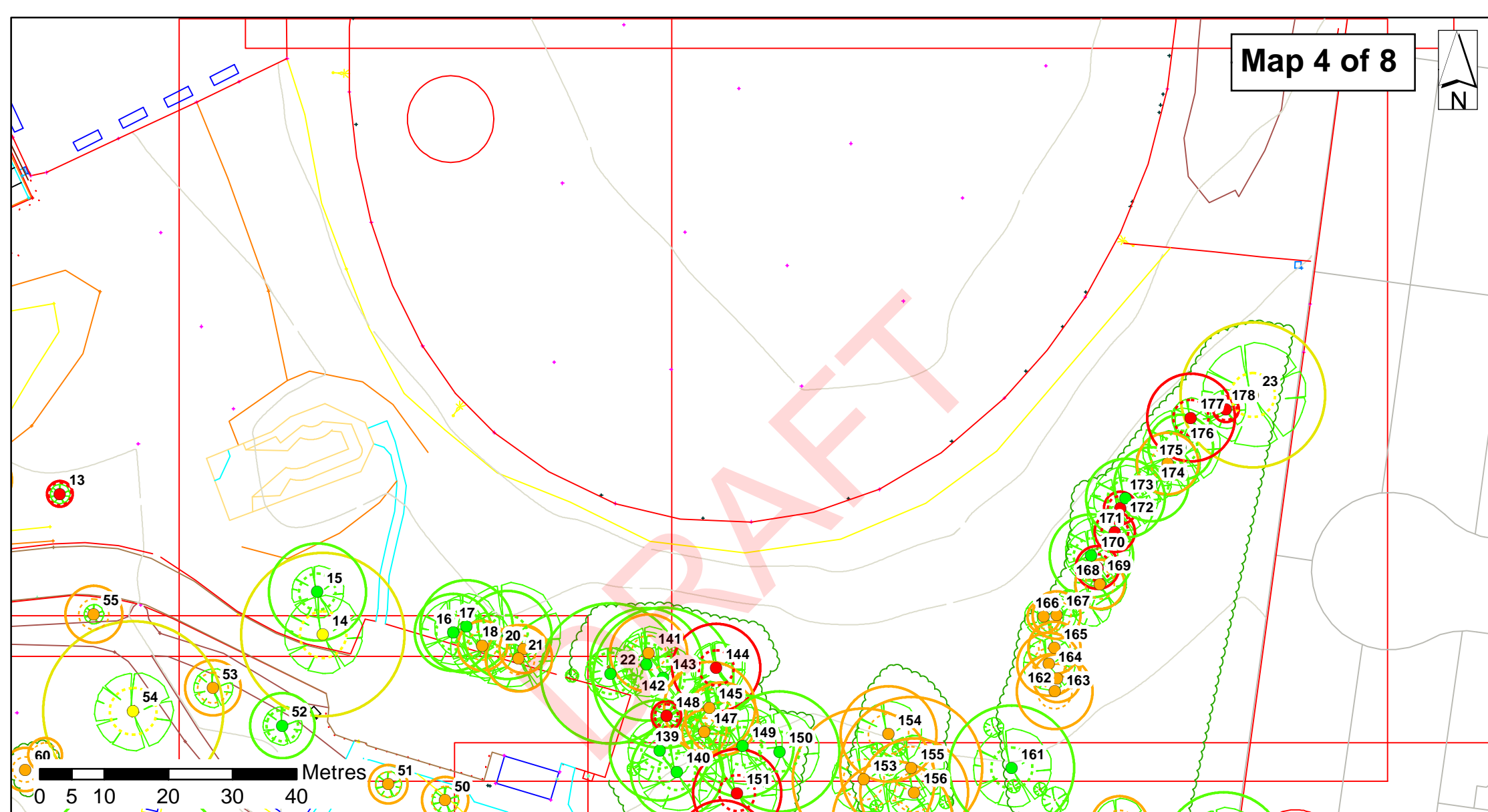
Preliminary Tree Assessments at Namatjira Park, Clayton South.

| Trees | SRZ | TPZ | |
|-------|-----|-----|-----------|
| ● | | | Very High |
| ● | | | High |
| ● | | | Medium |
| ● | | | Low |

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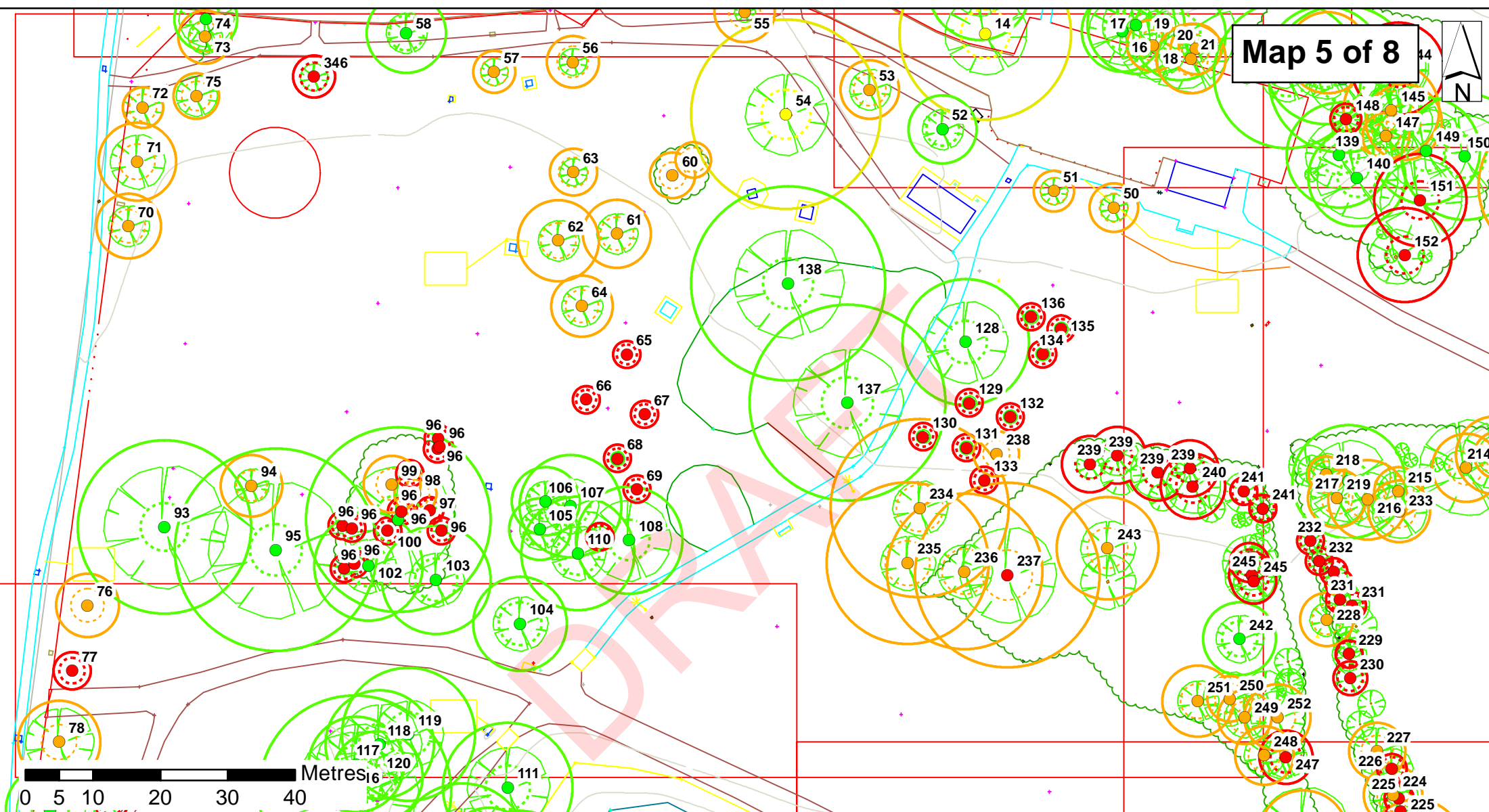
Preliminary Tree Assessments at Namatjira Park, Clayton South.

| Trees | SRZ | TPZ | |
|-------|-----|-----|-----------|
| ● | | | Very High |
| ● | | | High |
| ● | | | Medium |
| ● | | | Low |

Base information supplied by:
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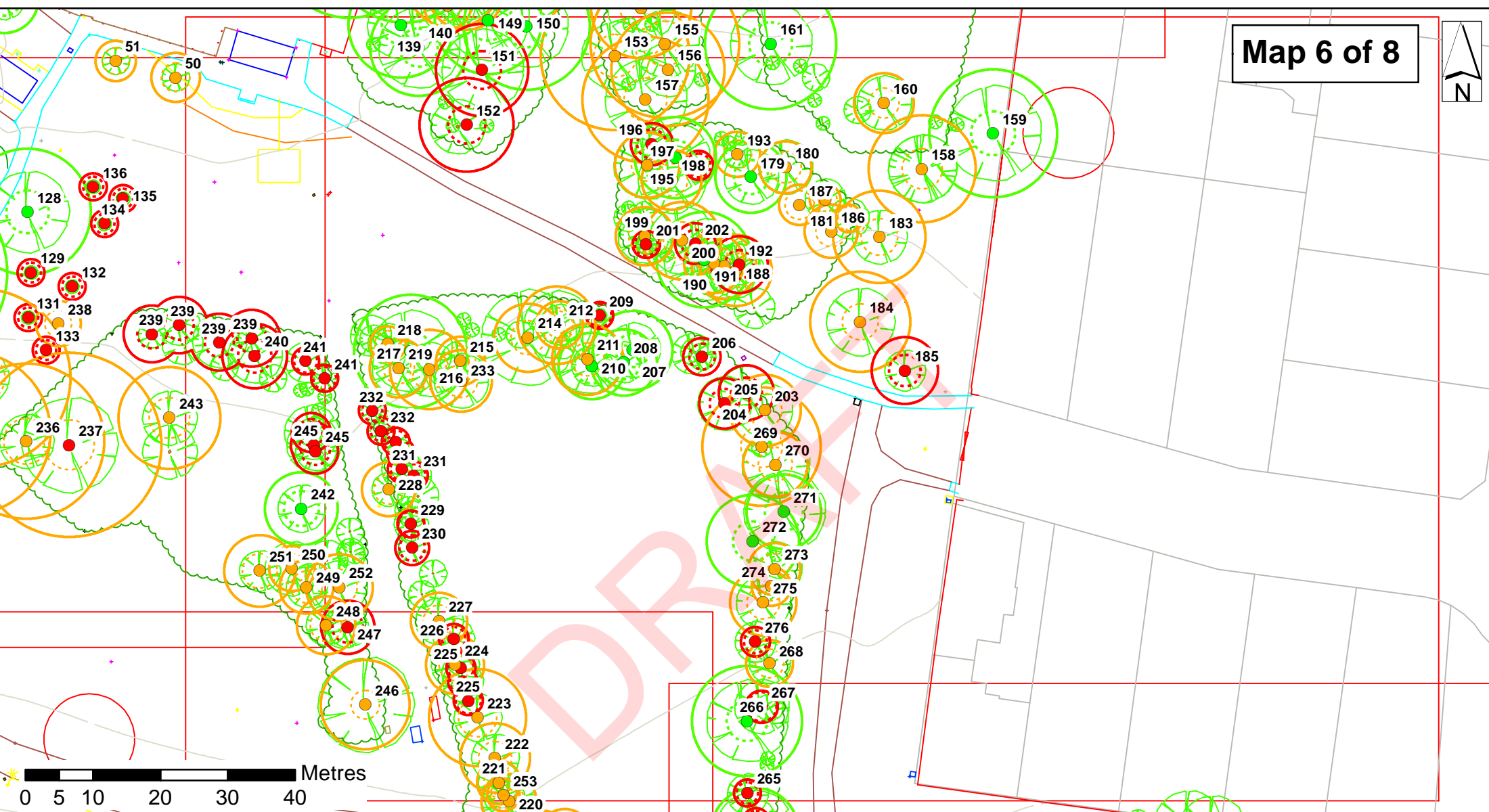
Preliminary Tree Assessments at Namatjira Park, Clayton South.

| Trees | SRZ | TPZ | |
|---------------------------------------|--|---|-----------|
| ● | | | Very High |
| ● | | | High |
| ● | | | Medium |
| ● | | | Low |

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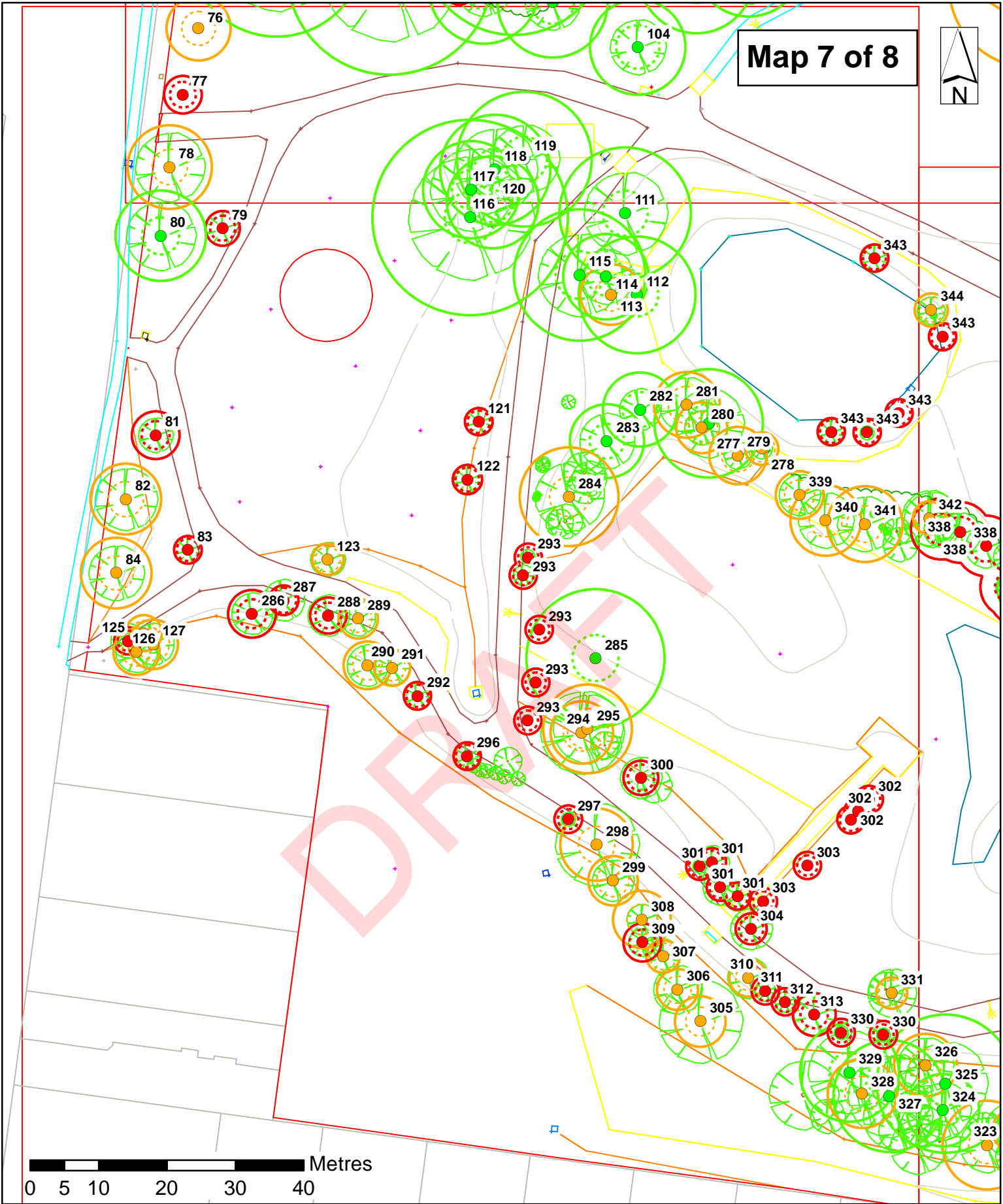
Preliminary Tree Assessments at Namatjira Park, Clayton South.

| Trees | SRZ | TPZ | |
|-------|-----|-----|-----------|
| ● | | | Very High |
| ● | | | High |
| ● | | | Medium |
| ● | | | Low |

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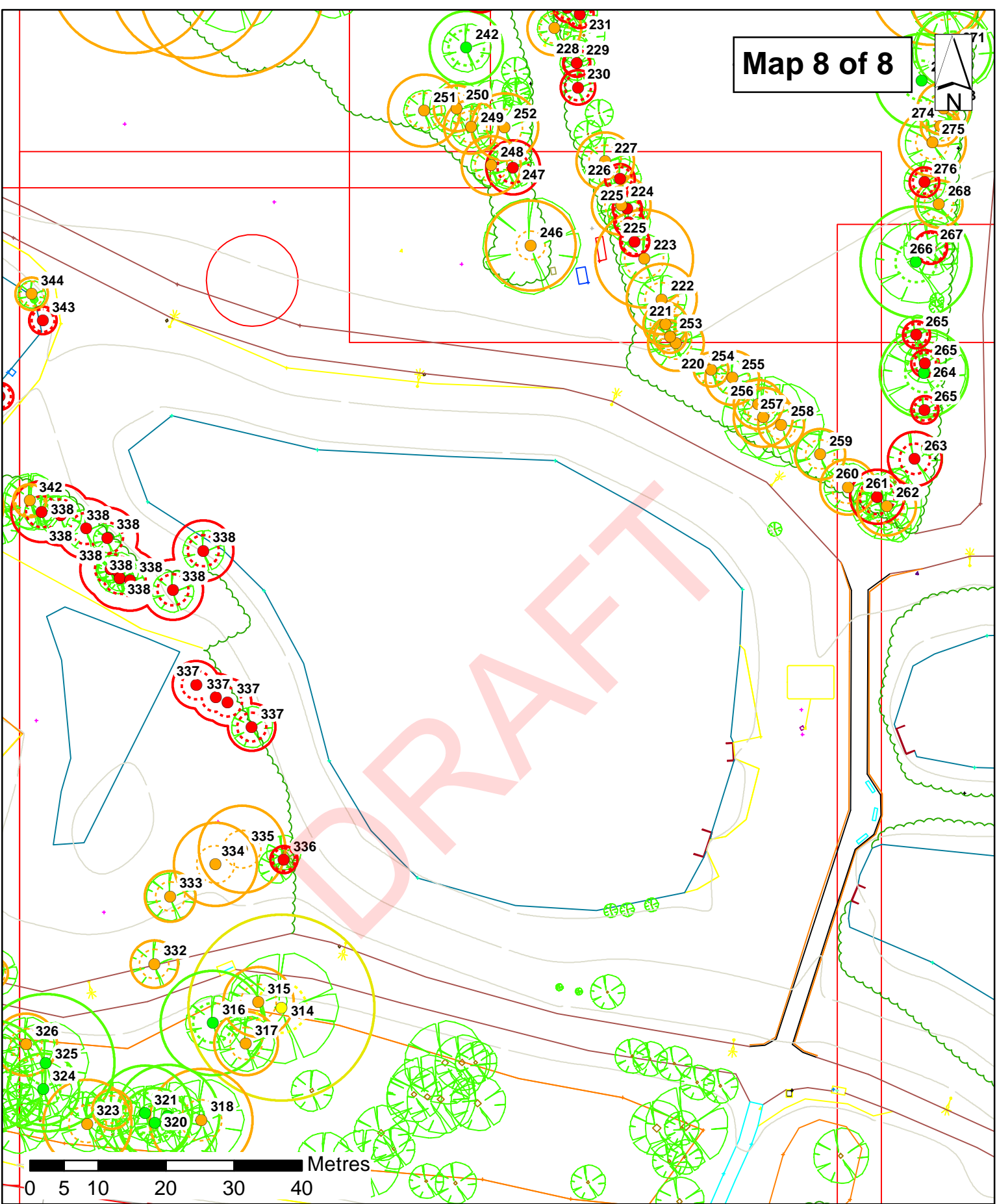
Preliminary Tree Assessments at Namatjira Park, Clayton South.

| Trees | SRZ | TPZ | |
|-------|-----|-----|-----------|
| ● | □ | □ | Very High |
| ● | □ | □ | High |
| ● | □ | □ | Medium |
| ● | □ | □ | Low |

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Tel: 1300 404 558
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Preliminary Tree Assessments at Namatjira Park, Clayton South.

| Trees | SRZ | TPZ | |
|-------|-----|-----|-----------|
| ● | □ | □ | Very High |
| ● | □ | □ | High |
| ● | □ | □ | Medium |
| ● | □ | □ | Low |

Base information supplied by:
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ABN: 39 531 880 706

Appendix 3. Data Collection Definitions & Descriptors

Tree assessments are based on the assessor's experience and opinion of the tree.

3.1 Botanical name

The scientific name identifying the genus and species of the tree. Each species has only one scientific name.

3.2 Common Name

The colloquial name for a tree species, usually in plain English. Common names for a species are often local or regional and each species can have multiple common names.

3.3 Tree dimensions

Tree height and canopy width in metres (estimated unless stated otherwise).

3.4 DBH

Diameter of the trunk at breast height (1.4m above ground level) measured using a diameter tape. Used to calculate the Tree Protection Zone radius.

3.5 Basal diameter

Diameter of the trunk above the root buttress, measured using a diameter tape. Used to calculate the Structural Root Zone radius.

3.6 Health

| Category | Description |
|-----------|--|
| Very Good | The tree is demonstrating excellent or exceptional growth. The tree exhibits a full canopy of foliage and is free of pest and disease problems. |
| Good | The tree is demonstrating good or exceptional growth. The tree exhibits a full canopy of foliage and has only minor pest or diseases problems. |
| Fair | The tree is in reasonable condition and growing well. The tree exhibits an adequate canopy of foliage. There may be some deadwood present in the crown. Some grazing by insects or possums may be evident. |
| Poor | The tree is not growing to its full capacity; extension growth of the laterals is minimal. The canopy may be thinning or sparse. Large amounts of deadwood may be evident throughout the crown. Significant pest and disease problems may be evident or there may be symptoms of stress indicating tree decline. |
| Very Poor | The tree appears to be in a state of decline. The tree is not growing to its full capacity. The canopy may be very thin and sparse. A significant volume of deadwood may be present in the canopy or pest and disease problems may be causing a severe decline in tree health. |
| Dead | The tree is dead. |

3.7 Structure

| Category | Description |
|------------|--|
| Good | The tree has a well-defined and balanced crown. Branch unions appear to be sound, with no significant defects evident in the trunk or the branches. Major limbs are well defined. The tree is considered a good example of the species. |
| Fair | The tree has some minor problems in the structure of the crown. The crown may be slightly out of balance, and some branch unions may be exhibiting minor structural faults. If the tree has a single trunk, it may be on a slight lean or exhibiting minor defects. |
| Poor | The tree may have a poorly structured crown. The crown may be unbalanced or exhibit large gaps. Major limbs may not be well defined. Branches may be rubbing or crossing over. Branch unions may be poor or faulty at the point of attachment. The tree may have suffered root damage. |
| Very Poor | The tree has a poorly structured crown. The crown is unbalanced or exhibits large gaps with possibly large sections of deadwood. Major limbs may not be well defined. Branches may be rubbing or crossing over. Branch unions may be poor or faulty at the point of attachment. Branches may exhibit large cracks that are likely to fail in the future. The tree may have suffered major root damage. |
| Has Failed | A section of the tree has failed or is in imminent danger of failure and the tree is no longer a viable specimen. |

3.8 Age Class

| Category | Description |
|-------------|--|
| Mature | Tree has reached the expected size for the species at the site. |
| Semi-mature | Established tree that has not yet reach the expected size for the species at the site. |
| Young | Recently planted tree or juvenile self-sown tree (generally less than 5 years old). |

3.9 Useful Life Expectancy (ULE)

| Category | Description |
|---------------|---|
| 40+ years | The tree is in excellent condition and under normal conditions and with appropriate management is expected to continue as a viable landscape component in excess of 40 years. |
| 20 - 40 years | The tree is in good condition and under normal conditions and with appropriate management is expected to continue as a viable landscape component for 20-40 years. |
| 10 - 20 years | The tree is in fair condition and under normal conditions and with appropriate management is expected to continue as a viable landscape component for 10-20 years. |
| 5 - 10 years | The tree is in fair to poor condition or it is not a long lived species. Removal and replacement may be required within the next 10 years. |
| 1 - 5 years | The tree is in poor condition due to advanced decline or structural defect. Removal and replacement may be required within the next 5 years. |
| 0 years | The tree is dead or is considered hazardous in the location. Removal may be required. |

3.10 Tree Origin

| Category | Description |
|-------------------|---|
| Exotic | The species originates in a country other than Australia. |
| Australian Native | The species originates within Australia. |
| Indigenous | The species originates within the local environs. |

3.11 Contribution to the Landscape

| Category | Description |
|------------|---|
| High | Generally, a large tree which is a significant component of the local landscape and provides canopy cover to the site. May offer shade and other amenities such as screening. The tree may assist with erosion control, offer a windbreak or perform a vital function in the location (e.g.: Habitat, shade, flowers or fruit). |
| Medium | Generally, a medium sized tree or group of small-medium trees which provide a moderate contribution to the local landscape and canopy cover. The tree may offer screening in the landscape or serve a particular function in the location. |
| Low | The tree offers little in the way of screening, amenity or canopy cover. |
| Negligible | The tree offers extremely little to nothing in the way of screening, amenity or canopy cover. |

3.12 Tree Retention Value

| Term | Description |
|-----------------------|--|
| Very High | Tree of exceptional quality in good condition. A prominent landscape feature and/or of historic, cultural, ecological or other significance. Has the potential to be a medium to long-term landscape component where managed appropriately. All efforts should be made to retain the tree and protect from construction impact. |
| High | Tree of high quality in good to fair condition. Generally, a prominent landscape feature. Has the potential to be a medium to long-term landscape component where managed appropriately. All efforts should be made to retain the tree and protect from construction impact. |
| Medium | Tree of moderate quality in fair condition. Generally, a modest landscape feature. May have a health or structural issue that can be resolved with arboricultural input or may refer to a medium to small tree in good condition. Has the potential to be a medium to long-term landscape component where managed appropriately. Where practical, design modifications should be considered in order to retain and protect from construction impact. |
| Low | Either: Tree of low quality in poor condition. Generally, provides little amenity value. Unlikely to be a long or medium term landscape component. The tree may be considered a weed species, structurally unsound, dead/dying/diseased, nearing the end of its ULE or may not be suitable for the site. Or: small tree of good or fair condition which is easily replaced in the landscape through planting of advanced stock. |
| Third party ownership | The tree is located outside of the subject site and is owned by a third party. It may be owned by a private entity (residential) or public body (council). Third party owned trees must be retained and protected from construction impact, unless a mutually acceptable outcome is negotiated with the tree owner and relevant authorities. |

Appendix 4. Tree Protection Zones & Structural Root Zones

All parts of the tree may be damaged by development and damage to any one part of the tree may affect its functioning as a whole.

Root damage is the most common cause of damage to trees on development sites. Roots may be directly damaged when removed, wounded, crushed or torn during grading, excavation or trenching. Soil compaction from foot traffic and vehicle traffic indirectly damages tree roots, resulting in loss of pore space within the soil which is essential for the exchange of gases between the soil and atmosphere and for soil drainage.

Trunks of trees may be wounded mechanically during demolition and construction work. This not only predisposes a tree to potential decay, but it also interferes with the transport of water, nutrients and sugars throughout the tree. Serious impacts may structurally weaken the tree.

The canopy of trees can be damaged through incorrect pruning techniques or mechanical injury by trucks, cranes, excavators etc. The removal of leaves reduces the level of photosynthesis and reduces the tree's capacity to function normally and to withstand stresses. Incorrect pruning and mechanical damage can produce wounds that are susceptible to infection by wood decay organisms.

For trees to be retained and their requirements met, procedures must be in place to protect trees at every stage of the development process. This needs to be taken into account at the earliest planning stage of any outdoor event or design of a development project where trees are involved.

4.1 Tree Protection Zones

The most common method of protecting trees during construction is by establishing a Tree Protection Zone (TPZ). The TPZ is an area isolated from construction disturbance area, so that the tree remains viable. The TPZ radius has been calculated according to the Australian Standard (AS 4970-2009) for the subject trees. This method calculates the TPZ as 12 times the trunk diameter at 1.4m above ground level (DBH).

A TPZ should not be less than 2m nor greater than 15m, except where additional crown protection is required. The TPZ of palms, other monocots, cycads and tree ferns should not be less than 1m outside of the crown projection.

4.2 Structural Root Zones

The Structural Root Zone (SRZ) is the minimum volume of roots required by the tree to remain stable in the ground. If the SRZ is breached the chances of windthrow are significantly increased. Windthrow is an event where the entire tree fails/falls over.

It is important to note that the SRZ is not related to tree health. It refers to the physical volume of roots required for the tree to remain stable in the ground (Figure 7). It is in no way related to the physiological requirements of the tree but is the minimum volume of roots required for the tree to remain standing (Mattheck and Breloer 1994).

According to AS 4970-2009 the SRZ radius of the trees has been calculated using the equation:

$$R_{srz} = (D \times 50)^{0.42} \times 0.64$$

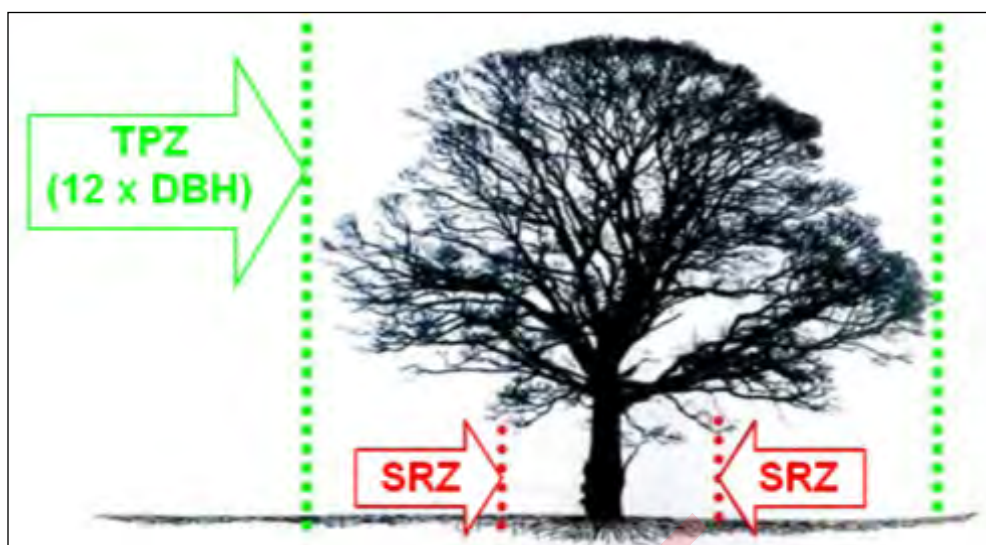


Figure 7: The SRZ = minimum volume of roots required to maintain tree stability (Biddle 1998).

4.3 TPZ and SRZ encroachment

It may be possible to encroach into or make variations to the standard TPZ. Encroachment includes (but is not limited to) excavation, compacted fill and machine trenching.

Table 6: Levels of TPZ encroachment as defined by AS 4970-2009

| Level of Encroachment | Description / Definition | Requirements |
|-----------------------|---|--|
| Minor | Encroachment of less than 10% of the TPZ and outside the SRZ is deemed to be minor encroachment. | Detailed root investigations should not be required but the encroachment must be compensated with an extension to the TPZ elsewhere (Figure 8). Variations must be made by the Project Arborist considering other relevant factors including tree health, vigour, stability, species sensitivity and soil characteristics. |
| Major | Encroachment of more than 10% of the TPZ or into the Structural Root Zone (SRZ) is deemed to be major encroachment. | The Project Arborist must demonstrate that the trees would remain viable. This may require root investigation by non-destructive methods and consideration of relevant factors of tree health, vigour, stability, species sensitivity and soil characteristics. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. |

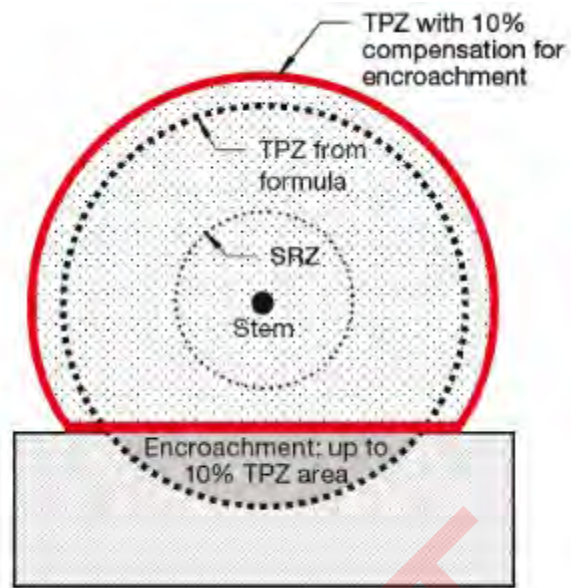


Figure 8: Example of minor TPZ encroachment and compensatory offset
(image from AS 4970-2009).

Appendix 5. Tree Protection Measures

5.1 Tree Protection Fencing

The Tree Protection Zone is delineated on site by a physical barrier of protective fencing that is a minimum of 1.8m high. It is installed around retained trees prior to site establishment and retained intact until completion of the works (Figure 9). Once erected, protective fencing must not be removed or altered without approval by the Project Arborist. The TPZ fence should be secured to restrict access.

Where TPZ fencing is impractical - e.g. if site access is required through the TPZ, other tree protection measures should be used, including ground protection and/or trunk and branch protection (see 5.6 and 5.7).



Figure 9: TPZ fencing is erected around retained trees prior to site works.

5.2 Signs

Signs identifying the TPZ should be placed around the edge of the TPZ and be clearly visible from within the development site (Figure 10).



Figure 10: Example of a TPZ warning sign clearly displayed on TPZ fencing.

5.3 Activities restricted within the TPZ

Activities restricted within the TPZ include but are not limited to:

- machine excavation including trenching
- excavation for silt fencing
- cultivation and landscaping
- storage of materials
- preparation of chemicals, including preparation of cement products
- parking of vehicles and plant
- refuelling
- dumping of waste
- wash down and cleaning of equipment
- placement of fill
- lighting of fires
- soil level changes
- temporary or permanent installation of utilities and signs
- physical damage to the tree.

5.4 TPZ Maintenance

The fenced TPZ area should be mulched to retain soil moisture throughout the period of works. The mulch must be maintained to a depth of 50-100mm. Where the existing landscape within the TPZ is to remain unaltered (e.g. garden beds or turf) mulch may not be required.

Soil moisture levels should be regularly monitored by the Project Arborist. Temporary irrigation or watering may be required within the TPZ. An above-ground irrigation system should be installed and maintained by a competent individual.

All weeds should be removed by hand without soil disturbance or should be controlled with appropriate use of herbicide.

5.5 Working within the TPZ

Some works and activities within the TPZ may be permitted by the determining authority. These must be directly supervised on site by the Project Arborist. Any additional encroachment that becomes necessary as the site works progress must be reviewed by the Project Arborist and be acceptable to the determining authority before being carried out.

5.6 Ground Protection

If temporary access for machinery is required within the TPZ, ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Examples of ground protection include track mats (Figure 11) and rumble boards strapped over mulch or crushed rock (Figure 12). Depending on weather conditions, geotextile fabric may be required to prevent mulch and crushed rock mixing into the site soils.



Figure 11: Track mats.



Figure 12: Rumble boards over crushed rock.

5.7 Trunk and Branch Protection

Where trees cannot be isolated from vehicles or machinery by TPZ fencing, trunk and branch protection may be required to prevent mechanical damage. Protection may consist of padding surrounding the trunk or branch, held in place with batons strapped together, or similar (Figure 13). Boards are to be strapped to trees, not nailed or screwed.

Crown protection may also include pruning, tying-back of branches or other measures. If pruning is required, it must be undertaken by a qualified arborist and as per the specifications of AS 4373-2007 *Pruning of Amenity Trees* and should be undertaken before the establishment of the TPZ.

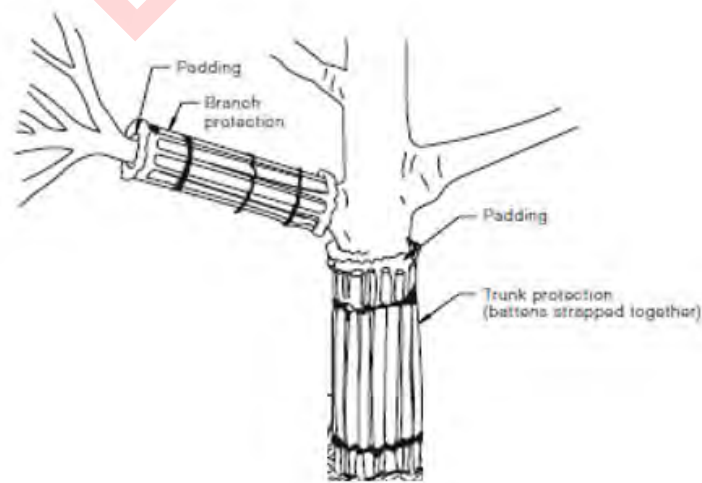


Figure 13: Example of trunk and branch protection (Source: AS 4970-2009).

5.8 Scaffolding

Where scaffolding is required it should be erected outside the TPZ. Where it is essential for scaffolding to be erected within the TPZ, branch removal should be minimised. The ground below the scaffolding should be protected by boarding (e.g. scaffold board or plywood sheeting Figure 14). Where access is required, a board walk or other surface material should be installed to minimise soil compaction. Boarding should be placed over a layer of mulch and impervious sheeting to prevent soil contamination. The boarding should be left in place until the scaffolding is removed.



Figure 14: Scaffold on boarding.

Appendix 6. Individual Tree Data

DRAFT

Tree Number: 1 **Botanical Name:** *Corymbia ficifolia*
Common Name: Flowering Gum
Origin: Native
Height & Width (m): 4 x 5
DBH (cm): 32
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.84
SRZ (m): 2.05
Retention Value: Medium
Landscape Contribution Low
Comments:



Tree Number: 2 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 16 x 12
DBH (cm): 100
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 12
SRZ (m): 3.67
Retention Value: High
Landscape Contribution High
Comments: Nest in upper canopy



Tree Number: 3 **Botanical Name:** *Corymbia ficifolia*
Common Name: Flowering Gum
Origin: Native
Height & Width (m): 3 x 4
DBH (cm): 17
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2.04
SRZ (m): 1.82
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 4 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 9 x 5
DBH (cm): 29
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 3.48
SRZ (m): 2.05
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 5 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 10 x 6
DBH (cm): 30
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.6
SRZ (m): 2.13
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 6 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 11 x 5
DBH (cm): 28
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.36
SRZ (m): 2.1
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 7 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 11 x 7
DBH (cm): 48
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.76
SRZ (m): 2.49
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 8 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 7 x 8
DBH (cm): 35
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.2
SRZ (m): 2.25
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 9 **Botanical Name:** *Eucalyptus sideroxylon*
Common Name: Red Ironbark
Origin: Native
Height & Width (m): 10 x 8
DBH (cm): 45
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.4
SRZ (m): 2.49
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 10 **Botanical Name:** *Corymbia ficifolia*
Common Name: Flowering Gum
Origin: Native
Height & Width (m): 3 x 4
DBH (cm): 19
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2.28
SRZ (m): 1.79
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 11 **Botanical Name:** *Eucalyptus sideroxylon*
Common Name: Red Ironbark
Origin: Native
Height & Width (m): 11 x 9
DBH (cm): 60
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.2
SRZ (m): 2.74
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 12 **Botanical Name:** *Eucalyptus sideroxylon*
Common Name: Red Ironbark
Origin: Native
Height & Width (m): 9 x 7
DBH (cm): 38
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.56
SRZ (m): 2.41
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 13 **Botanical Name:** *Corymbia ficifolia*
Common Name: Flowering Gum
Origin: Native
Height & Width (m): 3 x 5
DBH (cm): 16
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.79
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 14 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 21 x 13
DBH (cm): 106
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 12.72
SRZ (m): 3.63
Retention Value: Very High
Landscape Contribution High
Comments: Hollow in upper canopy



Tree Number: 15 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 16 x 12
DBH (cm): 63
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 7.56
SRZ (m): 2.85
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 16 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 13 x 9
DBH (cm): 50
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6
SRZ (m): 2.71
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 17 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 15 x 10
DBH (cm): 60
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 7.2
SRZ (m): 2.76
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 18 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 12 x 10
DBH (cm): 32
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.84
SRZ (m): 2.28
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 19 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 17 x 11
DBH (cm): 57
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.84
SRZ (m): 3.08
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 20 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 11 x 7
DBH (cm): 31
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.72
SRZ (m): 2.15
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 21 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 15 x 10
DBH (cm): 43
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.16
SRZ (m): 2.51
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 22 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 18 x 10
DBH (cm): 91
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 10.92
SRZ (m): 3.24
Retention Value: High
Landscape Contribution: High
Comments: Multistemmed, Hollow in canopy



Tree Number: 23 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 17 x 15
DBH (cm): 94
Health: Fair
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 11.28
SRZ (m): 3.44
Retention Value: Very High
Landscape Contribution: High
Comments:



Tree Number: 24 **Botanical Name:** *Eucalyptus scoparia*
Common Name: Wallangarra Gum
Origin: Native
Height & Width (m): 12 x 11
DBH (cm): 77
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 9.24
SRZ (m): 3.21
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 25 **Botanical Name:** *Casuarina cunninghamiana*
Common Name: River She-oak
Origin: Native
Height & Width (m): 13 x 9
DBH (cm): 98
Health: Good
Structure: Good
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 11.76
SRZ (m): 3.52
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 26 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 20 x 9
DBH (cm): 80
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 9.6
SRZ (m): 3.21
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 27 **Botanical Name:** *Eucalyptus mannifera*
Common Name: Brittle Gum
Origin: Native
Height & Width (m): 22 x 14
DBH (cm): 134
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 15
SRZ (m): 3.91
Retention Value: Very High
Landscape Contribution High
Comments:



Tree Number: 28 **Botanical Name:** *Eucalyptus viminalis*
Common Name: Manna Gum
Origin: Indigenous
Height & Width (m): 16 x 11
DBH (cm): 79
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 9.48
SRZ (m): 3.2
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 29 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 13 x 15
DBH (cm): 70
Health: Poor
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 8.4
SRZ (m): 2.93
Retention Value: Low
Landscape Contribution: Medium
Comments:



Tree Number: 30 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 8 x 10
DBH (cm): 68
Health: Dead
Structure: Poor
ULE: 0 years
Maturity: Mature
TPZ (m): 8.16
SRZ (m): 2.76
Retention Value: Low
Landscape Contribution: Low
Comments:



Tree Number: 31 **Botanical Name:** *Casuarina cunninghamiana*
Common Name: River She-oak
Origin: Native
Height & Width (m): 11 x 10
DBH (cm): 59
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.08
SRZ (m): 2.74
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 32 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 10 x 11
DBH (cm): 68
Health: Fair
Structure: Very poor
ULE: 0 years
Maturity: Mature
TPZ (m): 8.16
SRZ (m): 2.85
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 33 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 15 x 10
DBH (cm): 73
Health: Dead
Structure: Poor
ULE: 0 years
Maturity: Mature
TPZ (m): 8.76
SRZ (m): 3.01
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 34 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 16 x 15
DBH (cm): 66
Health: Fair
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.92
SRZ (m): 2.88
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 35 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 16 x 14
DBH (cm): 58
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.96
SRZ (m): 2.85
Retention Value: Medium
Landscape Contribution: High
Comments: Decay throughout canopy



Tree Number: 36 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 13 x 12
DBH (cm): 52
Health: Poor
Structure: Fair
ULE: Less than 5 years
Maturity: Mature
TPZ (m): 6.24
SRZ (m): 2.69
Retention Value: Low
Landscape Contribution: Low
Comments:



Tree Number: 37 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 15 x 13
DBH (cm): 72
Health: Fair
Structure: Poor
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 8.64
SRZ (m): 2.97
Retention Value: Medium
Landscape Contribution Medium
Comments: Remove splitting branch towards oval



Tree Number: 38 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 13 x 12
DBH (cm): 64
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 7.68
SRZ (m): 2.88
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 39 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 12 x 11
DBH (cm): 73
Health: Fair
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 8.76
SRZ (m): 3.08
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 40 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 14 x 12
DBH (cm): 85
Health: Good
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 10.2
SRZ (m): 3.22
Retention Value: Low
Landscape Contribution: High
Comments: Nest in upper canopy



Tree Number: 41 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 15 x 12
DBH (cm): 74
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 8.88
SRZ (m): 3.09
Retention Value: Medium
Landscape Contribution: High
Comments:



Tree Number: 42 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 16 x 10
DBH (cm): 76
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 9.12
SRZ (m): 3.06
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 43 **Botanical Name:** *Eucalyptus leucoxylon*
Common Name: Yellow Gum
Origin: Native
Height & Width (m): 9 x 7
DBH (cm): 19
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2.28
SRZ (m): 1.82
Retention Value: Medium
Landscape Contribution: Medium
Comments: Overshadowed by adjacent trees



Tree Number: 44 **Botanical Name:** *Eucalyptus nicholii*
Common Name: Narrow-leaved Black Peppermint
Origin: Native
Height & Width (m): 13 x 12
DBH (cm): 77
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 9.24
SRZ (m): 3.03
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 45 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 14 x 7
DBH (cm): 51
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 6.12
SRZ (m): 2.83
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 46 **Botanical Name:** *Eucalyptus globulus*
Common Name: Blue Gum
Origin: Native
Height & Width (m): 16 x 15
DBH (cm): 125
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 15
SRZ (m): 3.88
Retention Value: Very High
Landscape Contribution High
Comments:



Tree Number: 47 **Botanical Name:** *Casuarina cunninghamiana*
Common Name: River She-oak
Origin: Native
Height & Width (m): 12 x 9
DBH (cm): 72
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 8.64
SRZ (m): 3.09
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 48 **Botanical Name:** *Corymbia maculata*
Common Name: Spotted Gum
Origin: Native
Height & Width (m): 20 x 12
DBH (cm): 65
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.8
SRZ (m): 3
Retention Value: High
Landscape Contribution High
Comments: Nest in upper canopy



Tree Number: 49 **Botanical Name:** *Corymbia maculata*
Common Name: Spotted Gum
Origin: Native
Height & Width (m): 15 x 12
DBH (cm): 66
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.92
SRZ (m): 2.98
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 50 **Botanical Name:** *Eucalyptus cinerea*
Common Name: Mealy Stringybark
Origin: Native
Height & Width (m): 7 x 4
DBH (cm): 30
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3.6
SRZ (m): 2.13
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 51 **Botanical Name:** *Eucalyptus cinerea*
Common Name: Mealy Stringybark
Origin: Native
Height & Width (m): 6 x 3
DBH (cm): 25
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3
SRZ (m): 1.97
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 52 **Botanical Name:** *Angophora floribunda*
Common Name: Rough Barked Apple
Origin: Native
Height & Width (m): 11 x 7
DBH (cm): 42
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.04
SRZ (m): 2.45
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 53 **Botanical Name:** *Angophora floribunda*
Common Name: Rough Barked Apple
Origin: Native
Height & Width (m): 13 x 5
DBH (cm): 36
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.32
SRZ (m): 2.39
Retention Value: Medium
Landscape Contribution: High
Comments:



Tree Number: 54 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 18 x 8
DBH (cm): 117
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 14.04
SRZ (m): 3.65
Retention Value: Very High
Landscape Contribution: High
Comments: Hollow in trunk, Bird damage



Tree Number: 55 **Botanical Name:** *Eucalyptus cinerea*
Common Name: Mealy Stringybark
Origin: Native
Height & Width (m): 10 x 5
DBH (cm): 37
Health: Excellent
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.44
SRZ (m): 2.37
Retention Value: Medium
Landscape Contribution High
Comments:



Tree Number: 56 **Botanical Name:** *Eucalyptus cinerea*
Common Name: Mealy Stringybark
Origin: Native
Height & Width (m): 8 x 5
DBH (cm): 32
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.84
SRZ (m): 2.32
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 57 **Botanical Name:** *Eucalyptus cinerea*
Common Name: Mealy Stringybark
Origin: Native
Height & Width (m): 6 x 5
DBH (cm): 26
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3.12
SRZ (m): 2.02
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 58 **Botanical Name:** *Eucalyptus cinerea*
Common Name: Mealy Stringybark
Origin: Native
Height & Width (m): 10 x 7
DBH (cm): 49
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.88
SRZ (m): 2.57
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 59 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 7 x 5
DBH (cm): 22
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.64
SRZ (m): 1.88
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 60 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 8 x 5
DBH (cm): 28
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 3.36
SRZ (m): 1.97
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 61 **Botanical Name:** *Allocasuarina littoralis*
Common Name: Black She-oak
Origin: Indigenous
Height & Width (m): 9 x 5
DBH (cm): 42
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.04
SRZ (m): 2.47
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 62 **Botanical Name:** *Allocasuarina littoralis*
Common Name: Black She-oak
Origin: Indigenous
Height & Width (m): 10 x 8
DBH (cm): 50
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6
SRZ (m): 2.63
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 63 **Botanical Name:** *Allocasuarina littoralis*
Common Name: Black She-oak
Origin: Indigenous
Height & Width (m): 9 x 5
DBH (cm): 29
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.48
SRZ (m): 2.2
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 64 **Botanical Name:** *Allocasuarina littoralis*
Common Name: Black She-oak
Origin: Indigenous
Height & Width (m): 9 x 8
DBH (cm): 38
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.56
SRZ (m): 2.43
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 65 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 3 x 1
DBH (cm): 4
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 66 **Botanical Name:** *Eucalyptus polyanthemos*
Common Name: Red Box
Origin: Indigenous
Height & Width (m): 3 x 1
DBH (cm): 3
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 67 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 3 x 1
DBH (cm): 3
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 68 **Botanical Name:** *Eucalyptus globulus*
Common Name: Blue Gum
Origin: Native
Height & Width (m): 4 x 3
DBH (cm): 11
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 69 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 2 x 1
DBH (cm): 3
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 70 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 8 x 6
DBH (cm): 40
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.8
SRZ (m): 2.47
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 71 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 9
DBH (cm): 48
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.76
SRZ (m): 2.63
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 72 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 8 x 5
DBH (cm): 25
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3
SRZ (m): 2.02
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 73 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 11 x 6
DBH (cm): 33
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.96
SRZ (m): 2.25
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 74 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 11 x 8
DBH (cm): 39
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.68
SRZ (m): 2.37
Retention Value: High
Landscape Contribution: High
Comments: Nest in upper canopy



Tree Number: 75 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 9 x 6
DBH (cm): 28
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.36
SRZ (m): 2.18
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 76 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 7 x 8
DBH (cm): 39
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.68
SRZ (m): 2.47
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 77 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 6 x 6
DBH (cm): 23
Health: Poor
Structure: Fair
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 2.76
SRZ (m): 1.91
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 78 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 9 x 8
DBH (cm): 51
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 6.12
SRZ (m): 2.59
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 79 **Botanical Name:** *Eucalyptus melliodora*
Common Name: Yellow Box
Origin: Indigenous
Height & Width (m): 6 x 4
DBH (cm): 21
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.52
SRZ (m): 1.85
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 80 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 15 x 8
DBH (cm): 55
Health: Fair
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 6.6
SRZ (m): 2.73
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 81 **Botanical Name:** *Eucalyptus melliodora*
Common Name: Yellow Box
Origin: Indigenous
Height & Width (m): 9 x 4
DBH (cm): 29
Health: Good
Structure: Very poor
ULE: Less than 5 years
Maturity: Semi mature
TPZ (m): 3.48
SRZ (m): 2.05
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 82 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 10 x 6
DBH (cm): 43
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.16
SRZ (m): 2.57
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 83 **Botanical Name:** *Eucalyptus melliodora*
Common Name: Yellow Box
Origin: Indigenous
Height & Width (m): 5 x 3
DBH (cm): 15
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.65
Retention Value: Low
Landscape Contribution Low
Comments: Whipper snipper damage



Tree Number: 84 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 10 x 8
DBH (cm): 43
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.16
SRZ (m): 2.49
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 85 **Botanical Name:** *Corymbia citriodora*
Common Name: Lemon-scented Gum
Origin: Native
Height & Width (m): 16 x 13
DBH (cm): 84
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 10.08
SRZ (m): 3.28
Retention Value: High
Landscape Contribution: High
Comments: Nest in upper canopy



Tree Number: 86 **Botanical Name:** *Pittosporum undulatum*
Common Name: Sweet Pittosporum
Origin: Native
Height & Width (m): 5 x 5
DBH (cm): 18
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 2.16
SRZ (m): 1.68
Retention Value: Low
Landscape Contribution: Low
Comments: Estimated DBH



Tree Number: 87 **Botanical Name:** *Callistemon citrinus*
Common Name: Crimson Bottle Brush
Origin: Native
Height & Width (m): 5 x 3
DBH (cm): 12
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 2
SRZ (m): 1.61
Retention Value: Low
Landscape Contribution: Low
Comments: Group of 10



Tree Number: 88 **Botanical Name:** *Pittosporum undulatum*
Common Name: Sweet Pittosporum
Origin: Native
Height & Width (m): 5 x 5
DBH (cm): 20
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 2.4
SRZ (m): 1.85
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 89 **Botanical Name:** *Melia azedarach*
Common Name: White Cedar
Origin: Native
Height & Width (m): 7 x 8
DBH (cm): 55
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.6
SRZ (m): 2.67
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 90 **Botanical Name:** *Eucalyptus leucoxylon*
Common Name: Yellow Gum
Origin: Native
Height & Width (m): 7 x 14
DBH (cm): 39
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.68
SRZ (m): 2.43
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 91 **Botanical Name:** *Corymbia citriodora*
Common Name: Lemon-scented Gum
Origin: Native
Height & Width (m): 16 x 17
DBH (cm): 72
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 8.64
SRZ (m): 3.08
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 92 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 8
DBH (cm): 54
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.48
SRZ (m): 2.83
Retention Value: High
Landscape Contribution High
Comments: Overshadowed by adjacent trees



Tree Number: 93 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 17 x 15
DBH (cm): 107
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 12.84
SRZ (m): 3.55
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 94 **Botanical Name:** *Allocasuarina verticillata*
Common Name: Drooping She Oak
Origin: Indigenous
Height & Width (m): 7 x 6
DBH (cm): 38
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.56
SRZ (m): 2.3
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 95 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 17 x 14
DBH (cm): 130
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 15
SRZ (m): 3.83
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 96 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 8 x 3
DBH (cm): 11
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.53
Retention Value: Low
Landscape Contribution Low
Comments: Group of 8 suckers under 15cm DBH .
Suckers under 8cm DBH were not collected.



Tree Number: 97 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 3
DBH (cm): 15
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.68
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 98 **Botanical Name:** *Eucalyptus globulus*
Common Name: Blue Gum
Origin: Native
Height & Width (m): 11 x 4
DBH (cm): 26
Health: Good
Structure: Good
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 3.12
SRZ (m): 2.1
Retention Value: Medium
Landscape Contribution Medium
Comments: Overshadowed by adjacent trees



Tree Number: 99 **Botanical Name:** *Acacia longifolia* var. *sophorae*
Common Name: Coast Wattle
Origin: Indigenous
Height & Width (m): 7 x 8
DBH (cm): 35
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.2
SRZ (m): 2.34
Retention Value: Medium
Landscape Contribution Medium
Comments: Nest, used as cubby house



Tree Number: 100 **Botanical Name:** *Acacia implexa*
Common Name: Lightwood
Origin: Indigenous
Height & Width (m): 6 x 3
DBH (cm): 11
Health: Good
Structure: Poor
ULE: Less than 5 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.53
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 101 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 20 x 12
DBH (cm): 114
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 13.68
SRZ (m): 3.68
Retention Value: High
Landscape Contribution High
Comments: Multiple hollows, has been underplanted, high habitat value



Tree Number: 102 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 17 x 10
DBH (cm): 67
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 8.04
SRZ (m): 3
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 103 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 20 x 8
DBH (cm): 67
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 8.04
SRZ (m): 3.15
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 104 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 18 x 12
DBH (cm): 58
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 6.96
SRZ (m): 3.18
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 105 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 17 x 4
DBH (cm): 38
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.56
SRZ (m): 2.45
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 106 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 18 x 6
DBH (cm): 42
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.04
SRZ (m): 2.61
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 107 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 18 x 7
DBH (cm): 63
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 7.56
SRZ (m): 2.92
Retention Value: High
Landscape Contribution: High
Comments: Hollow in trunk



Tree Number: 108 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 16 x 10
DBH (cm): 66
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 7.92
SRZ (m): 3.03
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 109 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 9 x 2
DBH (cm): 17
Health: Good
Structure: Poor
ULE: 5 to 10 years
Maturity: Semi mature
TPZ (m): 2.04
SRZ (m): 1.68
Retention Value: Low
Landscape Contribution Low
Comments: Regrowth from stump



Tree Number: 110 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 17 x 8
DBH (cm): 70
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 8.4
SRZ (m): 3.17
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 111 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 16 x 12
DBH (cm): 80
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 9.6
SRZ (m): 3.3
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 112 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 16 x 12
DBH (cm): 71
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 8.52
SRZ (m): 3.12
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 113 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 4
DBH (cm): 37
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.44
SRZ (m): 2.41
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 114 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 17 x 7
DBH (cm): 52
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.24
SRZ (m): 2.8
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 115 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 17 x 10
DBH (cm): 80
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 9.6
SRZ (m): 3.5
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 116 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 21 x 16
DBH (cm): 119
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 14.28
SRZ (m): 3.74
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 117 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 20 x 7
DBH (cm): 59
Health: Fair
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.08
SRZ (m): 2.87
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 118 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 20 x 8
DBH (cm): 67
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 8.04
SRZ (m): 3.09
Retention Value: High
Landscape Contribution: High
Comments: Will require structural pruning due to included union in canopy.



Tree Number: 119 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 22 x 10
DBH (cm): 82
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 9.84
SRZ (m): 3.31
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 120 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 22 x 6
DBH (cm): 56
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.72
SRZ (m): 2.92
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 121 **Botanical Name:** *Eucalyptus melliodora*
Common Name: Yellow Box
Origin: Indigenous
Height & Width (m): 5 x 4
DBH (cm): 16
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.65
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 122 **Botanical Name:** *Eucalyptus melliodora*
Common Name: Yellow Box
Origin: Indigenous
Height & Width (m): 4 x 4
DBH (cm): 18
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.16
SRZ (m): 1.75
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 123 **Botanical Name:** *Eucalyptus melliodora*
Common Name: Yellow Box
Origin: Indigenous
Height & Width (m): 6 x 4
DBH (cm): 19
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.28
SRZ (m): 1.85
Retention Value: Medium
Landscape Contribution Low
Comments:



Tree Number: 124 **Botanical Name:** *Acacia melanoxylon*
Common Name: Blackwood
Origin: Indigenous
Height & Width (m): 7 x 6
DBH (cm): 22
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 2.64
SRZ (m): 1.82
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 125 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 4 x 6
DBH (cm): 12
Health: Good
Structure: Fair
ULE: 5 to 10 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments: Regrowth from stump, front edge



Tree Number: 126 **Botanical Name:** *Acacia melanoxylon*
Common Name: Blackwood
Origin: Indigenous
Height & Width (m): 7 x 6
DBH (cm): 28
Health: Good
Structure: Good
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.36
SRZ (m): 2.1
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 127 **Botanical Name:** *Acacia melanoxylon*
Common Name: Blackwood
Origin: Indigenous
Height & Width (m): 8 x 6
DBH (cm): 30
Health: Good
Structure: Good
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.6
SRZ (m): 2.39
Retention Value: Medium
Landscape Contribution: Medium
Comments: Estimated DBH due to vegetation



Tree Number: 128 **Botanical Name:** *Eucalyptus nicholii*
Common Name: Narrow-leaved Black Peppermint
Origin: Native
Height & Width (m): 11 x 10
DBH (cm): 78
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 9.36
SRZ (m): 3.17
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 129 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 2 x 1
DBH (cm): 2
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution: Low
Comments:



Tree Number: 130 **Botanical Name:** *Eucalyptus sideroxylon*
Common Name: Red Ironbark
Origin: Native
Height & Width (m): 2 x 1
DBH (cm): 4
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 131 **Botanical Name:** *Eucalyptus sideroxylon*
Common Name: Red Ironbark
Origin: Native
Height & Width (m): 3 x 1
DBH (cm): 3
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 132 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 2 x 1
DBH (cm): 3
Health: Fair
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 133 **Botanical Name:** *Eucalyptus polyanthemos*
Common Name: Red Box
Origin: Indigenous
Height & Width (m): 2 x 1
DBH (cm): 5
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 134 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 2 x 2
DBH (cm): 4
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 135 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 2 x 1
DBH (cm): 3
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 136 **Botanical Name:** *Eucalyptus sideroxylon*
Common Name: Red Ironbark
Origin: Native
Height & Width (m): 4 x 1
DBH (cm): 3
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 137 **Botanical Name:** *Eucalyptus globulus*
Common Name: Blue Gum
Origin: Native
Height & Width (m): 14 x 14
DBH (cm): 121
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 14.52
SRZ (m): 3.8
Retention Value: High
Landscape Contribution High
Comments: Large bracket fungi



Tree Number: 138 **Botanical Name:** *Eucalyptus globulus*
Common Name: Blue Gum
Origin: Native
Height & Width (m): 14 x 14
DBH (cm): 120
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 14.4
SRZ (m): 3.73
Retention Value: High
Landscape Contribution High
Comments: Multiple bracket fungi



Tree Number: 139 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 16 x 8
DBH (cm): 65
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.8
SRZ (m): 2.88
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 140 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 16 x 12
DBH (cm): 60
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 7.2
SRZ (m): 2.87
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 141 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 11 x 11
DBH (cm): 50
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6
SRZ (m): 2.69
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 142 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 14 x 11
DBH (cm): 73
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 8.76
SRZ (m): 3.32
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 143 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 18 x 15
DBH (cm): 91
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 10.92
SRZ (m): 3.4
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 144 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 13 x 10
DBH (cm): 57
Health: Fair
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 6.84
SRZ (m): 2.74
Retention Value: Low
Landscape Contribution Medium
Comments: Overshadowed by adjacent trees



Tree Number: 145 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 19 x 7
DBH (cm): 59
Health: Fair
Structure: Poor
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 7.08
SRZ (m): 2.85
Retention Value: Medium
Landscape Contribution: Medium
Comments: Hollow in canopy



Tree Number: 146 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 17 x 9
DBH (cm): 47
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.64
SRZ (m): 2.59
Retention Value: Medium
Landscape Contribution: High
Comments:



Tree Number: 147 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 13 x 4
DBH (cm): 29
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.48
SRZ (m): 2.18
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 148 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 8 x 5
DBH (cm): 19
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2.28
SRZ (m): 1.82
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 149 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 18 x 11
DBH (cm): 66
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.92
SRZ (m): 2.97
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 150 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 13 x 17
DBH (cm): 78
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 9.36
SRZ (m): 3.12
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 151 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 13 x 11
DBH (cm): 57
Health: Fair
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 6.84
SRZ (m): 2.81
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 152 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 10 x 11
DBH (cm): 58
Health: Fair
Structure: Poor
ULE: Less than 5 years
Maturity: Mature
TPZ (m): 6.96
SRZ (m): 2.76
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 154 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 10 x 11
DBH (cm): 62
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 7.44
SRZ (m): 3.14
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 155 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 14 x 15
DBH (cm): 92
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 11.04
SRZ (m): 3.31
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 156 **Botanical Name:** *Agonis flexuosa*
Common Name: West Australian Willow Myrtle
Origin: Native
Height & Width (m): 7 x 10
DBH (cm): 70
Health: Fair
Structure: Poor
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 8.4
SRZ (m): 3.06
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 157 **Botanical Name:** *Agonis flexuosa*
Common Name: West Australian Willow Myrtle
Origin: Native
Height & Width (m): 9 x 9
DBH (cm): 78
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 9.36
SRZ (m): 3.18
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 158 **Botanical Name:** *Eucalyptus saligna*
Common Name: Sydney Blue Gum
Origin: Native
Height & Width (m): 18 x 13
DBH (cm): 66
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 7.92
SRZ (m): 2.98
Retention Value: Medium
Landscape Contribution High
Comments:



Tree Number: 159 **Botanical Name:** *Corymbia citriodora*
Common Name: Lemon-scented Gum
Origin: Native
Height & Width (m): 18 x 13
DBH (cm): 79
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 9.48
SRZ (m): 3.27
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 160 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 14 x 6
DBH (cm): 37
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.44
SRZ (m): 2.25
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 161 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 16 x 11
DBH (cm): 81
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 9.72
SRZ (m): 3.21
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 162 **Botanical Name:** *Melaleuca armillaris*
Common Name: Giant Honey Myrtle
Origin: Native
Height & Width (m): 7 x 10
DBH (cm): 49
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.88
SRZ (m): 2.71
Retention Value: Medium
Landscape Contribution: Medium
Comments: Overshadowed by adjacent trees



Tree Number: 163 **Botanical Name:** *Corymbia maculata*
Common Name: Spotted Gum
Origin: Native
Height & Width (m): 12 x 3
DBH (cm): 31
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3.72
SRZ (m): 2.2
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 164 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 13 x 7
DBH (cm): 41
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.92
SRZ (m): 2.51
Retention Value: Medium
Landscape Contribution Medium
Comments: Girdling root



Tree Number: 165 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 14 x 7
DBH (cm): 34
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.08
SRZ (m): 2.45
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 166 **Botanical Name:** *Eucalyptus saligna*
Common Name: Sydney Blue Gum
Origin: Native
Height & Width (m): 11 x 6
DBH (cm): 21
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.52
SRZ (m): 1.82
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 167 **Botanical Name:** *Eucalyptus saligna*
Common Name: Sydney Blue Gum
Origin: Native
Height & Width (m): 14 x 5
DBH (cm): 31
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.72
SRZ (m): 2.25
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 168 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 15 x 5
DBH (cm): 32
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.84
SRZ (m): 2.28
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 169 **Botanical Name:** *Acacia melanoxylon*
Common Name: Blackwood
Origin: Indigenous
Height & Width (m): 7 x 4
DBH (cm): 28
Health: Fair
Structure: Poor
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.36
SRZ (m): 2.08
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 170 **Botanical Name:** *Angophora costata*
Common Name: Smooth-barked Apple Myrtle
Origin: Native
Height & Width (m): 15 x 7
DBH (cm): 54
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.48
SRZ (m): 2.76
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 171 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 4 x 7
DBH (cm): 26
Health: Fair
Structure: Poor
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.12
SRZ (m): 2.1
Retention Value: Low
Landscape Contribution: Low
Comments: Overshadowed by adjacent trees



Tree Number: 172 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 3 x 8
DBH (cm): 21
Health: Fair
Structure: Poor
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 2.52
SRZ (m): 1.91
Retention Value: Low
Landscape Contribution: Low
Comments: Overshadowed by adjacent trees



Tree Number: 173 **Botanical Name:** *Eucalyptus saligna*
Common Name: Sydney Blue Gum
Origin: Native
Height & Width (m): 16 x 7
DBH (cm): 51
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 6.12
SRZ (m): 2.76
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 174 **Botanical Name:** *Corymbia citriodora*
Common Name: Lemon-scented Gum
Origin: Native
Height & Width (m): 16 x 8
DBH (cm): 48
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.76
SRZ (m): 2.67
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 175 **Botanical Name:** *Allocasuarina littoralis*
Common Name: Black She-oak
Origin: Indigenous
Height & Width (m): 9 x 8
DBH (cm): 40
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.8
SRZ (m): 2.59
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 176 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 15 x 7
DBH (cm): 42
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.04
SRZ (m): 2.59
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 177 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 14 x 8
DBH (cm): 57
Health: Fair
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 6.84
SRZ (m): 2.76
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 178 **Botanical Name:** *Acacia implexa*
Common Name: Lightwood
Origin: Indigenous
Height & Width (m): 6 x 5
DBH (cm): 15
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.72
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 179 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 15 x 7
DBH (cm): 44
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.28
SRZ (m): 2.55
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 180 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 12 x 6
DBH (cm): 32
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.84
SRZ (m): 2.34
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 181 **Botanical Name:** *Eucalyptus saligna*
Common Name: Sydney Blue Gum
Origin: Native
Height & Width (m): 11 x 4
DBH (cm): 19
Health: Fair
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.28
SRZ (m): 1.75
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 182 **Botanical Name:** *Eucalyptus saligna*
Common Name: Sydney Blue Gum
Origin: Native
Height & Width (m): 11 x 3
DBH (cm): 17
Health: Fair
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.04
SRZ (m): 1.82
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 183 **Botanical Name:** *Melaleuca styphelioides*
Common Name: Prickly Paperbark
Origin: Native
Height & Width (m): 10 x 7
DBH (cm): 57
Health: Fair
Structure: Good
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.84
SRZ (m): 2.73
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 184 **Botanical Name:** *Melaleuca styphelioides*
Common Name: Prickly Paperbark
Origin: Native
Height & Width (m): 9 x 7
DBH (cm): 62
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 7.44
SRZ (m): 2.67
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 185 **Botanical Name:** *Callistemon 'Kings Park Special'*

Common Name: Crimson Bottlebrush

Origin: Native

Height & Width (m): 5 x 7

DBH (cm): 41

Health: Fair

Structure: Very poor

ULE: 0 years

Maturity: Mature

TPZ (m): 4.92

SRZ (m): 2.34

Retention Value: Low

Landscape Contribution: Low

Comments:



Tree Number: 186 **Botanical Name:** *Eucalyptus camaldulensis*

Common Name: River Red Gum

Origin: Indigenous

Height & Width (m): 11 x 7

DBH (cm): 33

Health: Good

Structure: Fair

ULE: 20 to 40 years

Maturity: Mature

TPZ (m): 3.96

SRZ (m): 2.3

Retention Value: Medium

Landscape Contribution: Medium

Comments:



Tree Number: 187 **Botanical Name:** *Eucalyptus radiata*

Common Name: Narrow-leaved Peppermint

Origin: Indigenous

Height & Width (m): 9 x 8

DBH (cm): 25

Health: Fair

Structure: Fair

ULE: 10 to 20 years

Maturity: Mature

TPZ (m): 3

SRZ (m): 2.13

Retention Value: Medium

Landscape Contribution: Medium

Comments: Estimated DBH due to vegetation



Tree Number: 188 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 17 x 7
DBH (cm): 44
Health: Fair
Structure: Good
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.28
SRZ (m): 2.57
Retention Value: Medium
Landscape Contribution High
Comments:



Tree Number: 189 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 15 x 9
DBH (cm): 40
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.8
SRZ (m): 2.51
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 190 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 15 x 7
DBH (cm): 37
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.44
SRZ (m): 2.43
Retention Value: Medium
Landscape Contribution Medium
Comments: Overshadowed by adjacent trees



Tree Number: 191 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 16 x 11
DBH (cm): 59
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 7.08
SRZ (m): 2.85
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 192 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 9 x 6
DBH (cm): 35
Health: Fair
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 4.2
SRZ (m): 2.13
Retention Value: Low
Landscape Contribution: Medium
Comments:



Tree Number: 193 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 6
DBH (cm): 28
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3.36
SRZ (m): 2.13
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 194 **Botanical Name:** *Allocasuarina littoralis*
Common Name: Black She-oak
Origin: Indigenous
Height & Width (m): 8 x 3
DBH (cm): 18
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.16
SRZ (m): 1.79
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 195 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 14 x 8
DBH (cm): 50
Health: Fair
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 6
SRZ (m): 2.63
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 196 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 10 x 8
DBH (cm): 26
Health: Fair
Structure: Poor
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.12
SRZ (m): 2.18
Retention Value: Low
Landscape Contribution Medium
Comments: Growing into adjacent canopy



Tree Number: 197 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 14 x 8
DBH (cm): 40
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.8
SRZ (m): 2.39
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 198 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 14 x 7
DBH (cm): 37
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.44
SRZ (m): 2.39
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 199 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 14 x 7
DBH (cm): 36
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.32
SRZ (m): 2.41
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 200 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 13 x 9
DBH (cm): 48
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.76
SRZ (m): 2.78
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 201 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 8 x 2
DBH (cm): 16
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.72
Retention Value: Low
Landscape Contribution: Low
Comments:



Tree Number: 202 **Botanical Name:** *Eucalyptus saligna*
Common Name: Sydney Blue Gum
Origin: Native
Height & Width (m): 8 x 8
DBH (cm): 25
Health: Poor
Structure: Poor
ULE: 5 to 10 years
Maturity: Semi mature
TPZ (m): 3
SRZ (m): 2.05
Retention Value: Low
Landscape Contribution: Low
Comments:



Tree Number: 203 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 11 x 9
DBH (cm): 44
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.28
SRZ (m): 2.49
Retention Value: Medium
Landscape Contribution: High
Comments:



Tree Number: 204 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 10 x 7
DBH (cm): 34
Health: Poor
Structure: Fair
ULE: Less than 5 years
Maturity: Mature
TPZ (m): 4.08
SRZ (m): 2.3
Retention Value: Low
Landscape Contribution: Low
Comments:



Tree Number: 205 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 10 x 7
DBH (cm): 31
Health: Poor
Structure: Fair
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 3.72
SRZ (m): 2.2
Retention Value: Low
Landscape Contribution: Low
Comments:



Tree Number: 206 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 7 x 4
DBH (cm): 23
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Semi mature
TPZ (m): 2.76
SRZ (m): 1.91
Retention Value: Low
Landscape Contribution Medium
Comments:



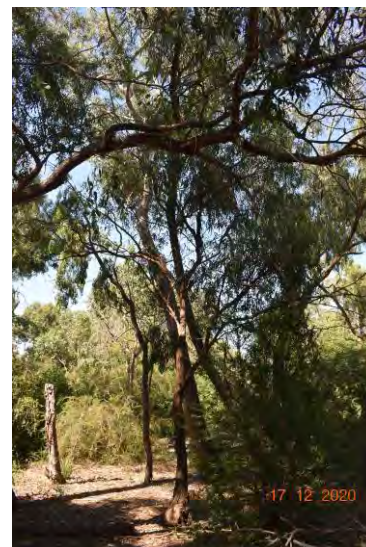
Tree Number: 207 **Botanical Name:** *Eucalyptus yarraensis*
Common Name: Yarra Gum
Origin: Indigenous
Height & Width (m): 12 x 11
DBH (cm): 49
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.88
SRZ (m): 2.51
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 208 **Botanical Name:** *Eucalyptus yarraensis*
Common Name: Yarra Gum
Origin: Indigenous
Height & Width (m): 15 x 7
DBH (cm): 41
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.92
SRZ (m): 2.49
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 209 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 7 x 4
DBH (cm): 15
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.75
Retention Value: Low
Landscape Contribution: Low
Comments: Overshadowed by adjacent trees



Tree Number: 210 **Botanical Name:** *Eucalyptus viminalis subsp. pryoriana*
Common Name: Gippsland Manna Gum
Origin: Indigenous
Height & Width (m): 15 x 8
DBH (cm): 41
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.92
SRZ (m): 2.63
Retention Value: High
Landscape Contribution: Medium
Comments:



Tree Number: 211 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 11 x 10
DBH (cm): 44
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.28
SRZ (m): 2.47
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 212 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 5 x 6
DBH (cm): 29
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.48
SRZ (m): 2.02
Retention Value: Medium
Landscape Contribution: Medium
Comments: Overshadowed by adjacent trees



Tree Number: 213 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 11 x 10
DBH (cm): 48
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.76
SRZ (m): 2.55
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 214 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 14 x 6
DBH (cm): 42
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.04
SRZ (m): 2.51
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 215 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 15 x 6
DBH (cm): 30
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.6
SRZ (m): 2.28
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 216 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 8 x 10
DBH (cm): 49
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.88
SRZ (m): 2.88
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 217 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 13 x 13
DBH (cm): 70
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 8.4
SRZ (m): 3.04
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 218 **Botanical Name:** *Eucalyptus mannifera*
Common Name: Brittle Gum
Origin: Native
Height & Width (m): 7 x 6
DBH (cm): 22
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2.64
SRZ (m): 1.97
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 219 **Botanical Name:** *Acacia implexa*
Common Name: Lightwood
Origin: Indigenous
Height & Width (m): 11 x 7
DBH (cm): 36
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.32
SRZ (m): 2.32
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 220 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 9 x 7
DBH (cm): 34
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.08
SRZ (m): 2.34
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 221 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 5
DBH (cm): 27
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.24
SRZ (m): 2.23
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 222 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 13 x 6
DBH (cm): 43
Health: Fair
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.16
SRZ (m): 2.45
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 223 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 14 x 6
DBH (cm): 60
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.2
SRZ (m): 2.85
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 224 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 5
DBH (cm): 36
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.32
SRZ (m): 2.39
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 225 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 3
DBH (cm): 18
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 2.16
SRZ (m): 1.91
Retention Value: Low
Landscape Contribution Low
Comments: Group of 3



Tree Number: 226 **Botanical Name:** *Eucalyptus viminalis subsp. pryoriana*
Common Name: Gippsland Manna Gum
Origin: Indigenous
Height & Width (m): 5 x 6
DBH (cm): 18
Health: Fair
Structure: Poor
ULE: 10 to 20 years
Maturity: Semi mature
TPZ (m): 2.16
SRZ (m): 1.75
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 227 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 8 x 10
DBH (cm): 35
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.2
SRZ (m): 2.37
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 228 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 9 x 7
DBH (cm): 33
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.96
SRZ (m): 2.2
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 229 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 7 x 6
DBH (cm): 16
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.88
Retention Value: Low
Landscape Contribution Low
Comments: Overshadowed by adjacent trees



Tree Number: 230 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 7 x 5
DBH (cm): 21
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2.52
SRZ (m): 1.91
Retention Value: Low
Landscape Contribution: Low
Comments:



Tree Number: 231 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 7 x 8
DBH (cm): 17
Health: Poor
Structure: Fair
ULE: 10 to 20 years
Maturity: Semi mature
TPZ (m): 2.04
SRZ (m): 1.68
Retention Value: Low
Landscape Contribution: Low
Comments: Group of 4



Tree Number: 232 **Botanical Name:** *Acacia implexa*
Common Name: Lightwood
Origin: Indigenous
Height & Width (m): 6 x 3
DBH (cm): 12
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.53
Retention Value: Low
Landscape Contribution: Low
Comments: Group of 2



Tree Number: 233 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 13 x 8
DBH (cm): 38
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.56
SRZ (m): 2.45
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 234 **Botanical Name:** *Melaleuca linariifolia*
Common Name: Snow in Summer
Origin: Native
Height & Width (m): 6 x 8
DBH (cm): 110
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 13.2
SRZ (m): 3.47
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 235 **Botanical Name:** *Melaleuca linariifolia*
Common Name: Snow in Summer
Origin: Native
Height & Width (m): 6 x 7
DBH (cm): 100
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 12
SRZ (m): 3.31
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 236 **Botanical Name:** *Melaleuca linariifolia*
Common Name: Snow in Summer
Origin: Native
Height & Width (m): 7 x 7
DBH (cm): 96
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 11.52
SRZ (m): 3.38
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 237 **Botanical Name:** *Eucalyptus globulus*
Common Name: Blue Gum
Origin: Native
Height & Width (m): 16 x 15
DBH (cm): 114
Health: Good
Structure: Very poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 13.68
SRZ (m): 3.71
Retention Value: Low
Landscape Contribution: High
Comments: Removal required with change of land use



Tree Number: 238 **Botanical Name:** *Eucalyptus leucoxylon*
Common Name: Yellow Gum
Origin: Native
Height & Width (m): 6 x 6
DBH (cm): 28
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 3.36
SRZ (m): 2
Retention Value: Medium
Landscape Contribution: Medium
Comments: Estimated basal due to vegetation



Tree Number: 239 **Botanical Name:** *Acacia implexa*
Common Name: Lightwood
Origin: Indigenous
Height & Width (m): 7 x 5
DBH (cm): 35
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.2
SRZ (m): 2.18
Retention Value: Low
Landscape Contribution: Medium
Comments: Group of 4



Tree Number: 240 **Botanical Name:** *Acacia implexa*
Common Name: Lightwood
Origin: Indigenous
Height & Width (m): 8 x 7
DBH (cm): 40
Health: Fair
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 4.8
SRZ (m): 2.47
Retention Value: Low
Landscape Contribution: Medium
Comments: Estimated DBH



Tree Number: 241 **Botanical Name:** *Acacia melanoxylon*
Common Name: Blackwood
Origin: Indigenous
Height & Width (m): 5 x 2
DBH (cm): 15
Health: Good
Structure: Good
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.72
Retention Value: Low
Landscape Contribution: Low
Comments: Group of 2



Tree Number: 242 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 14 x 6
DBH (cm): 45
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.4
SRZ (m): 2.61
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 243 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 12 x 9
DBH (cm): 63
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.56
SRZ (m): 3
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 244 **Botanical Name:** *Acacia implexa*
Common Name: Lightwood
Origin: Indigenous
Height & Width (m): 8 x 3
DBH (cm): 24
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 2.88
SRZ (m): 1.97
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 245 **Botanical Name:** *Acacia floribunda*
Common Name: Catkin Wattle
Origin: Native
Height & Width (m): 8 x 3
DBH (cm): 28
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.36
SRZ (m): 2.13
Retention Value: Low
Landscape Contribution: Low
Comments: Group of 2



Tree Number: 246 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 9 x 8
DBH (cm): 55
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 6.6
SRZ (m): 2.13
Retention Value: Medium
Landscape Contribution: Medium
Comments: Weedy understorey



Tree Number: 247 **Botanical Name:** *Acacia implexa*
Common Name: Lightwood
Origin: Indigenous
Height & Width (m): 7 x 5
DBH (cm): 33
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.96
SRZ (m): 2.3
Retention Value: Low
Landscape Contribution: Medium
Comments:



Tree Number: 248 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 13 x 6
DBH (cm): 36
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.32
SRZ (m): 2.37
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 249 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 13 x 6
DBH (cm): 33
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.96
SRZ (m): 2.34
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 250 **Botanical Name:** *Eucalyptus botryoides*
Common Name: Southern Mahogany
Origin: Native
Height & Width (m): 13 x 5
DBH (cm): 28
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3.36
SRZ (m): 2.25
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 251 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 8 x 7
DBH (cm): 44
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.28
SRZ (m): 2.57
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 252 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 8
DBH (cm): 41
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.92
SRZ (m): 2.63
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 253 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 9 x 4
DBH (cm): 20
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.4
SRZ (m): 1.94
Retention Value: Medium
Landscape Contribution Medium
Comments: Overshadowed by adjacent trees



Tree Number: 254 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 4
DBH (cm): 21
Health: Fair
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.52
SRZ (m): 2
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 255 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 13 x 6
DBH (cm): 33
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.96
SRZ (m): 2.39
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 256 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 6 x 8
DBH (cm): 30
Health: Good
Structure: Poor
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3.6
SRZ (m): 2.23
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 257 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 7
DBH (cm): 36
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.32
SRZ (m): 2.3
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 258 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 6
DBH (cm): 28
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.36
SRZ (m): 2.18
Retention Value: Medium
Landscape Contribution Medium
Comments: Similar tree at rear



Tree Number: 259 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 6
DBH (cm): 31
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.72
SRZ (m): 2.13
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 260 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 7
DBH (cm): 34
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.08
SRZ (m): 2.41
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 261 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 13 x 7
DBH (cm): 33
Health: Fair
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 3.96
SRZ (m): 2.57
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 262 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 12 x 6
DBH (cm): 36
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.32
SRZ (m): 2.57
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 263 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 10 x 5
DBH (cm): 33
Health: Fair
Structure: Very poor
ULE: Less than 5 years
Maturity: Mature
TPZ (m): 3.96
SRZ (m): 2.25
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 264 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 11
DBH (cm): 54
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 6.48
SRZ (m): 2.76
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 265 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 6 x 6
DBH (cm): 15
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.61
Retention Value: Low
Landscape Contribution Low
Comments: Overshadowed by adjacent trees, Group of 3



Tree Number: 266 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 14 x 9
DBH (cm): 68
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 8.16
SRZ (m): 3.01
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 267 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 8 x 6
DBH (cm): 20
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 2.4
SRZ (m): 2.2
Retention Value: Low
Landscape Contribution: Low
Comments:



Tree Number: 268 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 7 x 7
DBH (cm): 29
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.48
SRZ (m): 2.13
Retention Value: Medium
Landscape Contribution: Medium
Comments: Overshadowed by adjacent trees



Tree Number: 269 **Botanical Name:** *Melaleuca linariifolia*
Common Name: Snow in Summer
Origin: Native
Height & Width (m): 6 x 7
DBH (cm): 73
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 8.76
SRZ (m): 3.09
Retention Value: Medium
Landscape Contribution: Medium
Comments: Estimated basal due to vegetation



Tree Number: 270 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 8 x 10
DBH (cm): 40
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.8
SRZ (m): 2.51
Retention Value: Medium
Landscape Contribution: Medium
Comments: Overshadowed by adjacent trees, estimated basal due to vegetation



Tree Number: 271 **Botanical Name:** *Eucalyptus radiata*
Common Name: Narrow-leaved Peppermint
Origin: Indigenous
Height & Width (m): 13 x 7
DBH (cm): 46
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.52
SRZ (m): 2.83
Retention Value: High
Landscape Contribution: Medium
Comments:



Tree Number: 272 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 12 x 9
DBH (cm): 57
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.84
SRZ (m): 2.93
Retention Value: High
Landscape Contribution: High
Comments: Estimated DBH due to vegetation



Tree Number: 273 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 14 x 5
DBH (cm): 32
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.84
SRZ (m): 2.25
Retention Value: Medium
Landscape Contribution: Medium
Comments: Estimated basal due to vegetation



Tree Number: 274 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 8
DBH (cm): 24
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 2.88
SRZ (m): 2.13
Retention Value: Medium
Landscape Contribution: Medium
Comments: Overshadowed by adjacent trees, Rubbing branches



Tree Number: 275 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 6
DBH (cm): 41
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.92
SRZ (m): 2.43
Retention Value: Medium
Landscape Contribution Medium
Comments: Estimated DBH due to vegetation



Tree Number: 276 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 9 x 3
DBH (cm): 18
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.16
SRZ (m): 1.72
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 277 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 16 x 7
DBH (cm): 66
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.92
SRZ (m): 2.95
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 278 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 15 x 3
DBH (cm): 20
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.4
SRZ (m): 1.94
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 279 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 13 x 4
DBH (cm): 35
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 4.2
SRZ (m): 2.37
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 280 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 15 x 6
DBH (cm): 31
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.72
SRZ (m): 2.32
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 281 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 14 x 6
DBH (cm): 40
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.8
SRZ (m): 2.73
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 282 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 16 x 5
DBH (cm): 45
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.4
SRZ (m): 2.57
Retention Value: High
Landscape Contribution High
Comments: Estimated basal due to vegetation



Tree Number: 283 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 15 x 5
DBH (cm): 45
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.4
SRZ (m): 2.53
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 284 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 14 x 7
DBH (cm): 60
Health: Good
Structure: Poor
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 7.2
SRZ (m): 2.87
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 285 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 14 x 14
DBH (cm): 84
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 10.08
SRZ (m): 3.38
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 286 **Botanical Name:** *Acacia melanoxylon*
Common Name: Blackwood
Origin: Indigenous
Height & Width (m): 7 x 6
DBH (cm): 29
Health: Fair
Structure: Poor
ULE: 5 to 10 years
Maturity: Mature
TPZ (m): 3.48
SRZ (m): 2.13
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 287 **Botanical Name:** *Acacia melanoxylon*
Common Name: Blackwood
Origin: Indigenous
Height & Width (m): 6 x 3
DBH (cm): 18
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 2.16
SRZ (m): 1.85
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 288 **Botanical Name:** *Acacia melanoxylon*
Common Name: Blackwood
Origin: Indigenous
Height & Width (m): 6 x 5
DBH (cm): 22
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 2.64
SRZ (m): 1.91
Retention Value: Low
Landscape Contribution Medium
Comments: Estimated DBH due to vegetation



Tree Number: 289 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 8 x 4
DBH (cm): 24
Health: Good
Structure: Poor
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.88
SRZ (m): 2
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 290 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 7 x 5
DBH (cm): 29
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3.48
SRZ (m): 2.15
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 291 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 7 x 5
DBH (cm): 22
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2.64
SRZ (m): 1.94
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 292 **Botanical Name:** *Eucalyptus melliodora*
Common Name: Yellow Box
Origin: Indigenous
Height & Width (m): 5 x 4
DBH (cm): 15
Health: Fair
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.65
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 293 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 3 x 1
DBH (cm): 3
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Young
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution: Low
Comments: Group along path



Tree Number: 294 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 9 x 6
DBH (cm): 38
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.56
SRZ (m): 2.71
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 295 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 10 x 8
DBH (cm): 54
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 6.48
SRZ (m): 2.98
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 296 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 8 x 3
DBH (cm): 15
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 2
SRZ (m): 1.68
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 297 **Botanical Name:** *Acacia dealbata*
Common Name: Silver Wattle
Origin: Indigenous
Height & Width (m): 6 x 3
DBH (cm): 9
Health: Good
Structure: Good
ULE: 10 to 20 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 298 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 10 x 9
DBH (cm): 44
Health: Good
Structure: Poor
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.28
SRZ (m): 2.67
Retention Value: Medium
Landscape Contribution Medium
Comments: Potentially regrowth from stump



Tree Number: 299 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 10 x 4
DBH (cm): 30
Health: Fair
Structure: Poor
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.6
SRZ (m): 2.34
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 300 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 7 x 3
DBH (cm): 21
Health: Fair
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.52
SRZ (m): 1.94
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 301 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 6 x 3
DBH (cm): 13
Health: Fair
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.61
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 302 **Botanical Name:** *Eucalyptus saligna*
Common Name: Sydney Blue Gum
Origin: Native
Height & Width (m): 7 x 5
DBH (cm): 16
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.65
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 303 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 6 x 2
DBH (cm): 8
Health: Fair
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 304 **Botanical Name:** *Acacia dealbata*
Common Name: Silver Wattle
Origin: Indigenous
Height & Width (m): 7 x 5
DBH (cm): 19
Health: Good
Structure: Good
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 2.28
SRZ (m): 1.79
Retention Value: Low
Landscape Contribution Medium
Comments:



Tree Number: 305 **Botanical Name:** *Acacia dealbata*
Common Name: Silver Wattle
Origin: Indigenous
Height & Width (m): 11 x 8
DBH (cm): 31
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.72
SRZ (m): 2.13
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 306 **Botanical Name:** *Acacia melanoxylon*
Common Name: Blackwood
Origin: Indigenous
Height & Width (m): 9 x 5
DBH (cm): 25
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 3
SRZ (m): 2
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 307 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 9 x 3
DBH (cm): 20
Health: Fair
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.4
SRZ (m): 1.97
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 308 **Botanical Name:** *Acacia dealbata*
Common Name: Silver Wattle
Origin: Indigenous
Height & Width (m): 13 x 6
DBH (cm): 35
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.2
SRZ (m): 2.23
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 309 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 6 x 4
DBH (cm): 23
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2.76
SRZ (m): 1.91
Retention Value: Low
Landscape Contribution Medium
Comments: Overshadowed by adjacent trees



Tree Number: 310 **Botanical Name:** *Eucalyptus melliodora*
Common Name: Yellow Box
Origin: Indigenous
Height & Width (m): 7 x 4
DBH (cm): 23
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.76
SRZ (m): 1.85
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 311 **Botanical Name:** *Melaleuca armillaris*
Common Name: Giant Honey Myrtle
Origin: Native
Height & Width (m): 4 x 3
DBH (cm): 9
Health: Good
Structure: Fair
ULE: 20 to 40 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 312 **Botanical Name:** *Corymbia ficifolia*
Common Name: Flowering Gum
Origin: Native
Height & Width (m): 4 x 3
DBH (cm): 9
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 313 **Botanical Name:** *Eucalyptus melliodora*
Common Name: Yellow Box
Origin: Indigenous
Height & Width (m): 8 x 3
DBH (cm): 26
Health: Dead
Structure: Poor
ULE: 0 years
Maturity: Semi mature
TPZ (m): 3.12
SRZ (m): 2
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 314 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 25 x 12
DBH (cm): 114
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 13.68
SRZ (m): 3.68
Retention Value: Very High
Landscape Contribution: High
Comments: Nest in canopy



Tree Number: 315 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 10 x 10
DBH (cm): 43
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.16
SRZ (m): 2.63
Retention Value: Medium
Landscape Contribution: Medium
Comments: Overshadowed by adjacent trees



Tree Number: 316 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 16 x 7
DBH (cm): 64
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.68
SRZ (m): 2.92
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 317 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 8
DBH (cm): 39
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 4.68
SRZ (m): 2.37
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 318 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 13 x 12
DBH (cm): 63
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 7.56
SRZ (m): 3.01
Retention Value: Medium
Landscape Contribution Medium
Comments: Regrowth from stump



Tree Number: 319 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 17 x 14
DBH (cm): 63
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 7.56
SRZ (m): 2.93
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 320 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 17 x 8
DBH (cm): 43
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.16
SRZ (m): 2.59
Retention Value: High
Landscape Contribution Medium
Comments:



Tree Number: 321 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 13 x 11
DBH (cm): 58
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.96
SRZ (m): 2.93
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 322 **Botanical Name:** *Corymbia ficifolia*
Common Name: Flowering Gum
Origin: Native
Height & Width (m): 6 x 5
DBH (cm): 24
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 2.88
SRZ (m): 2.02
Retention Value: Medium
Landscape Contribution Low
Comments:



Tree Number: 323 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 15 x 9
DBH (cm): 54
Health: Fair
Structure: Poor
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 6.48
SRZ (m): 2.74
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 324 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 17 x 7
DBH (cm): 44
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.28
SRZ (m): 2.53
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 325 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 18 x 11
DBH (cm): 84
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 10.08
SRZ (m): 3.24
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 326 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 10 x 6
DBH (cm): 38
Health: Fair
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.56
SRZ (m): 2.32
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 327 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 19 x 7
DBH (cm): 68
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 8.16
SRZ (m): 3.03
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 328 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 8
DBH (cm): 42
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 5.04
SRZ (m): 2.51
Retention Value: Medium
Landscape Contribution Medium
Comments: Overshadowed by adjacent trees



Tree Number: 329 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 16 x 10
DBH (cm): 60
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 7.2
SRZ (m): 2.95
Retention Value: High
Landscape Contribution: High
Comments:



Tree Number: 330 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 6 x 3
DBH (cm): 6
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.5
Retention Value: Low
Landscape Contribution: Low
Comments: Group of 2



Tree Number: 331 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 8 x 4
DBH (cm): 19
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.28
SRZ (m): 1.91
Retention Value: Medium
Landscape Contribution: Medium
Comments:



Tree Number: 332 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 5
DBH (cm): 29
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3.48
SRZ (m): 2.15
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 333 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 3
DBH (cm): 31
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3.72
SRZ (m): 2.15
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 334 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 7
DBH (cm): 51
Health: Fair
Structure: Fair
ULE: 20 to 40 years
Maturity: Mature
TPZ (m): 6.12
SRZ (m): 2.76
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 335 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 12 x 5
DBH (cm): 53
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 6.36
SRZ (m): 2.76
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 336 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 7 x 2
DBH (cm): 13
Health: Good
Structure: Poor
ULE: 10 to 20 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.68
Retention Value: Low
Landscape Contribution Low
Comments:



Tree Number: 337 **Botanical Name:** *Casuarina cunninghamiana*
Common Name: River She-oak
Origin: Native
Height & Width (m): 8 x 3
DBH (cm): 29
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 3.48
SRZ (m): 2.13
Retention Value: Low
Landscape Contribution Medium
Comments: Cluster of Casuarinas



Tree Number: 338 **Botanical Name:** *Acacia dealbata*
Common Name: Silver Wattle
Origin: Indigenous
Height & Width (m): 7 x 8
DBH (cm): 37
Health: Good
Structure: Fair
ULE: 10 to 20 years
Maturity: Mature
TPZ (m): 4.44
SRZ (m): 2.3
Retention Value: Low
Landscape Contribution Low
Comments: Cluster along the waters edge



Tree Number: 339 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 8 x 4
DBH (cm): 29
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 3.48
SRZ (m): 2.2
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 340 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 6
DBH (cm): 43
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.16
SRZ (m): 2.41
Retention Value: Medium
Landscape Contribution Medium
Comments:



Tree Number: 341 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 10 x 6
DBH (cm): 46
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 5.52
SRZ (m): 2.67
Retention Value: Medium
Landscape Contribution: Medium
Comments: Basal estimated due to Multi stemmed



Tree Number: 342 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 11 x 4
DBH (cm): 20
Health: Good
Structure: Fair
ULE: 40+ years
Maturity: Mature
TPZ (m): 2.4
SRZ (m): 2.1
Retention Value: Medium
Landscape Contribution: Medium
Comments: Similar sized tree at rear



Tree Number: 343 **Botanical Name:** *Eucalyptus ovata*
Common Name: Swamp Gum
Origin: Indigenous
Height & Width (m): 6 x 4
DBH (cm): 16
Health: Good
Structure: Poor
ULE: 5 to 10 years
Maturity: Semi mature
TPZ (m): 2
SRZ (m): 1.68
Retention Value: Low
Landscape Contribution: Low
Comments: Leader failed



Tree Number: 344 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 7 x 4
DBH (cm): 20
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 2.4
SRZ (m): 1.82
Retention Value: Medium
Landscape Contribution Low
Comments:



Tree Number: 345 **Botanical Name:** *Eucalyptus camaldulensis*
Common Name: River Red Gum
Origin: Indigenous
Height & Width (m): 15 x 10
DBH (cm): 85
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Mature
TPZ (m): 10.2
SRZ (m): 3.28
Retention Value: High
Landscape Contribution High
Comments:



Tree Number: 346 **Botanical Name:** *Eucalyptus cinerea*
Common Name: Mealy Stringybark
Origin: Native
Height & Width (m): 3 x 1
DBH (cm): 26
Health: Good
Structure: Good
ULE: 40+ years
Maturity: Semi mature
TPZ (m): 3.12
SRZ (m): 2.08
Retention Value: Low
Landscape Contribution Low
Comments:



appendix 9 – concept plans

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CITY OF KINGSTON

37 SPRINGS ROAD

#Site Address2

CLAYTON SOUTH

3169

NAMATJIRA PARK MASTERPLAN

Wednesday, 7 April 2021

PRELIMINARY CONCEPT - PC04

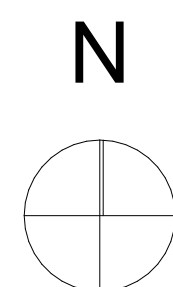


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|---|---|---|--|---|--|----------------------------------|
| LEGEND: <div><div><div> DISABLED PARKING</div><div> TACTILE PAVERS</div><div> TEMPORARY BENCH MARK</div><div> HOUSE DRAIN</div><div> ELECTRICAL LIGHT POLE</div></div><div><div> EXISTING TREE</div><div> TITLE LINE</div><div> TELSTRA PIT</div><div> BOLLARD</div><div> ELECTRICAL POLE</div></div><div><div> INVERT LEVEL</div><div> JUNCTION PIT</div><div> GRATED PIT</div><div> SIDE ENTRY PIT</div><div> PHOTOS</div></div></div> | DO NOT SCALE DRAWING <p>PLEASE NOTE:</p> <p>-GROUPS OF TREES HAVE ONLY BEEN SURVEYED TO THE PERIMETER OF THE VEGETATION. THE TREES SURROUNDING THE LAKE HAVE NOT BEEN SURVEYED AND ONLY A VEGETATION LINE HAS BEEN SHOWN.</p> <p>-THIS IS TO ONLY BE USED FOR MASTER PLANNING PURPOSES.</p> <p>-THIS PLAN IN NO WAY ATTEMPTS TO RE-ESTABLISH TITLE BOUNDARIES. THE PROPERTY LINES SHOWN HAVE BEEN DERIVED FROM THE DIGITAL MAP BASE AND ARE APPROXIMATE ONLY.</p> | SURVEYED BY: <div> MOONLAND GROUP</div> <p>ABN 97 994 395 782 info@moonland.com.au</p> <p>Level 1, 1 Carters Avenue Toorak, VIC, 3142</p> <p>T 9824 0354 M 0401 005 921</p> | NOTES: <ul style="list-style-type: none">• ACCURACY OF FEATURES $\pm 0.05m$ AND ACCURACY OF REDUCED LEVELS $\pm 0.02m$.• TRAVERSE BEARINGS AND DISTANCES SHOWN HEREON HAVE BEEN DERIVED FROM EDM MEASUREMENT.• ALL LENGTHS ARE IN METRES.• ONLY VISIBLE SERVICES HAVE BEEN SHOWN. ANY UNDERGROUND SERVICES WILL REQUIRE A DIAL BEFORE YOU DIG SEARCH.• ALL WINDOWS ON ADJACENT PROPERTIES MUST BE VERIFIED ONSITE BY ANYONE RELYING ON THIS PLAN.• TREE SPREAD SHOWN ON THIS PLAN IS INDICATIVE ONLY.• LOCATION OF ABUTTING BUILDING AND ENVIRONMENT IS INDICATIVE ONLY UNLESS OTHERWISE SHOWN. | SURVEY BY: PR & KD SURVEY OF FEATURES EXISTING ON: 30/11/2020 DRAWN BY: PR & KD DATE DRAWN: 04/12/2020 LEVELS SHOWN THUS $\pm 2_{63}$ ARE TO AHD VIDE MORDIALLOC PM 176 WITH A STATED VALUE OF 57.595 | Client: THE COMMUNITY COLLABORATIVE Project: NAMATJIRA PARK, CLAYTON Title: KEY SHEET Original Size: A1 File name: M2276 - A1.dwg | Sheet: 1 Rev: A |
|---|---|---|--|---|--|----------------------------------|

EXISTING SITE PLAN



EXISTING MASTERPLAN
Scale 1:1250 @ A1 :: 1:2500 @ A3



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PRELIMINARY CONCEPT - PC04

37 SPRINGS ROAD
#Site Address2
CLAYTON SOUTH

FOR CITY OF KINGSTON
PROJECT NO A20109
Wednesday, 7 April 2021

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MP_0.1

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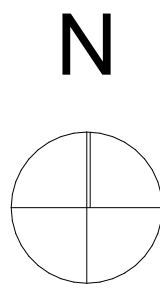
PROPOSED MASTERPLAN



PROPOSED MASTERPLAN
Scale 1:1250 @ A1 :: 1:2500 @ A3



MASTERPLAN DETAIL - Soccer
Scale 1:500 @ A1 :: 1:1000 @ A3



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MASTERPLAN DETAIL - Soccer

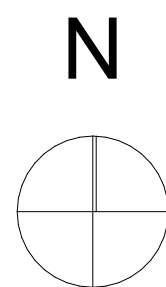
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MATERSPLAN DETAIL - Gridiron
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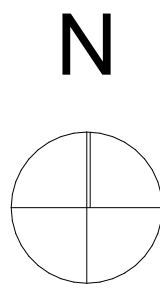
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MP_1.1



MATERSPLAN DETAIL - Cricket
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MATERSPLAN DETAIL - Cricket

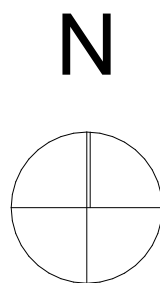
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MP_1.2



MASTERPLAN DETAIL - Mixed
Scale 1:500 @ A1 :: 1:1000 @ A3



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MP_2.0

appendix 10 – ecological assessment

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Namatjira Park: ecological assessment

29 April 2021

Ecology

Vegetation affected by the current option consists of scattered planted Australian native trees and one possibly self-sown tree over introduced grass lawn in a woodland vegetation structure.

Twelve trees require removal under the current option, as follows.

Table 1. Trees

| Tree | Species | Common name | Native to Victoria | Origin |
|------|---------------------------------|-------------------|--------------------|---------|
| 1 | <i>Corymbia ficifolia</i> | Flowering Gum | | Planted |
| 9 | <i>Eucalyptus sideroxylon</i> | Mugga | Yes | Planted |
| 10 | <i>Corymbia ficifolia</i> | Flowering Gum | | Planted |
| 11 | <i>Eucalyptus sideroxylon</i> | Mugga | Yes | Planted |
| 12 | <i>Eucalyptus sideroxylon</i> | Mugga | Yes | Planted |
| 24 | <i>Eucalyptus scoparia</i> | Willow Gum | | Planted |
| 25 | <i>Casuarina cunninghamiana</i> | River Oak | | Planted |
| 45 | <i>Eucalyptus camaldulensis</i> | River Red-gum | Yes | Unknown |
| 46 | <i>Eucalyptus globulus</i> | Southern Blue-gum | Yes | Planted |
| 47 | <i>Casuarina cunninghamiana</i> | River Oak | | Planted |
| 48 | <i>Corymbia maculata</i> | Spotted Gum | Yes | Planted |
| 49 | <i>Corymbia maculata</i> | Spotted Gum | Yes | Planted |

These trees provide food resources to a range of native vertebrate and invertebrate fauna, particularly birds and insects. They represent a small proportion (3%) of the 346 trees in Namatjira Park (Homewood Consulting 2020) so any impact of their removal on these fauna would be minor.

Trees native to Victoria require a planning permit requirement under Clause 52.17 of the Kingston planning scheme unless exempt under the Planted vegetation exemption. All trees except tree 45, a River Red-gum, are clearly planted and are thus exempt from permit requirement.

The River Red-gum (Photo 1) is also likely planted but the possibility of it being natural or self-sown from adjacent plantings cannot be excluded without a detailed planting plan for the park or other clear evidence showing it to be planted. The species is correct for the geology (GSV 1981) and pre-1750 ecological vegetation class (EVC) which is Plains Grassy Woodland (DELWP 2021).

River Red-gum is considered 'secure' within the City of Kingston (City of Kingston 2018).

A permit under Clause 52.17 may be required for removal of the River Red-gum. With a diameter at breast height (DBH) of 51 cm it is a 'small tree'. A native vegetation removal (NVR) report and an offset are required under the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017).

Biosis understands Council is investigating alternative design options that do not require the removal of tree 45 and as such a native vegetation removal (NVR) report and an offset may not be required.



Photo 1. River Red-gum on left, planted Southern Blue-gum on right.

Lighting

The project includes the installation and operation of new lighting to illuminate playing surfaces of the sports area. In view of the proximity of wildlife habitats, particularly wetlands within Namatjira Park south of the sports area, the following advice is provided with the aim of minimising potential detrimental effects of artificial lighting on fauna. As the site is within an urban area in which there is considerable existing artificial light, it is not expected that the proposed lighting will significantly affect fauna beyond the general environs of Namatjira Park.

Artificial lighting may have effects on a diverse range of vertebrate and invertebrate fauna. *National Light Pollution Guidelines for Wildlife* have recently been published by the Commonwealth of Australia (2020). They outline potential impacts and provide guidance for minimising deleterious effects.

Birds, including migratory species, may be affected in various ways and it is important to avoid deleterious impacts to the extent possible. Some of the more problematic documented effects of inappropriate lighting on birds include disorientation of migrating birds towards the glow of artificial light on the horizon and 'trapping' of birds within a light-pool, which may occur due to the inability of photoreceptors in birds' eyes to permit them to see into the darkness outside the light-pool. Simple disturbance due to artificially high light levels may also affect natural behaviours in wetland areas. The site may be overflowed by some migratory species but the introduction of the new lights is unlikely to significantly add to the quantum of artificial lighting over which these birds would already be flying. It is more likely that birds that are residents of the local area may be affected. If flying insects are attracted to the lights, microbats may in turn be attracted to forage around the lights and this may expose them to heightened predation.

The lighting proposed for the sports facility will be on four masts each 30 metres in height. The proposed lighting system performance meets the minimum lighting criteria of AS2560.2.3 Lighting for Football – 200 Lux and the design is compliant with AS4282:2019 Obtrusive Light. Lighting design drawings indicate that the lights will be oriented across the playing surfaces from each of four corners. Thus the lights on the two northern corners of the sports field will shine, at least partially, towards the wetlands. In addition to wetland species, birds and bats that inhabit the terrestrial and vegetated local environs may also be affected, however, none of the fauna involved are likely to include any listed threatened species.

An existing treed area between the sports field and the wetlands, along with residential properties can be expected to partially impede light from reaching the wetlands.

The primary mechanisms we recommend to minimise negative effects on fauna is to ensure the lights are turned on only for periods required for use of the facility and that on any given night the majority of the hours of darkness are not illuminated. The lights must be shielded to prevent light-spill upwards into the sky and behind the lights, and to the extent practicable, to ensure they are directed downwards onto the playing surfaces only.

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appendix 11 – engineer assessment

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Namatjira Park Masterplan

FEASIBILITY STUDY – FIELD OF PLAY

Issue 001 | Revision D | 04/05/2021 | Ref: 10773-.00

Author: Faris Saman

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1. Introduction

This report is a feasibility study for the Namatjira Park Master Plan project located at 37 Springs Rd, Clayton South VIC 3169.

This report will aid in identifying constraints that might deem this development unfit for the proposed facilities and help aid in the purpose of construction. It will highlight key findings to help further understand how the site can be redeveloped and what measures need to be taken.



Figure 1 - Aerial view of Namatjira Park

2. Site Overview

The site overview was established by information present by:

- Site investigation
- Council supplied information
- Dial Before You Dig.

An overview of finding present on site has been determined and illustrated in Figure 2 below. Furthermore, site photos of the findings are listed below to help provide a clearer view of the present features.

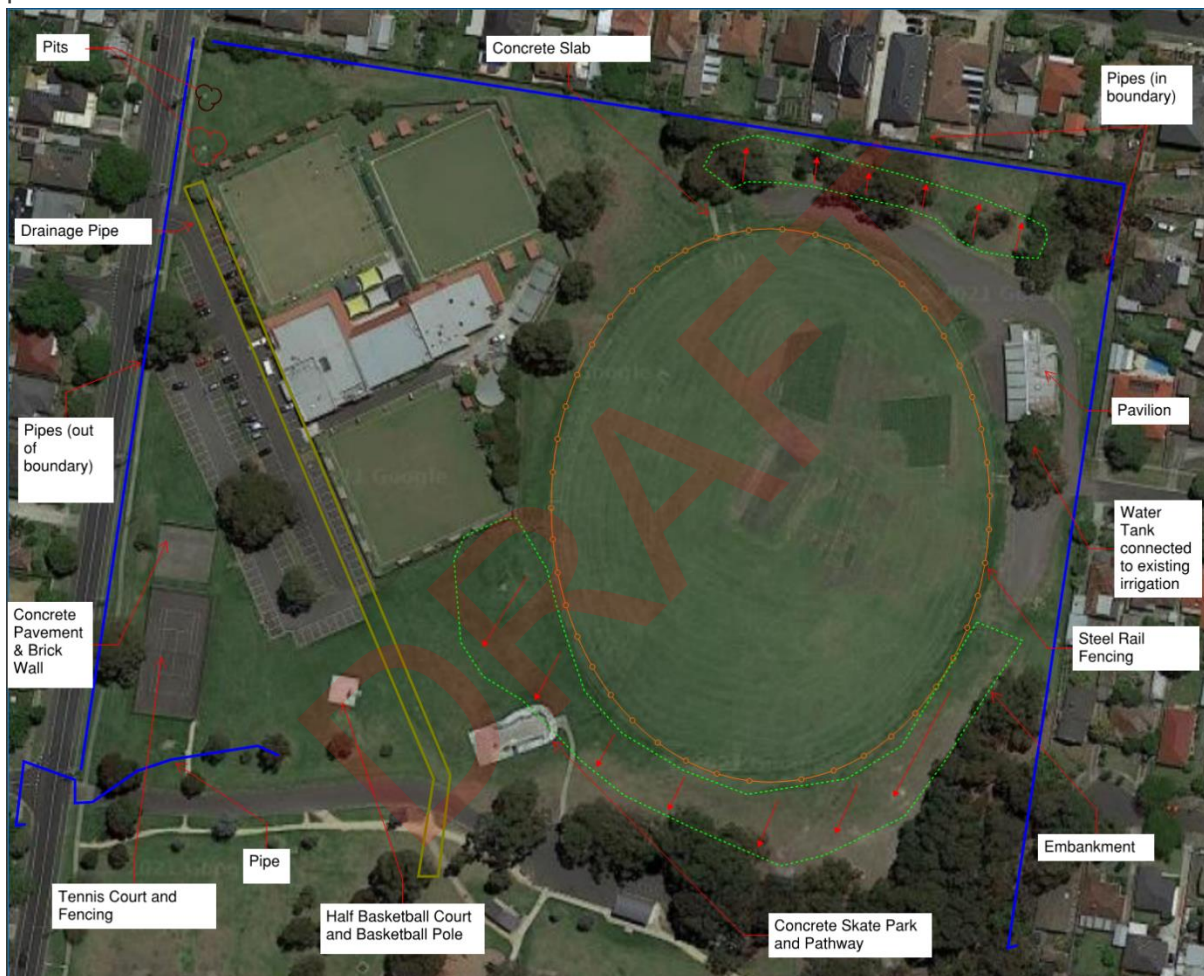


Figure 2 - Overview of site findings

The key features of the site are:

- The terrain of the site is mostly natural grass.
- Concrete pathway from the skate park and tennis court.
- Concrete half Basketball Court (66m²) (**refer to Figure 12**).

- Water pipes and Pits around the border of the proposed site. Underground water pipe south of the existing tennis court. Pit on the Newport entry alongside timber posts and steel railing (**refer to Figure 4**).
- Pit on the nor of Bowls field 1 (**refer to figure 11**).
- Drainage pipe from south to north-west of the proposed site. (Underground between the parking lot and the building)
- Sports Equipment on the Oval (AFL goal posts, Soccer goalposts, and Rugby goal posts)
- Lighting poles and footings (**refer to Figure 3**).
- Timber posts and steel railing across the edge strip of the existing parking lot (**refer to Figure 4**).
- Concrete Skate Park (**refer to Figure 5**).
- Concrete Tennis Court (661m²), Fencing and gate around the tennis court (**refer to Figure 6**).
- Steel Railing/fencing around the Natural Oval Field (**refer to Figure 7**).
- Old Cricket net slabs north of the oval (**refer to Figure 8**).
- Pavilion and water tank (343.43m²) (**refer to Figure 9**).
- Concrete pavement with a brick wall (**refer to Figure 10**).

Council advice indicates that:

- The Dial Before You Dig information is not accurate and doesn't account for a stormwater transfer pipe which runs from the retarding basin at Namatjira Reserve, through the garden beds adjacent the toilet block, past the sports ground fence line and through the carpark connecting to the water storage tanks
- During recent irrigation works unknown redundant and active in-ground services were encountered



Figure 3: Lighting Poles around the oval field



Figure 4: Timber Posts and Steel Railing surrounding the Parking lot. Pits located at Newport Rd. Entry



Figure 5: Concrete Skate Park and pathway



Figure 6: Tennis Court, fencing and single gate, grated drain and water fountain.



Figure 7: Railing / Fencing surrounding the Oval Field



Figure 8: Old Cricket Net Slabs north-west of the pavilion.



Figure 9: Pavilion and Water Tank



Figure 10: Concrete pavement and brick wall



Figure 11: Sewer Pit



Figure 12: Concrete Basketball Court

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3. Redevelopment Options

3.1 Proposed Master Plan

- The proposed master plan consists of:
- Winged natural turf oval (including 3 x natural turf wicket)
- Cricket practice nets
- Covered lawn bowls green
- New tennis / multi-use courts
- New skate park
- New pavilion
- Extended carpark



Figure 13 – Extract from the 106 Architects Master Plan (MP_1.0)

3.2 Geometry and Dimensions Assessment

Soccer Fields

The following comments are relating to the soccer field geometry and dimensions:

- The proposed soccer fields do not comply with Football Victoria (FV) minimum requirements (100m x 64m) however they do comply with the FV rules of competition

minimum requirements (96m x 60m) and with FIFA Laws of the Game minimum standards which allow 90m x 60m soccer fields

- The turf wickets could be used for the soccer pitch run-offs if additional space is required (depends on Council's view)
- Behind goal netting for the soccer pitches would clash with the footprint of the gridiron fields. Strategically locating grass mounds outside the footprint of the gridiron fields would aid with soccer balls rolling away

Cricket Field

The following comments are relating to the cricket oval geometry and dimensions:

- The proposed cricket field dimensions comply with minimum community cricket facility guidelines.
- Ensure minimum 3m, ideally 4m, runoffs are included
- Utilising the cricket wickets as run-off for soccer will impact the ability to curate the wickets for the cricket season post-soccer season. This may delay the use of these wickets

Cricket Nets

The following comments are relating to the cricket nets geometry and dimensions:

- Based on the information provided, the nets appear to comply with Cricket Australia standards
- Consider tweaking the orientation of the nets towards the east to avoid the chance of cricket balls being hit into the lawn bowl facility

Grid Iron

The following comments are relating to the grid iron field geometry and dimensions:

- The proposed Iron Grid fields comply with the minimum standards set by the International Federation of American Football.

Hard Courts

The following comments are relating to the hard courts geometry and dimensions:

- Based on the information provided, the courts appear to comply with Cricket Australia standards
- The eastern tennis court location directly adjacent to the carpark may result in balls landing hitting cars
- The proposed 3-on-3 courts are orientated east-west. Recommend rotating to be north-south in alignment with the tennis court and splitting with the goal posts hard against the tennis back fence

3.3 Alternative Design Considerations

Larger Senior Pitch

To develop a larger senior pitch (100m x 64m plus run-offs), the cricket wickets could be shifted off-centre and the second field would need to be used for junior games/training only.

Indented Players Benches

To reduce the need for 5m offset along the whole side of a pitch where the players benches are to be located, indent the location of the players benches so that the 5m is realised locally where the benches are however only 3m for the rest of the sideline (refer to example below).

By indenting the players benches the overall width of both the pitches can be increased by 2m.



Figure 14 - Example of indented players benches

Multi-Use Cricket Nets

Instead of the standard cricket net layout (i.e. fixed lanes with chain link fences) soft retractable netting could be utilised to provide a greater level of flexibility for the facilities.

4. Engineering Assessment

4.1 Existing In-Ground Infrastructure

The following existing in-ground infrastructure will need to be removed:

- Oval irrigation network
- Oval sports lighting

The irrigation system was upgraded 3-years ago. However due to the likely re-grading and increased footprint of the sports ground the pipework will become redundant. The sprinklers could be retrieved and re-used for any redevelopment works.

There is limited drainage beyond that along the northern and eastern property fence lines. During detailed design phase pipe capacity and levels of the existing drainage would need to be confirmed.

The existing irrigation is supplied by harvested storm water. There is potable water back-up supply but Council advise that the harvesting system, to date, has sufficiently supplied irrigation for the current oval (it is recommended that the potable water back-up supply be retained).

The proposed carpark extension will be over an easement; however the existing carpark is already of the same easement so this should not be an issue.

Council have indicated that the existing electrical supply to the site is at capacity. An assessment of the electrical supply to the whole facility will need to be completed to confirm available supply.

Based on available information no authority assets are likely to be impact by the proposed works.

4.2 Terrain

The existing oval surface shape appears suitable for the intended overlay. The current oval consists of an off-centred domed shape playing surface with the height point located north-east off-set from the centre point of the oval. From this high point the surface grades radially away with the following maximum and minimum slopes:

- North-east (shortest distance) = 1 in 100 (approx.)
- South-west (longest distance) = 1 in 150 (approx.)

A centralised high point with a constant radial gradient should easy be achieved via balance cut-to-fill (assuming appropriate subgrade material). This would likely result in the levels along the eastern boundary line being similar to existing levels, except where the footprint extends across the existing batters. In these locations the design grades would extent and new levels set.

There is a grassed embankment to the south of the existing oval as well as a grass swale to the west of the oval. Works may require parts of these elements to be filled to allow the works to commence.

4.3 Profile

Assuming favourable subgrade conditions (i.e. non-reactive, free of rocks and not a landfill) there are two profiles that could be considered for the development of the turf playing surface:

- Sand carpet
- Rootzone sand

Note the limitations of each of these profiles below relating to weekly hours of use.

Sand Carpet Profile

A sand carpet profile consist of a minimum 100mm thick rootzone sand layer overlying a series of sand slits and subsoil drains.

OVERVIEW

Thin sand layer over existing soil profile with sand slits & subsoil drains.

+ ADVANTAGES

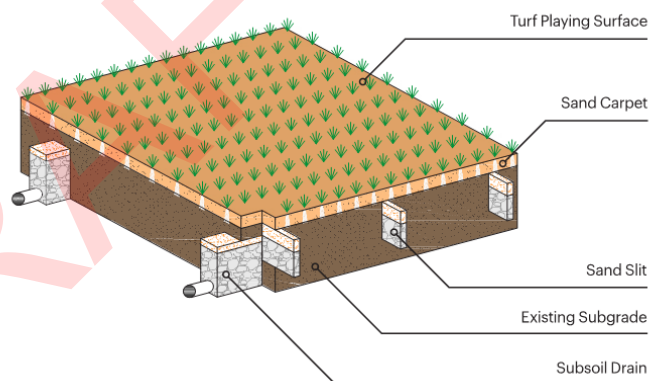
Improved performance than sandy loam.
Similar advantages as full depth rootzone sand profile but less expensive.

- DISADVANTAGES

Construction duration.
Not as effective as full depth sand profile.
Specialist construction equipment required.

HOURS OF USE*

15 - 20 hours / week.



Rootzone Sand Profile

A rootzone sand profile consists of a minimum 250mm rootzone sand layer overlying a subsoil drainage network.

OVERVIEW

Constructed from natural sand deposits (ie. dune/river sand) or processed sand.

+ ADVANTAGES

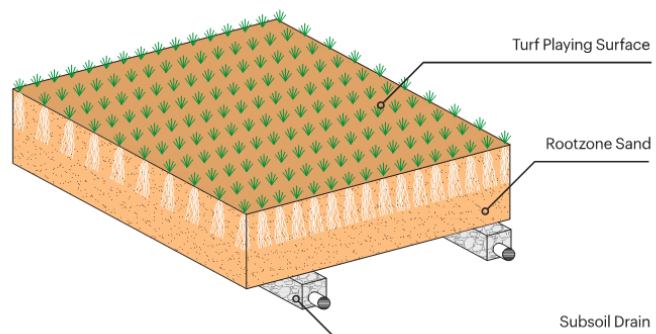
High infiltration rates.
Not susceptible to compaction.

- DISADVANTAGES

Requires amendments to improve moisture retention.
Stability can be an issue with some natural sands.

HOURS OF USE*

20 - 30 hours / week.



4.4 Earthworks

It is assumed that the oval and areas which consist of turf landscaped areas will need to be stripped a minimum of 150mm. This stripped organic layer would likely need to be disposed off-site.

Assuming preferred subgrade conditions, the bulk earthworks for the oval should be able to be a balanced cut-to-fill exercise (i.e. no excess materials removed from site) while additional cut generated from the other elements of the masterplan could be lost on site in the surrounding embankments.

A detailed geotechnical investigation needs to be completed to confirm the above assumptions.

4.5 Retaining Walls

There is a pinch point in the south-east corner of the site that may require a small height retaining wall. If a footpath is required along the south-east corner of the site, there will likely be the need for a localised 900mm high retaining wall. Indicative extent of retaining walls shown below in sketch (note blue hatched area is greater than 1in3 so planted landscape treatment would be required).

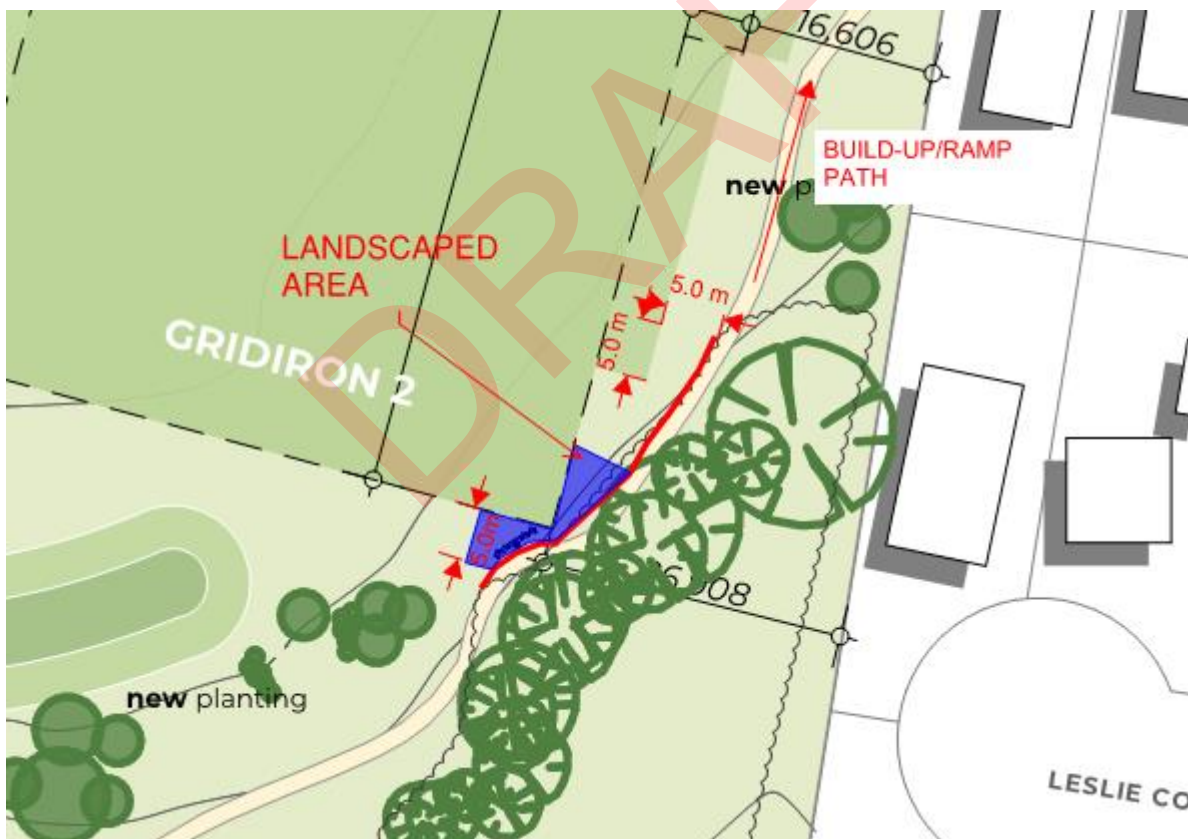


Figure 3 – Indicative extent of retaining wall in south-east corner

If the footpath is not required, the battered slope would be too steep to maintain natural turf (greater than 1in5) and could be landscaped with suitable plants.

4.6 Stormwater Management

Pit and Pipe Network

It is likely Council will require the stormwater discharge from the site to not exceed the pre-development flows. The proposed master plan does not significantly increase the extent of impervious areas. The larger pavilion, extended carpark and additional hard courts will increase the stormwater run-off, however through typical stormwater detention infrastructure the flow can readily be retarded to meet this requirement.

Overland Flow

The overland flow path for the proposed master plan will not vary much than the existing conditions. The natural terrain for the site will direct the overland flow to the south of the site.

4.7 Existing Trees

The trees to the east and west of the proposed winged oval will need to be removed to enable the field to be constructed.

4.8 Construction Access

Construction works for the site would likely require to construction access points:

- Newport Road: delivery access for materials for the construction of the oval
- Spring Road: delivery access for materials for the rest of the site construction activities

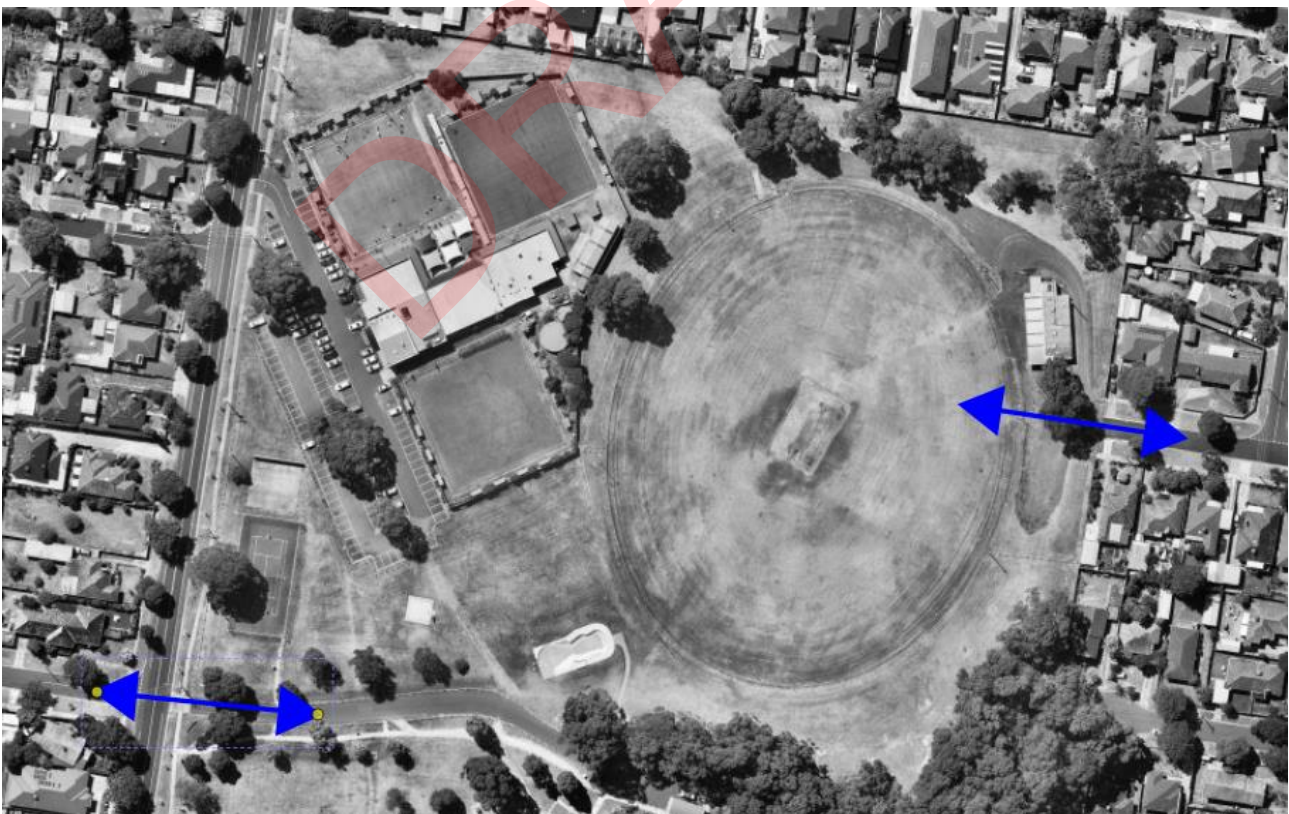


Figure 4 - Assumed construction access points

5. Further Investigations

The following further investigations are recommended to be undertaken to confirm the suitability of the proposed works:

- Geotechnical investigation
- Contamination testing
- Stormwater drainage capacity and invert level
- Capacity of the electrical supply to the site
- In-ground services tracing / non-destructive excavation
- Pressure and flow of the irrigation water supply
- Arborist report on the removal of trees

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6. Summary

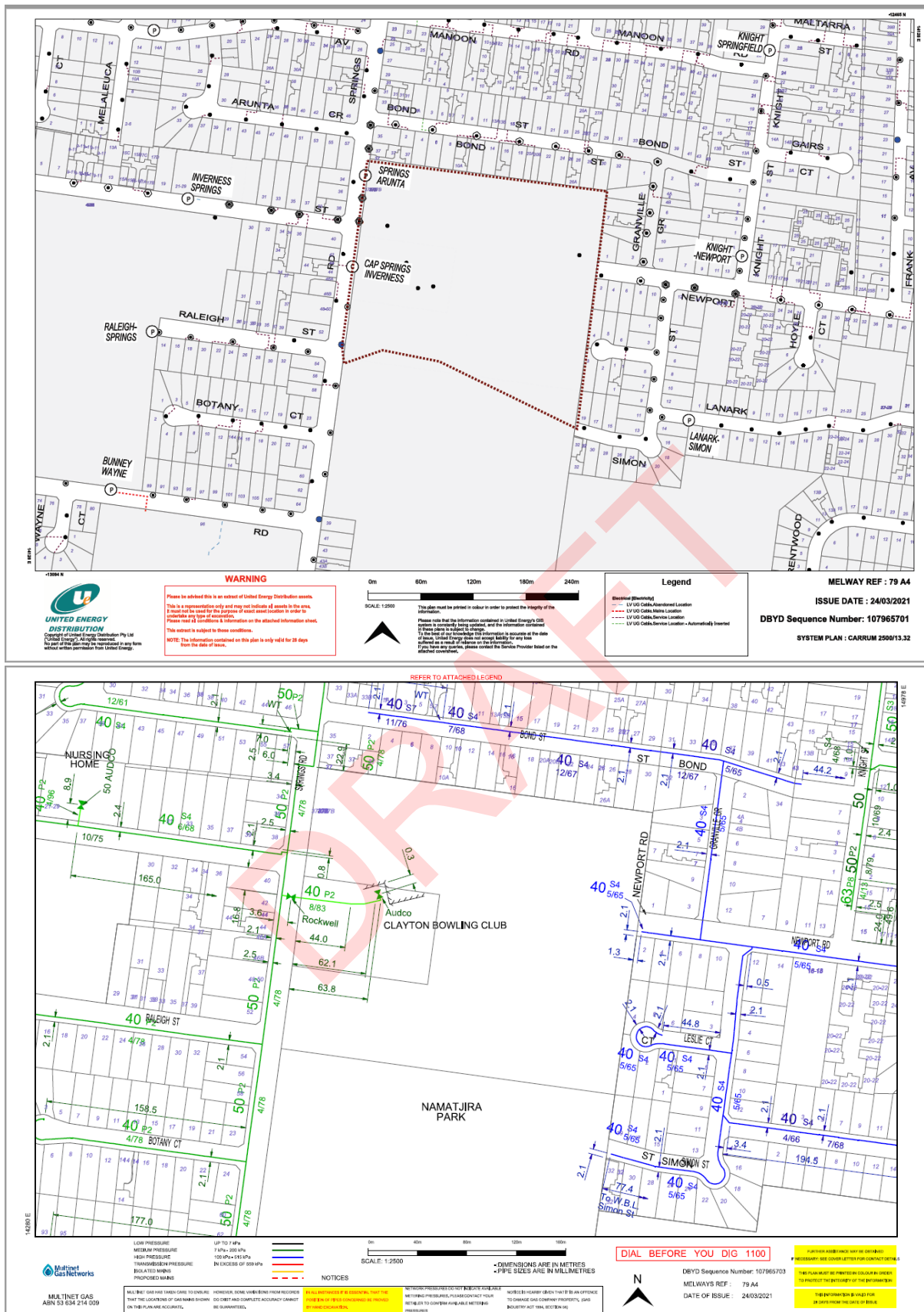
The proposed master plan appears to be suitable for the site. It is recommended that further planning be undertaken to determine if a larger football pitch can be obtained to better meet FV requirements.

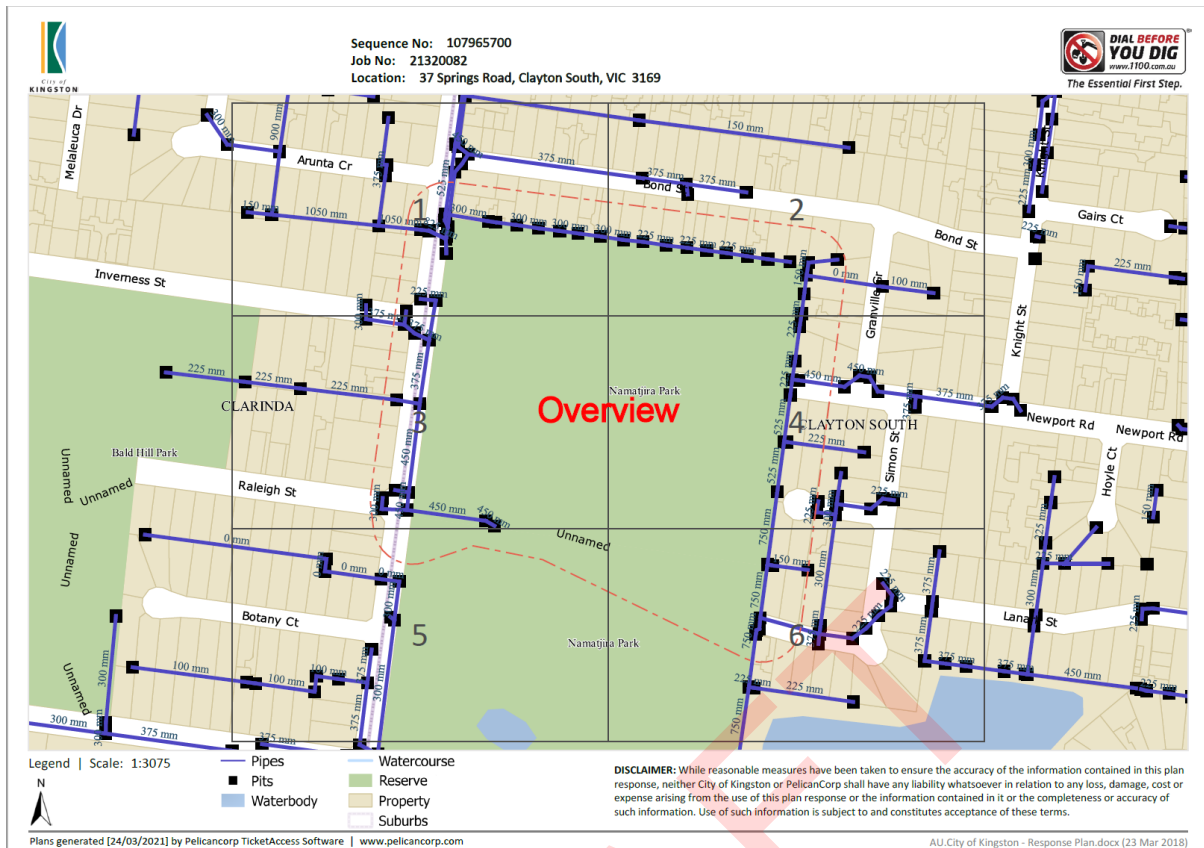
As noted in the previous section, there are several further investigation projects that need to be completed to confirm whether there are any risks associated with developing the masterplan.

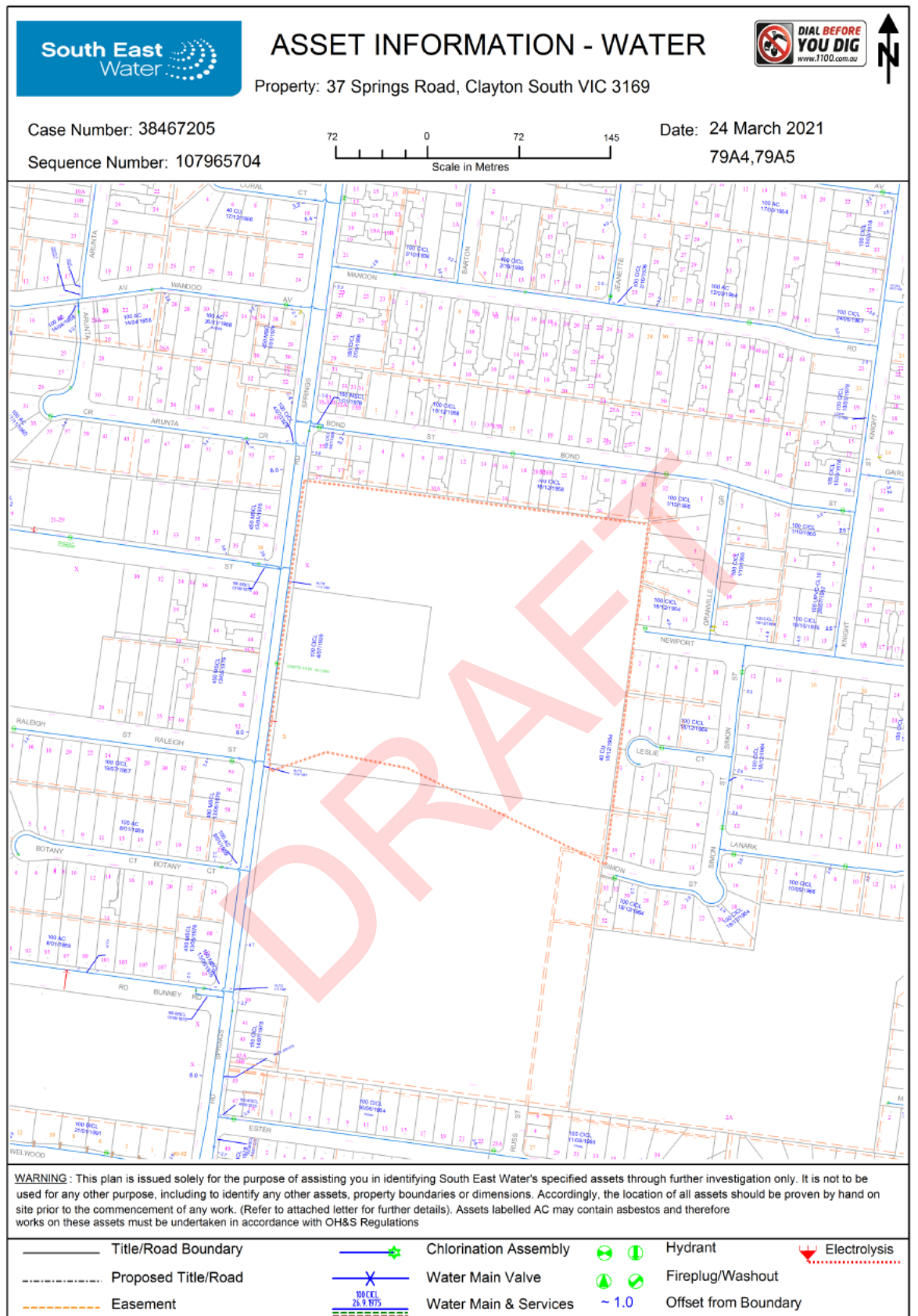
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Appendix A - Dial Before You Dig

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appendix 12 – lighting design.

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| Luminaire Schedule | | | | | | |
|---|-----|-------------------------------|-------------|-------------------|-------|--------------------------------------|
| Symbol | Qty | Label | Arrangement | Total Lamp Lumens | LLF | Description |
|  | 48 | Legacy 1500W LED Medium Flood | SINGLE | N.A. | 0.870 | Legacy 1500W LED Medium Flood – 3030 |

| Calculation Summary | | | | | | | |
|---------------------------|-------------|-------|--------|-----|-----|---------|---------|
| Project: Calculation Area | | | | | | | |
| Label | CalcType | Units | Avg | Max | Min | Min/Avg | Min/Max |
| CalcPts_Cricket Outfield | Illuminance | Lux | 215.25 | 310 | 152 | 0.71 | 0.49 |
| CalcPts_Gridiron Pitch 1 | Illuminance | Lux | 240.23 | 328 | 168 | 0.70 | 0.51 |
| CalcPts_Gridiron Pitch 2 | Illuminance | Lux | 228.78 | 324 | 161 | 0.70 | 0.50 |
| CalcPts_Soccer Pitch 1 | Illuminance | Lux | 234.21 | 326 | 178 | 0.76 | 0.55 |
| CalcPts_Soccer Pitch 2 | Illuminance | Lux | 218.66 | 319 | 169 | 0.77 | 0.53 |

| Calculation Summary | | | |
|---------------------|--------------|-----|-----|
| Project: Glare | | | |
| Label | CalcType | Max | Min |
| GR_1 | Illuminance | 327 | 67 |
| GR_1 | Glare Rating | 45 | 10 |
| GR_1 | Glare Rating | 48 | 10 |
| GR_1 | Glare Rating | 47 | 22 |
| GR_1 | Glare Rating | 49 | 10 |
| GR_1 | Glare Rating | 45 | 10 |
| GR_1 | Glare Rating | 26 | 10 |
| GR_1 | Glare Rating | 39 | 10 |
| GR_1 | Glare Rating | 41 | 10 |
| GR_1 | Glare Rating | 35 | 10 |
| GR_1 | Glare Rating | 30 | 10 |
| GR_1 | Glare Rating | 28 | 10 |
| GR_1 | Glare Rating | 38 | 10 |
| GR_1 | Glare Rating | 43 | 10 |
| GR_1 | Glare Rating | 33 | 10 |
| GR_1 | Glare Rating | 27 | 10 |



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Producing a vivid white-light that renders colours as they are meant to be seen, this fitting has helped redefine high-output illumination as we know it, allowing you to Define the Moment.

Obtrusive Light - Compliance Report

AS/NZS 4282:2019, A3 - Medium District Brightness, Non-Curfew L1
 Filename: NAMATJIRA PARK ol
 14/04/2021 4:19:31 PM

Illuminance
 Maximum Allowable Value: 10 Lux

| Calculations Tested (3): | | Test Results | Max. Illum. |
|--|--|--------------|-------------|
| Calculation Label | | | |
| ObtrusiveLight_Res Boundary_III_Seg1 | | PASS | 2 |
| ObtrusiveLight_Res Boundary_III_Seg2 | | PASS | 5 |
| ObtrusiveLight_Res Boundary_III_Seg3 | | PASS | 7 |
| ObtrusiveLight_Res Boundary_III_Club House | | PASS | 10 |

Luminous Intensity (Cd) At Vertical Planes
 Maximum Allowable Value: 12500 Cd

| Calculations Tested (3): | | Test Results |
|---|--|--------------|
| Calculation Label | | |
| ObtrusiveLight_Res Boundary_Cd_Seg1 | | PASS |
| ObtrusiveLight_Res Boundary_Cd_Seg2 | | PASS |
| ObtrusiveLight_Res Boundary_Cd_Seg3 | | PASS |
| ObtrusiveLight_Res Boundary_Cd_Club House | | PASS |

Upward Waste Light Ratio (UWLR)
 Maximum Allowable Value: 2.0 %

Calculated UWLR: 0.0 %
 Test Results: PASS

Lighting system performance meets the minimum lighting criteria of AS2560.2.3 Lighting for Football - 200 Lux

Design is compliant with AS4282:2019 Obtrusive Light
 Obtrusive Light calculated at 1.0MF

Uses 30 metre poles.
 Lights mounted at 30 metres.



PROJECT:

NAMATJIRE PARK



Date: 14/04/2021 Page 1 of 4

Legacy Lighting Pty Ltd
 3 Westbrook Road, Swan Hill VIC 3585
 ABN: 53 622 912 252

P: 1300 800 345
 E: salesapac@legacysportlighting.com



Lighting system performance meets the minimum lighting criteria of AS2560.2.3 Lighting for Football - 200 Lux

Design is compliant with AS4282:2019 Obtrusive Light
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Uses 30 metre poles.
Lights mounted at 30 metres.



PROJECT:

NAMATJIRE PARK

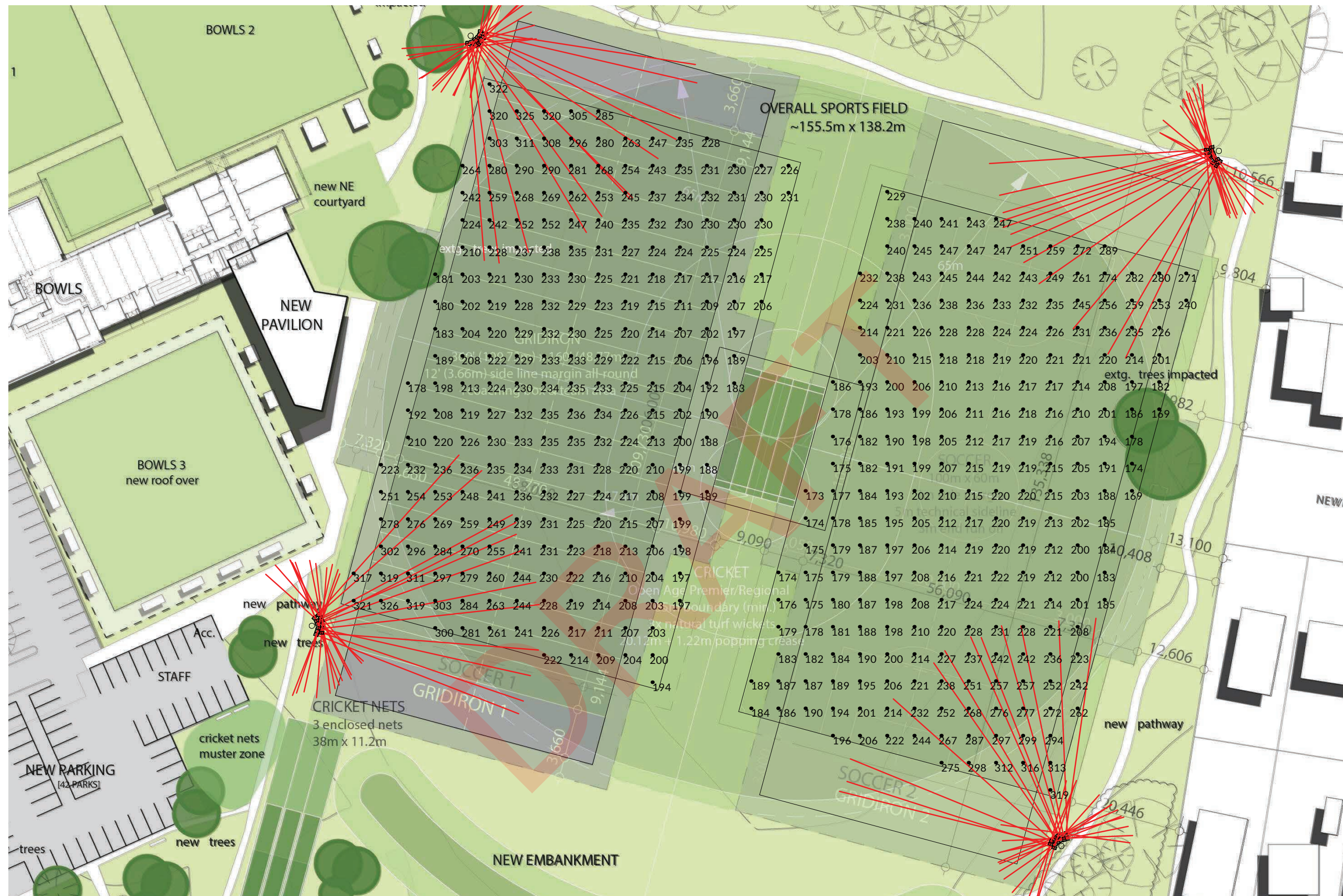


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Page 2 of 4

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PROJECT:

NAMATJIRE PARK



Date: 14/04/2021

Page 4 of 4










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P: 1300 800 345
E: salesapac@legacysportlighting.com



NAMATJIRA PARK



-  WETLAND LOOKOUT
-  TOILETS
-  SKATE BOWL
-  PLAYGROUND
-  FITNESS EQUIPMENT
-  PICNIC AREA / BBQ
-  PARKING
-  PEDESTRIAN BRIDGE
-  CLAYTON BOWLS CLUB

