



ATTACHMENTS TO REPORTS

ORDINARY COUNCIL MEETING

Wednesday 12 August 2020

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Attachments to Reports

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ATTACHMENTS TO REPORT

Item 9.1

Development Application 19/1042 - Multi Dwelling Housing containing 7 units - 25 Oxley Drive, Bowral

Attachment 2

Site Location

Attachment 3

Zoning

Attachment 4

Site Plan

Attachment 5

Elevation plans as presented to Council meeting 26 February 2020 (now superseded)

Attachment 6

Overshadowing plans as presented to Council meeting 26 February 2020 (now superseded)

Attachment 7

Objector's consultant's shadow diagrams based on superseded plans

Attachment 8

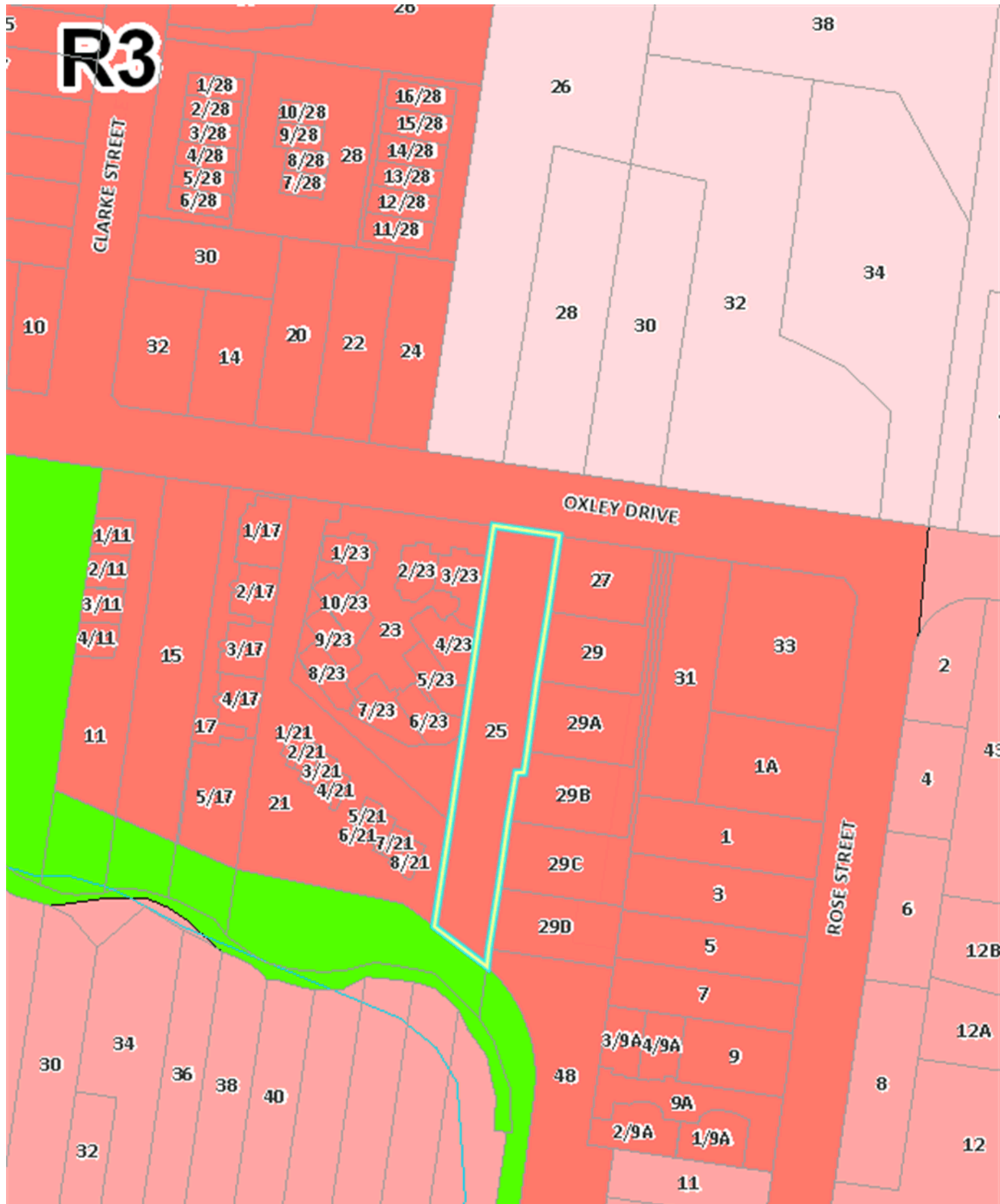
Objector's consultant's plans showing view of development from 29 B Oxley Drive based on superseded plans

ATTACHMENT 2 – SITE LOCATION



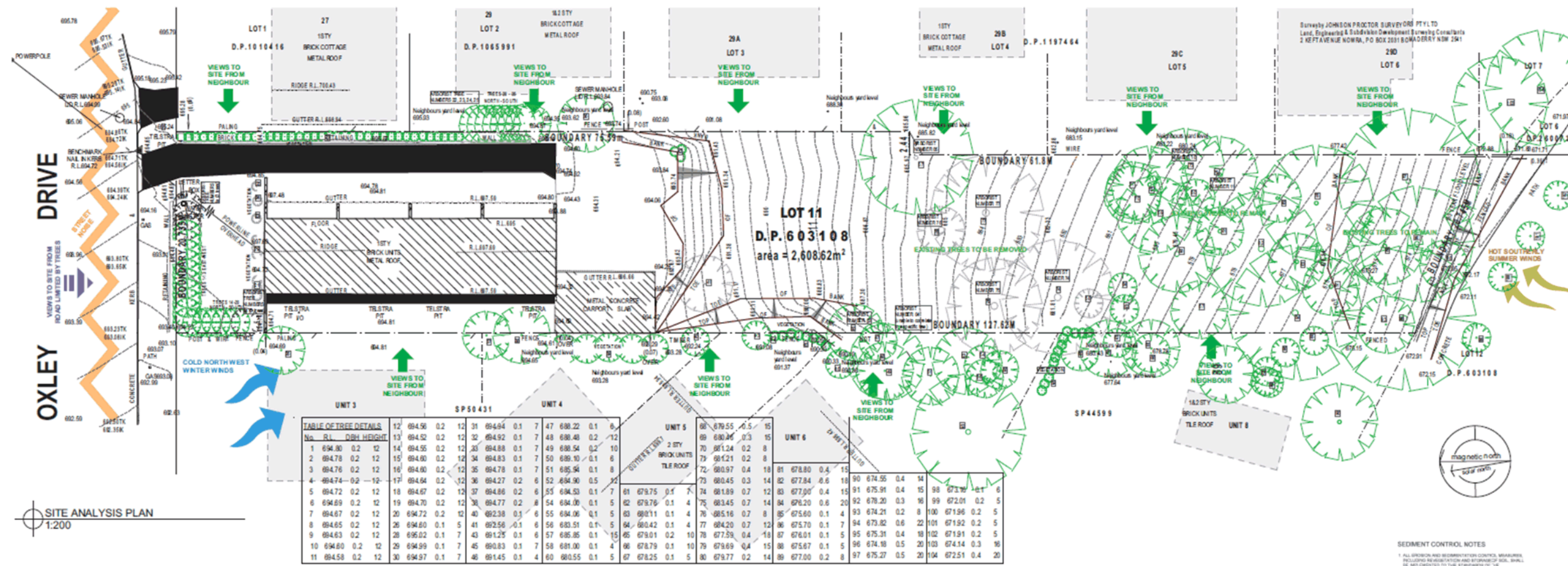


ATTACHMENT 3 – ZONING

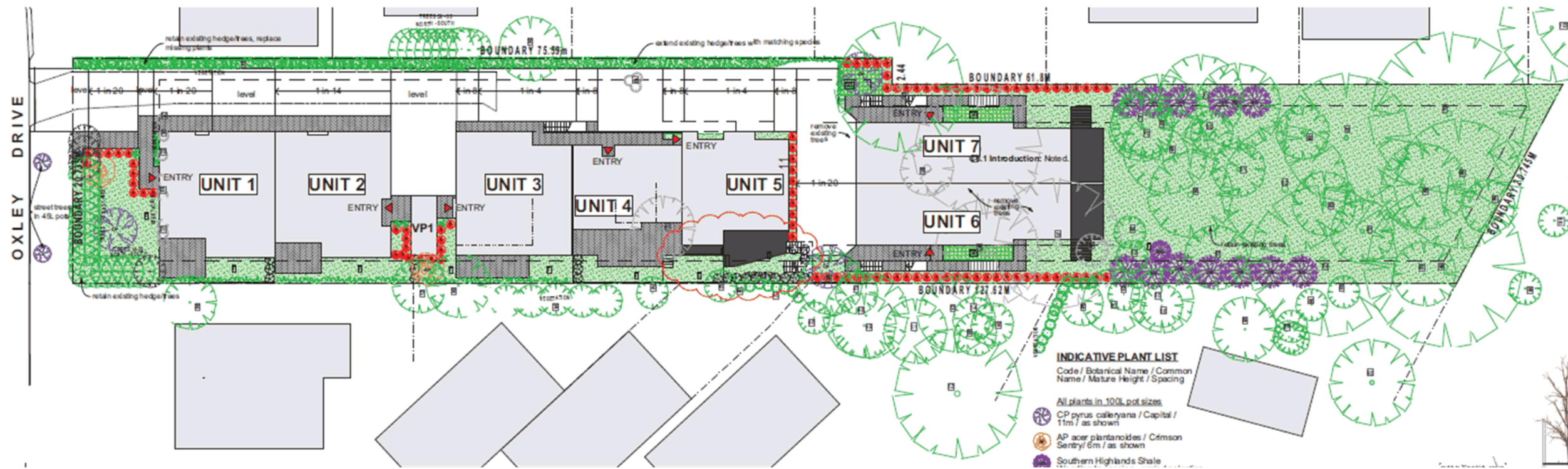




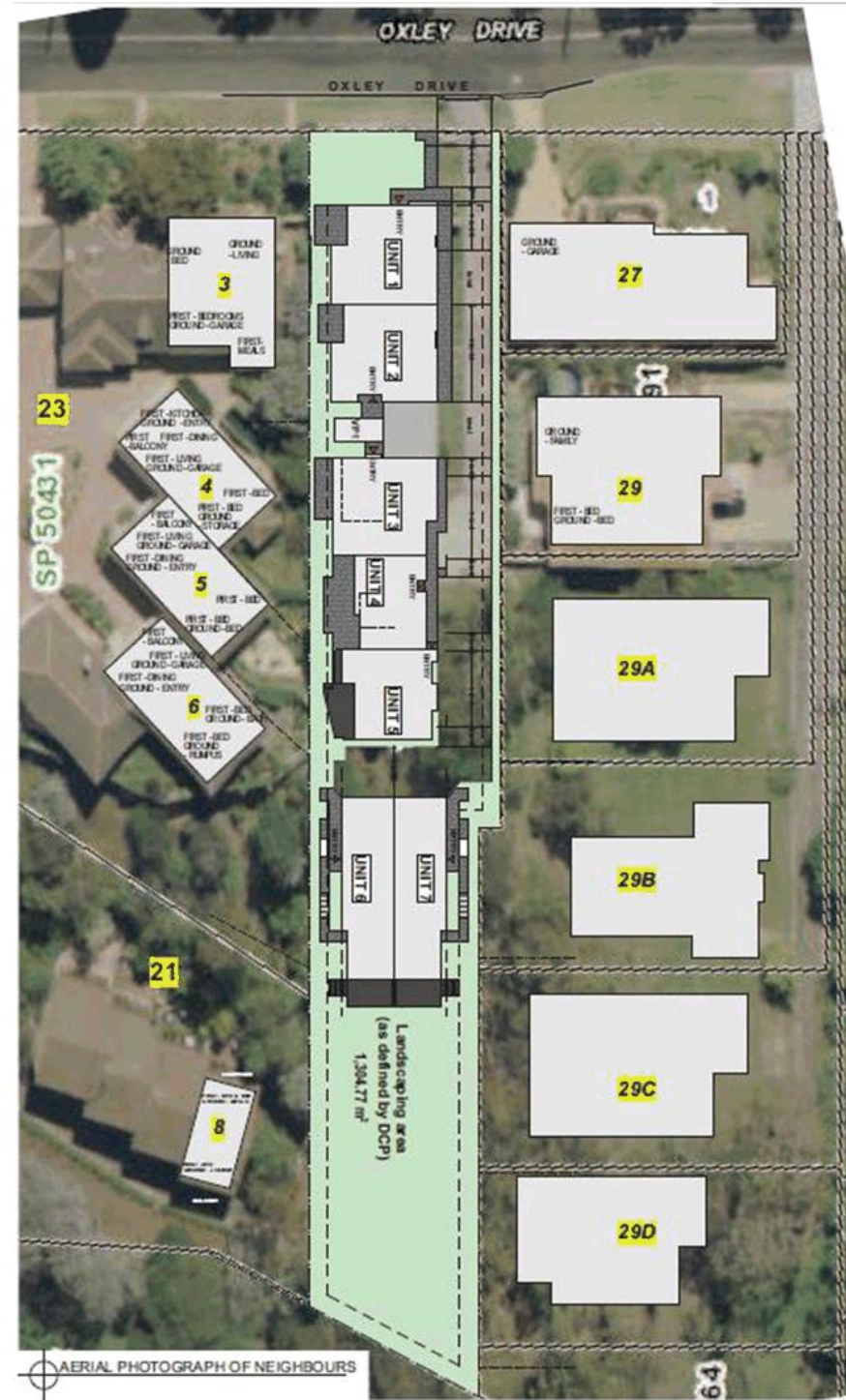
ATTACHMENT 4 – SITE PLAN



Existing Site Plan and location of adjoining residences

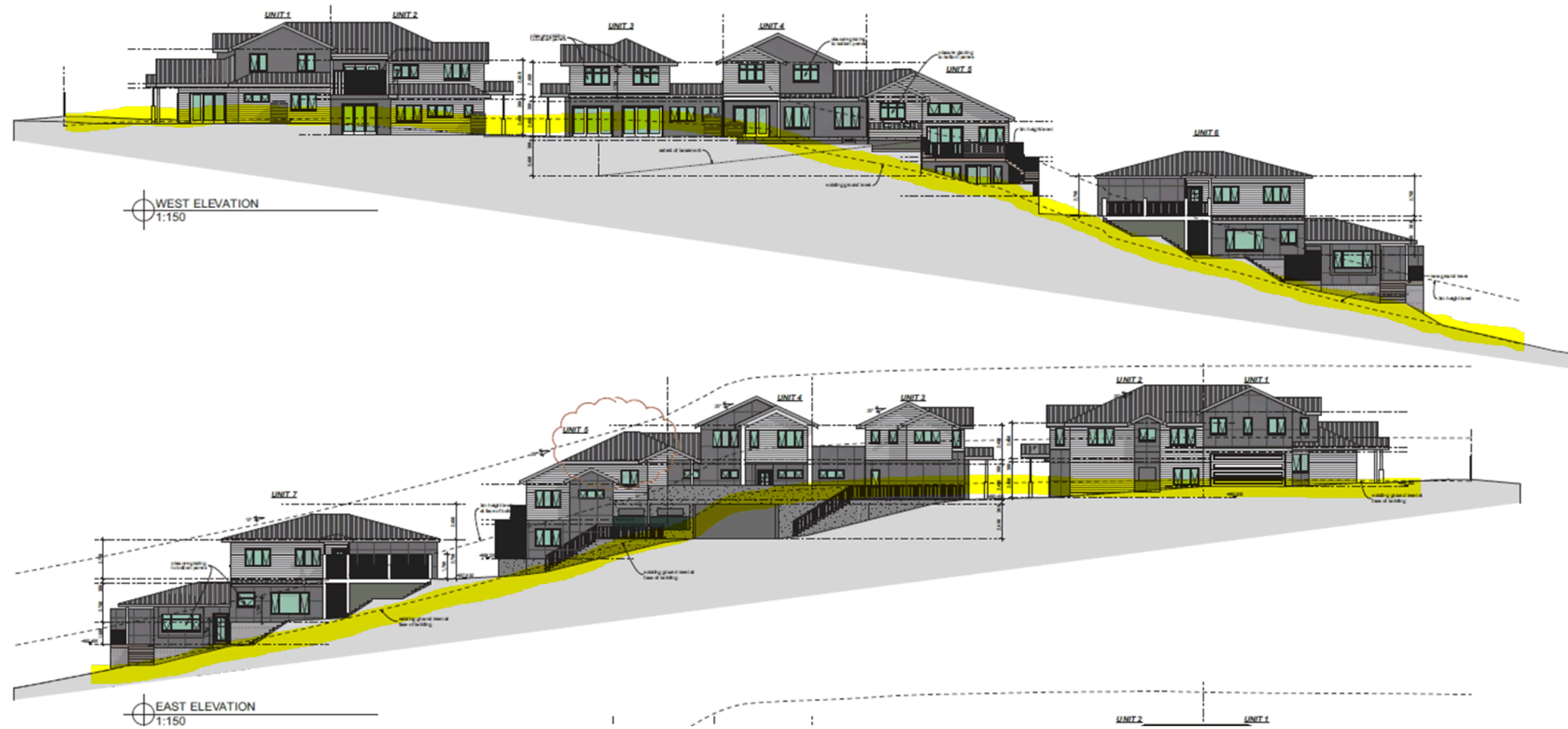


Proposed Site Plan

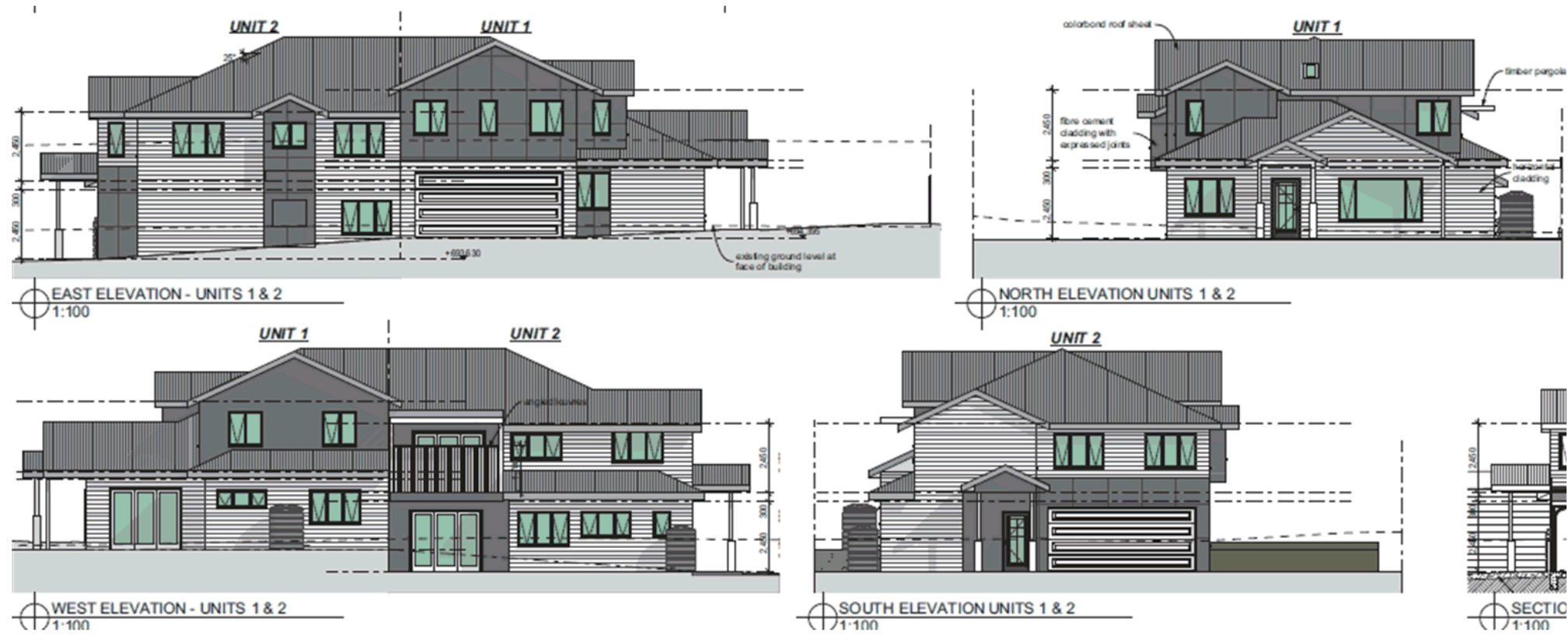


Proposed Site Plan and adjoining development overlaid on aerial photo

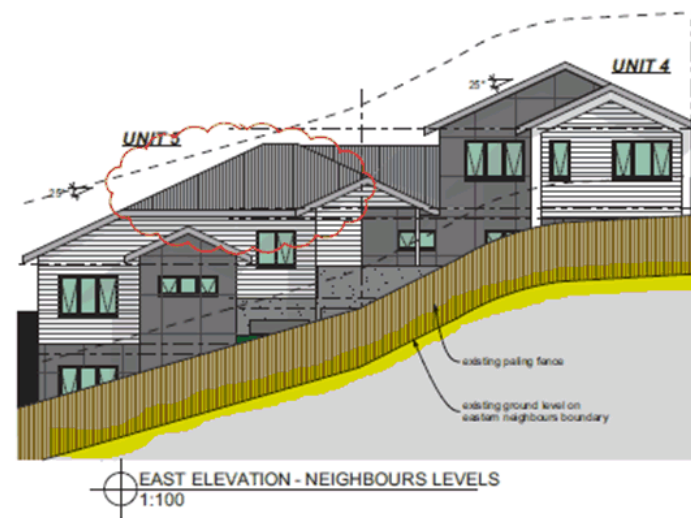
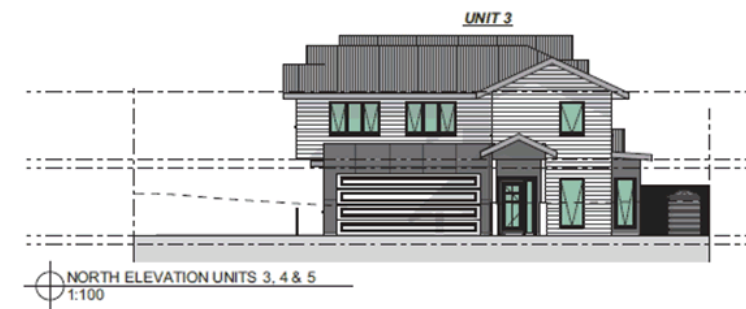
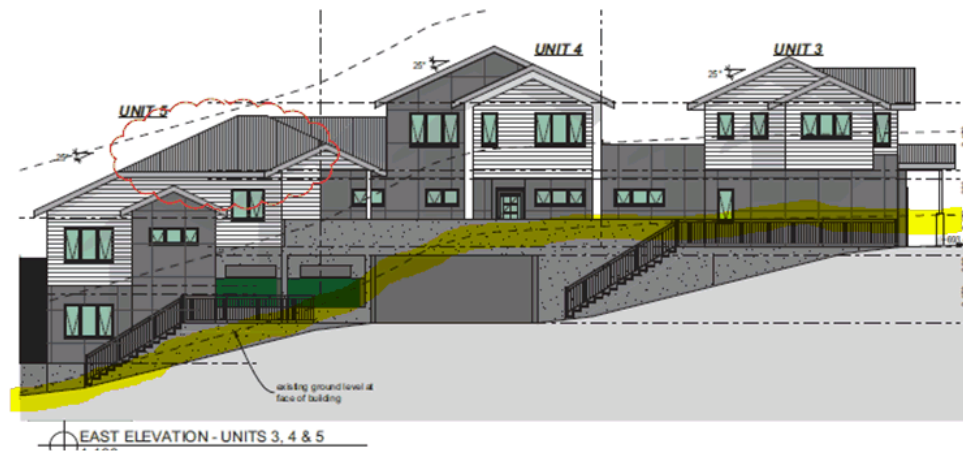
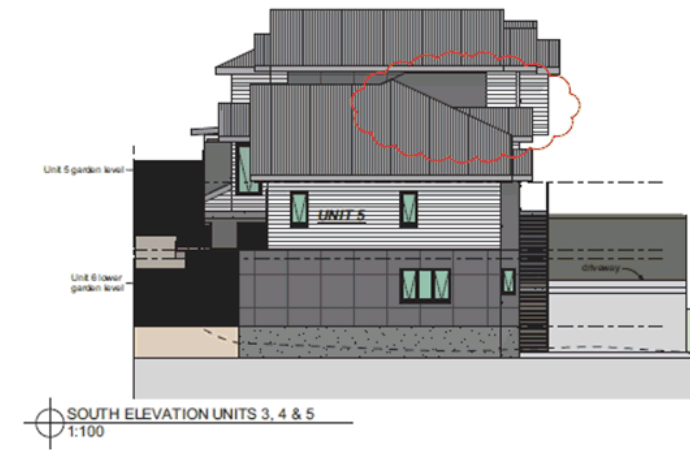
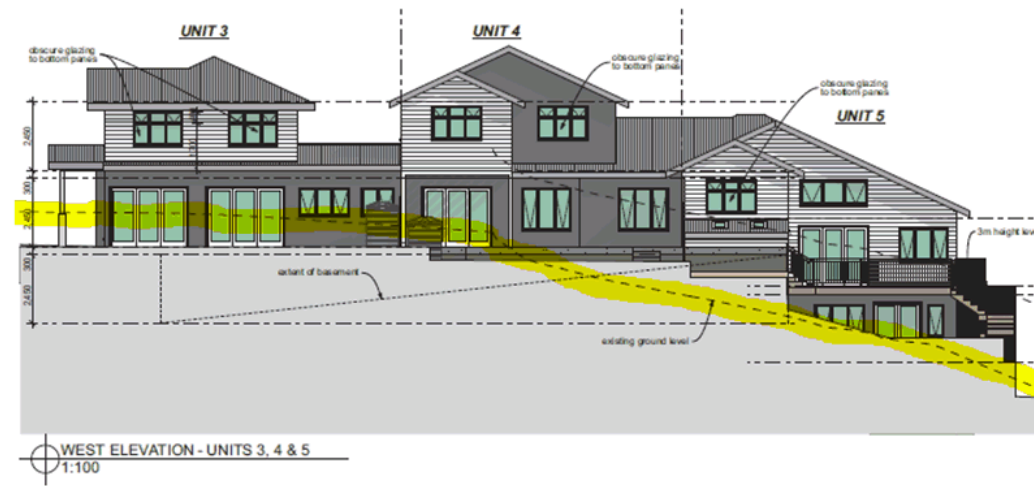
ATTACHMENT 5 – ELEVATIONS



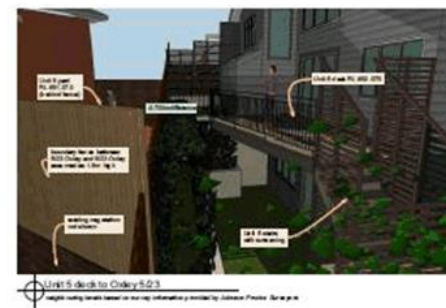
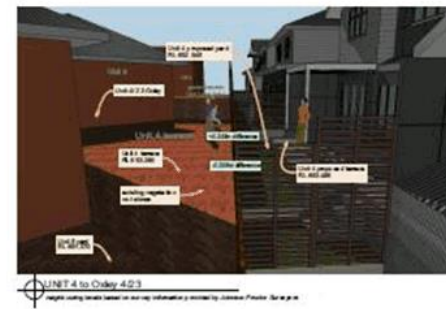
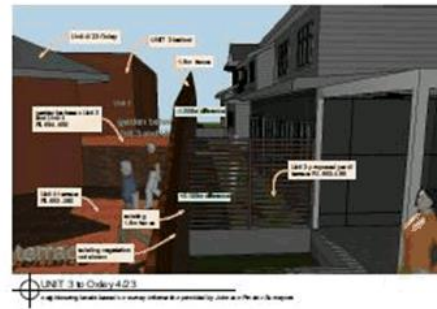
Eastern and western elevations (Yellow highlight shows existing natural ground level)



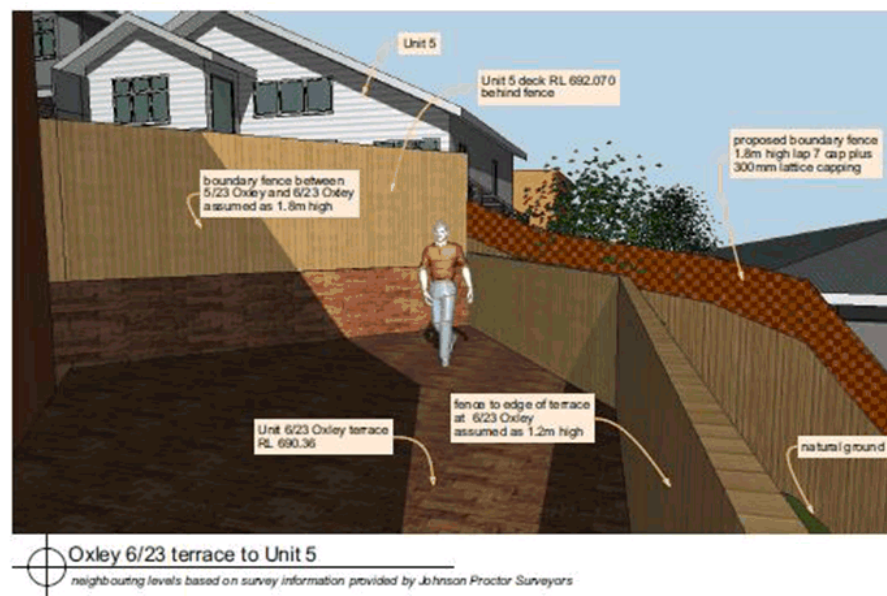
Elevations – Proposed Units 1 and 2



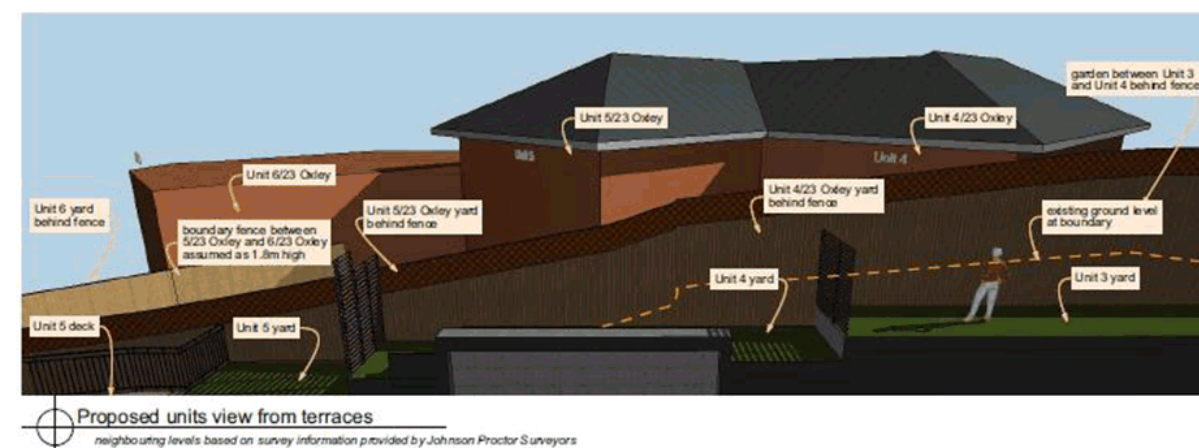
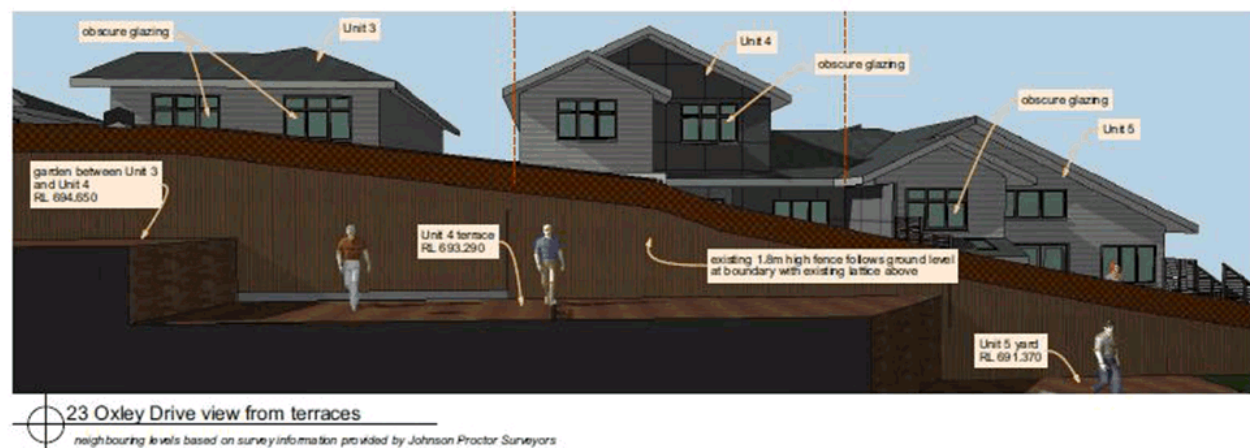
Elevations – Proposed Units 3, 4 and 5 (Yellow highlight shows existing natural ground level)



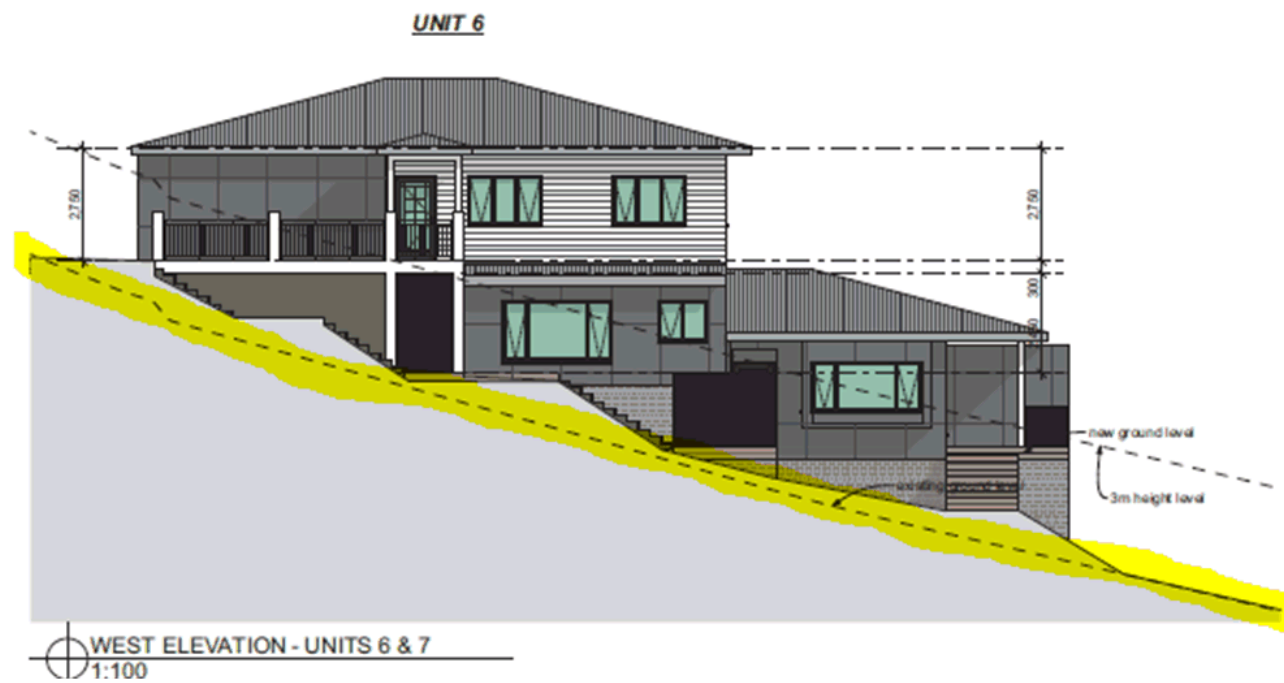
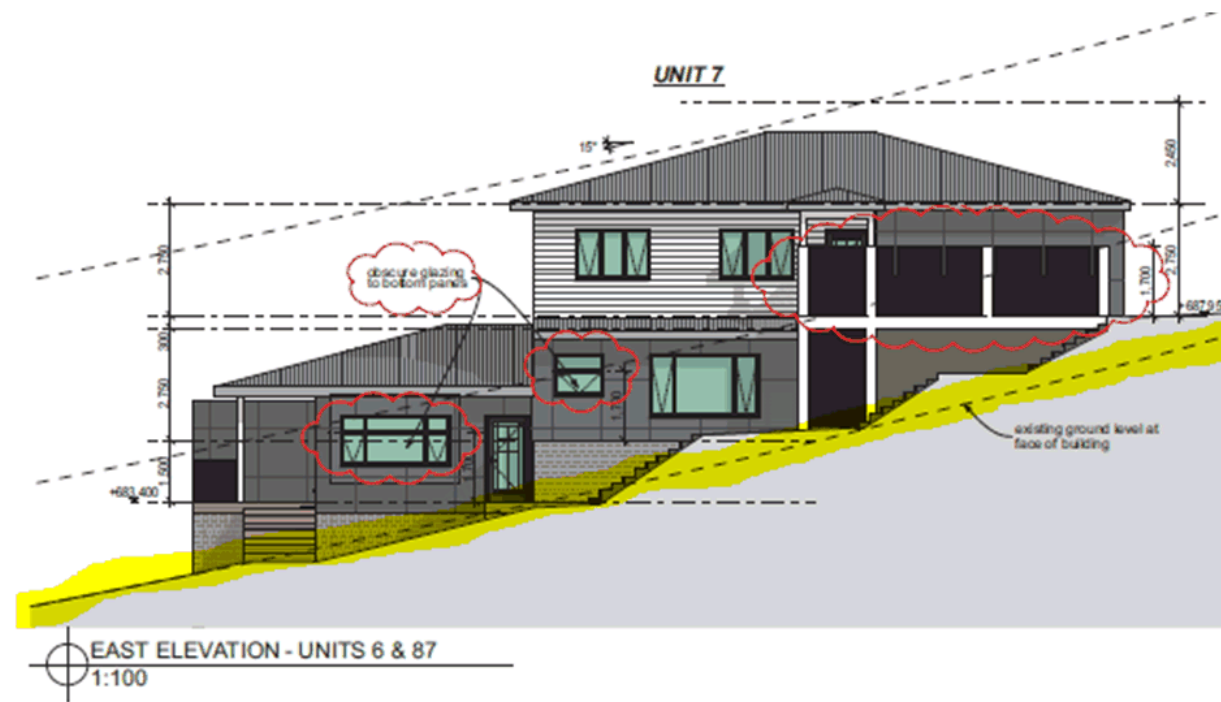
Perspectives – Proposed Units 3, 4 and 5 and adjoining western units 3/23, 4/23, 5/23 and 6/23 private open space areas



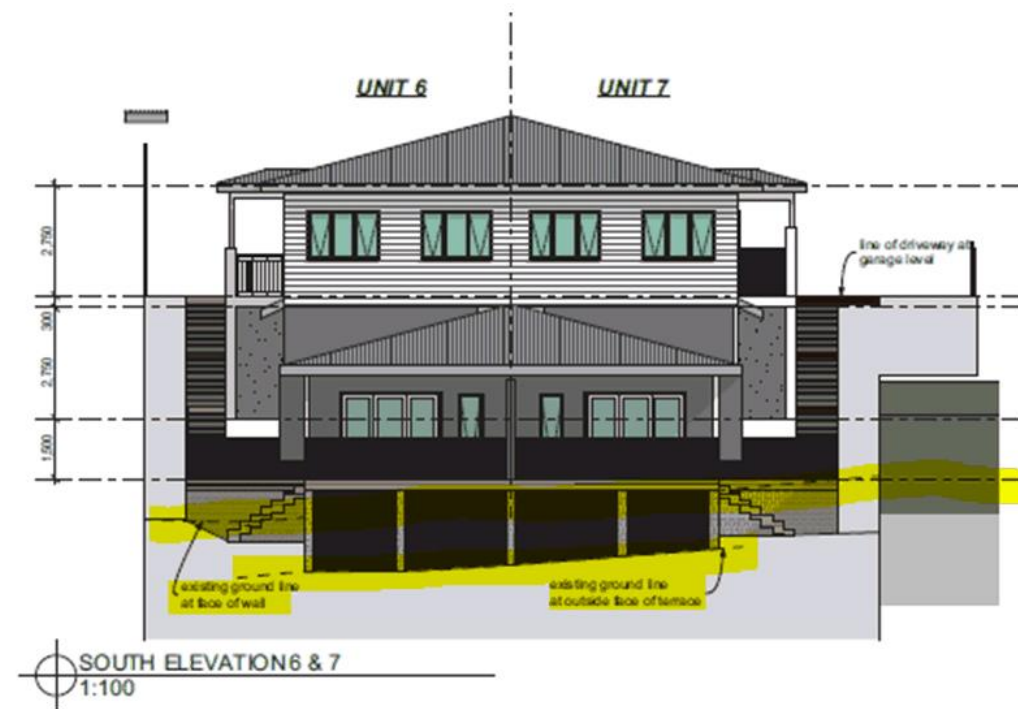
Perspectives – Proposed Unit 5 and adjoining western unit 6/23 private open space area



Proposed views between proposed Units 3, 4 and 5 / 25 Oxley Drive and existing Units 4, 5 and 6 /23 Oxley Drive



Elevations – Proposed Units 6 and 7 (Yellow highlight shows existing natural ground level)



North western Perspective 6 & 7
BOUNDARY FENCING NOT SHOWN FOR ILLUSTRATION PURPOSES



South Eastern Perspective 6 & 7
BOUNDARY FENCING NOT SHOWN FOR ILLUSTRATION PURPOSES

Elevations – Proposed Units 6 and 7

ATTACHMENT 6 – 21 June OVERSHADOWING



10am 21 June – Overshadowing of adjoining western units 3/23, 4/23, 5/23 and 6/23 private open space areas



10:30am 21 June – Overshadowing of adjoining western units 3/23, 4/23, 5/23 and 6/23 private open space areas

Proposed development does not overshadow adjoining eastern properties



11am 21 June – Adjoining western units 3/23, 4/23, 5/23 and 6/23 private open space areas not overshadowed.

Proposed development does not overshadow adjoining eastern properties. Overshadowing largely contained within subject property.



11:30am 21 June – Proposed development does not overshadow adjoining western units 3/23, 4/23, 5/23 and 6/23 private open space areas

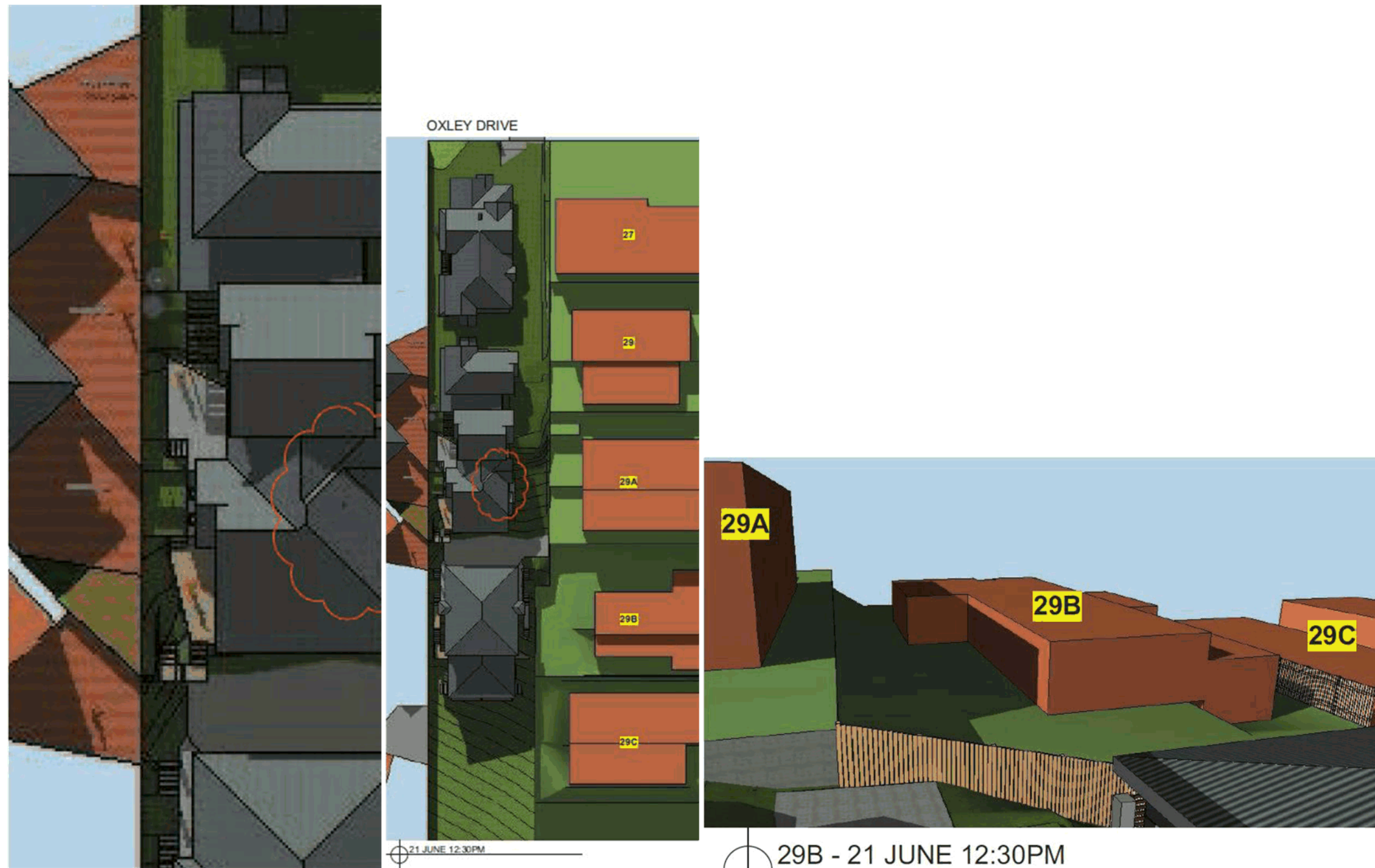
Proposed development does not overshadow adjoining eastern properties. Overshadowing largely contained within subject property.



12 midday 21 June - Proposed development does not overshadow adjoining western units 3/23, 4/23, 5/23 and 6/23 private open space areas

Proposed development does not overshadow adjoining eastern properties. Overshadowing largely contained within subject property.

Shadow impact upon 29B Oxley Drive cast from 29 A Oxley Drive does not affect solar access to western facing living room window of 29B Oxley Drive.



12:30pm 21 June - Proposed development does not overshadow adjoining western units 3/23, 4/23, 5/23 and 6/23 private open space areas

Shadow impact upon 29B Oxley Drive cast from 29 A Oxley Drive does not affect solar access to western facing living room window of 29B Oxley Drive.



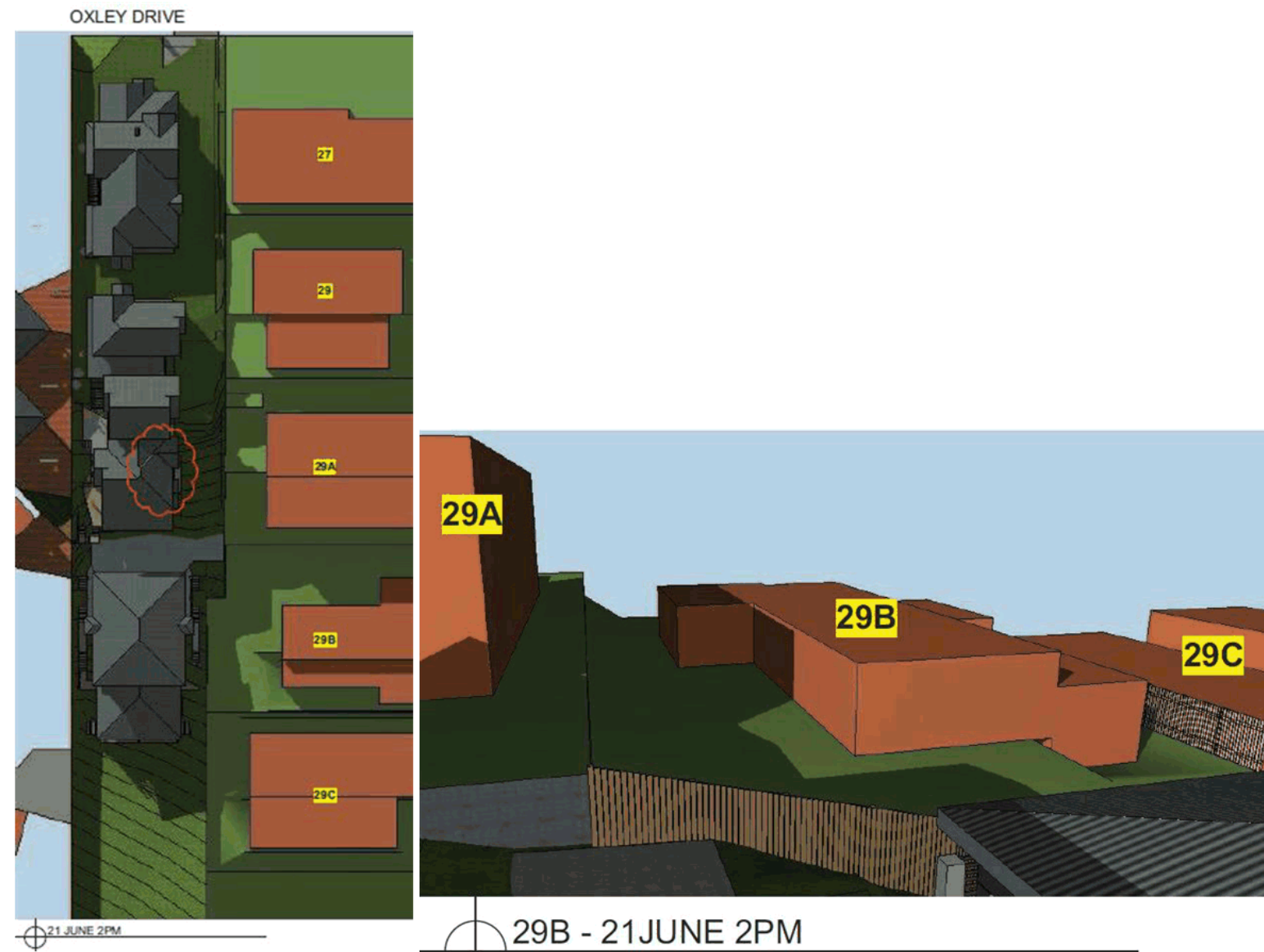
1:00pm 21 June - Proposed development does not overshadow adjoining western units 3/23, 4/23, 5/23 and 6/23 private open space areas

Shadow impact upon 29B Oxley Drive cast from 29 A Oxley Drive and proposed development does not affect solar access to western facing living room window of 29B Oxley Drive.



1:30pm 21 June - Proposed development does not overshadow adjoining western units 3/23, 4/23, 5/23 and 6/23 private open space areas

Shadow impact upon 29B Oxley Drive cast from 29 A Oxley Drive and proposed development does not affect solar access to western facing living room window of 29B Oxley Drive.



2:00 pm 21 June - Shadow impact upon 29B Oxley Drive cast from 29 A Oxley Drive and proposed development does not affect solar access to western facing living room window of 29B Oxley Drive.



☀ 29B - 21 JUNE 2:30PM

2:30 pm 21 June - Shadow impact upon 29B Oxley Drive cast from 29 A Oxley Drive and proposed development does not affect solar access to western facing living room window of 29B Oxley Drive.

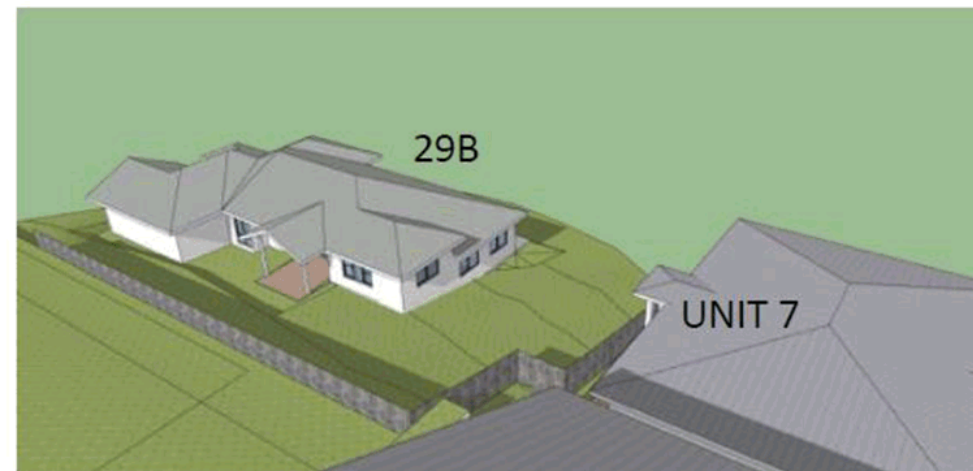


☀ 29B - 21 JUNE 3PM

3:00 pm 21 June - Shadow impact upon 29B Oxley Drive cast from proposed development shades approximately half of the western facing living room window of 29B Oxley Drive.

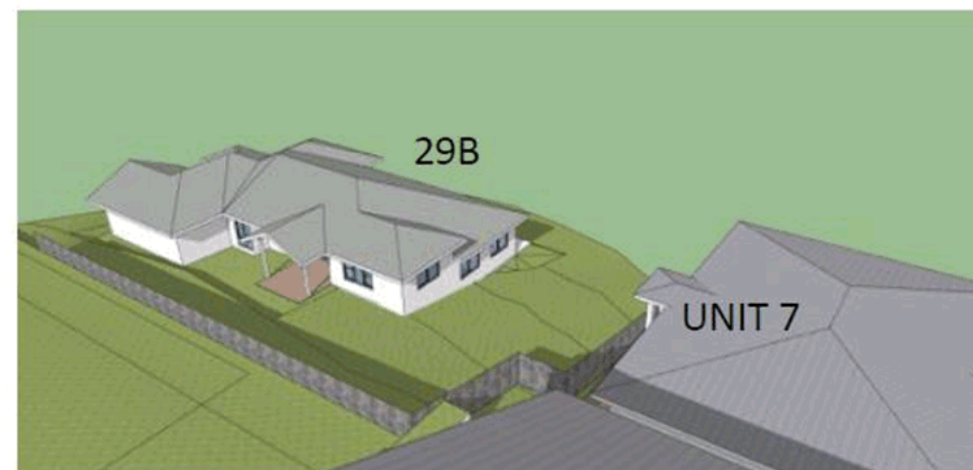
ATTACHMENT 7 – Objector's Consultant's June 21 shadow diagrams based on superseded plans

Note: The Objector's Consultant's June 21 shadow diagrams submitted 7 February 2020 (below) are based upon superseded plans, and are not based upon the amended plans submitted by the applicant dated 3 February 2020 as placed on Council's DA Tracker 4 February 2020, which reduce overshadowing impacts upon adjoining eastern properties by the replacement of the previously proposed eastern elevation gable roof of Unit 5 with a hipped roof.



SHADOW 3D VIEW

JUNE 21
12.00PM



SHADOW 3D VIEW

JUNE 21
12.30PM



SHADOW 3D VIEW

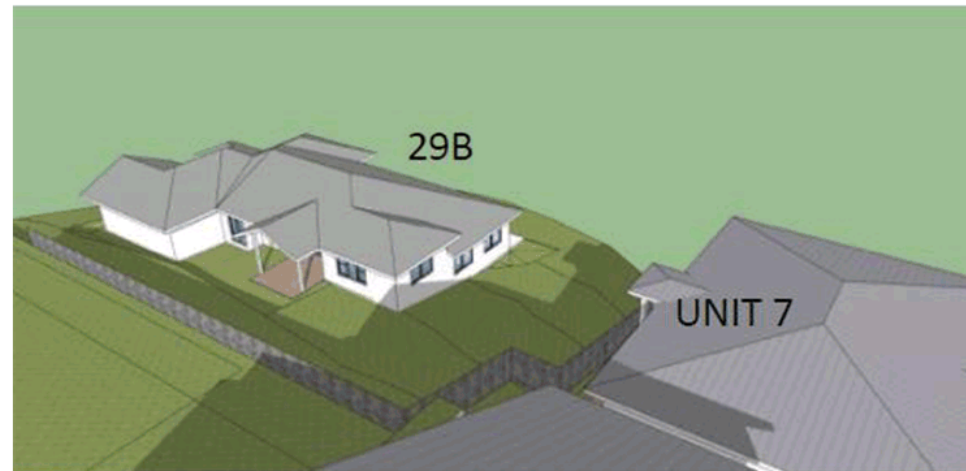
JUNE 21
01.00PM



SHADOW 3D VIEW

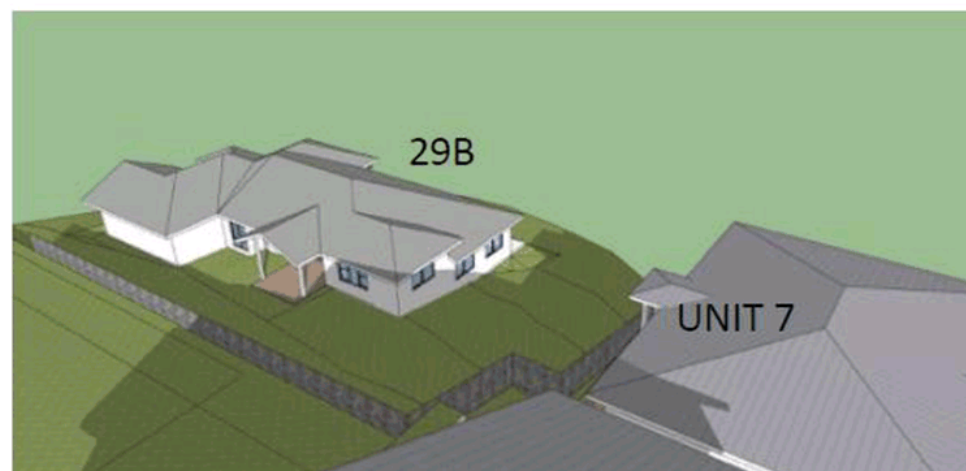
JUNE 21
01.30PM

Council comment: These 1:00pm and 1:30pm shadow diagrams submitted by the objector's consultant show overshadowing impacts from the previously proposed eastern elevation gable roof of Unit 5, which was deleted and replaced with a hipped roof in amended plans submitted by the applicant dated 3 February 2020. Shadow diagrams in Attachment 6 show the reduced shadow impacts with the inclusion of a hipped roof for Unit 5.



SHADOW 3D VIEW

JUNE 21
02.00PM



SHADOW 3D VIEW

JUNE 21
02.30PM

Council comment: These 2:00pm and 2:30pm shadow diagrams submitted by the objector's consultant show overshadowing impacts from the previously proposed eastern elevation gable roof of Unit 5, which was deleted and replaced with a hipped roof in amended plans submitted by the applicant dated 3 February 2020. Shadow diagrams in Attachment 6 show the reduced shadow impacts with the inclusion of a hipped roof for Unit 5.



SHADOW 3D VIEW

JUNE 21

03.00PM

Council comment: This 3:00pm shadow diagram submitted by the objector's consultant show overshadowing impacts from the previously proposed eastern elevation gable roof of Unit 5, which was deleted and replaced with a hipped roof in amended plans submitted by the applicant dated 3 February 2020. Shadow diagrams in Attachment 6 show the reduced shadow impacts with the inclusion of a hipped roof for Unit 5.

ATTACHMENT 8 – Objector's Consultant's plans showing view of development to and from 29 B Oxley Drive



VIEW 1 TO 29B FROM WINDOW OF UNIT 7



VIEW FROM BEDROOM TOWARD UNIT 7

Council comment: The two upper eastern facing windows of Unit 7 are a study and bedroom windows. The lower window is a bedroom window. These eastern facing bedroom and study windows will overlook 29B Oxley Drive, however as bedrooms are not living areas, obscure glazing to bedroom areas is not required. For the upper eastern facing study area, fixed obscure glazing in any part of the window less than 1.7 metres above the floor will be required by a condition of consent. The lower level bedroom window will be screened. The entry walkway contains a 1.7 metre high screen to its east, to prevent overlooking into 29B Oxley Drive, which is not shown in the objector's consultant's above view plan.



VIEW FROM TERRACE TOWARD UNIT 7

Council comment: The entry walkway contains a 1.7 metre high screen to its east, to prevent overlooking into 29B Oxley Drive, which is not shown in the objector's consultant's above view plan.



VIEW FROM TERRACE TOWARD UNIT 5



VIEW 1 TO 29B FROM WINDOW OF UNIT 5

Council comment:: The three upper eastern facing windows of Unit 5 are a bedroom, ensuite and kitchen windows, which will overlook the adjoining eastern properties, however as bedrooms are not living areas, obscure glazing to bedroom and ensuite areas is not required. For the upper eastern facing kitchen area of Unit 5, fixed obscure glazing in any part of the window less than 1.7 metres above the floor will be required by a condition of consent. The lower window of Unit 5 is a rumpus room window, which due to its elevations this window should also have fixed obscure glazing in any part of the window less than 1.7 metres above the floor. This can be addressed by a condition of consent. The roof of proposed Unit 5 has been reduced from a gable end to a hipped roof, which is not shown in the objector's consultant's above view plan. The upper eastern facing windows of Unit 4 are bedrooms and ensuite windows, which will overlook the adjoining eastern properties, however as bedrooms and ensuites are not living areas, obscure glazing to bedrooms and ensuite areas is not required. Fixed screening to the east of the elevated entry path to Units 4 and 5 to ensure the privacy of eastern / south eastern properties is required by a condition of consent.

Note: The shadow shown above as submitted by the objector's consultant show overshadowing impacts from the previously proposed eastern elevation gable roof of Unit 5, which was deleted and replaced with a hipped roof in amended plans submitted by the applicant dated 3 February 2020

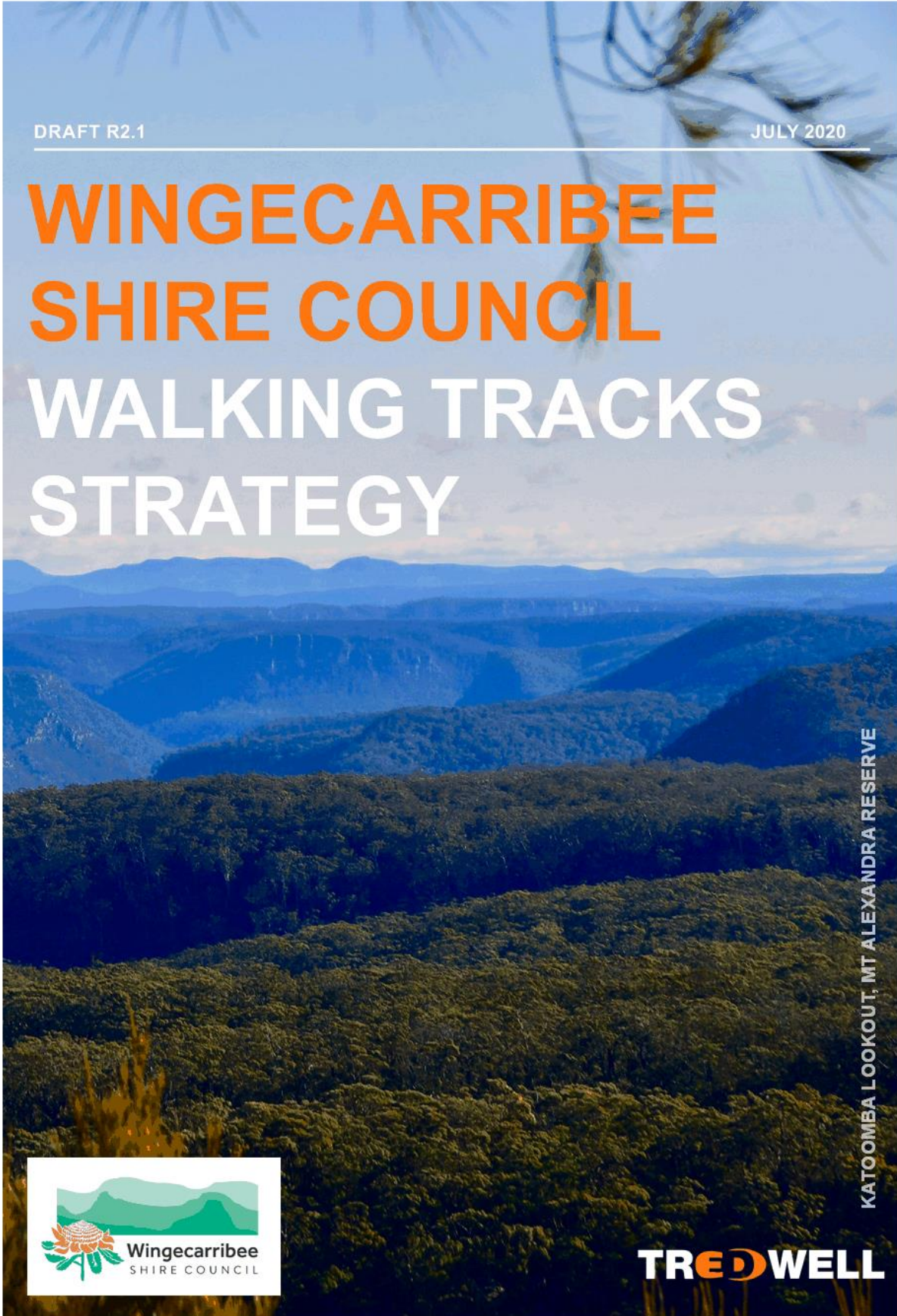
ATTACHMENTS TO REPORT

Item 11.2

Draft Walking Tracks Strategy

Attachment 1

Walking Tracks Strategy Draft R2.1



DRAFT R2.1

JULY 2020

WINGECARRIBEE SHIRE COUNCIL WALKING TRACKS STRATEGY

KATOOMBA LOOKOUT, MT ALEXANDRA RESERVE



TREDWELL



Version No.	Date	Description	Editor
Draft R1	26.06.2020	Initial Draft	Tredwell
Draft R2	17.07.2020	Revised following Internal Project Team Feedback	Tredwell
Draft R2.1	28.07.2020	Revised following Councillor Presentation	Tredwell

Acknowledgement of Country

The Wingecarribee Shire and Tredwell acknowledges the Traditional Custodians of this land and we pay our respects to Elders both past and present. We would also like to acknowledge our young leaders who are the Elders of today, tomorrow and our future.

Photographic Acknowledgement

Sandra Stewart has generously donated the photographs for use throughout this report.

Disclaimer

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For further information

TREDWELL

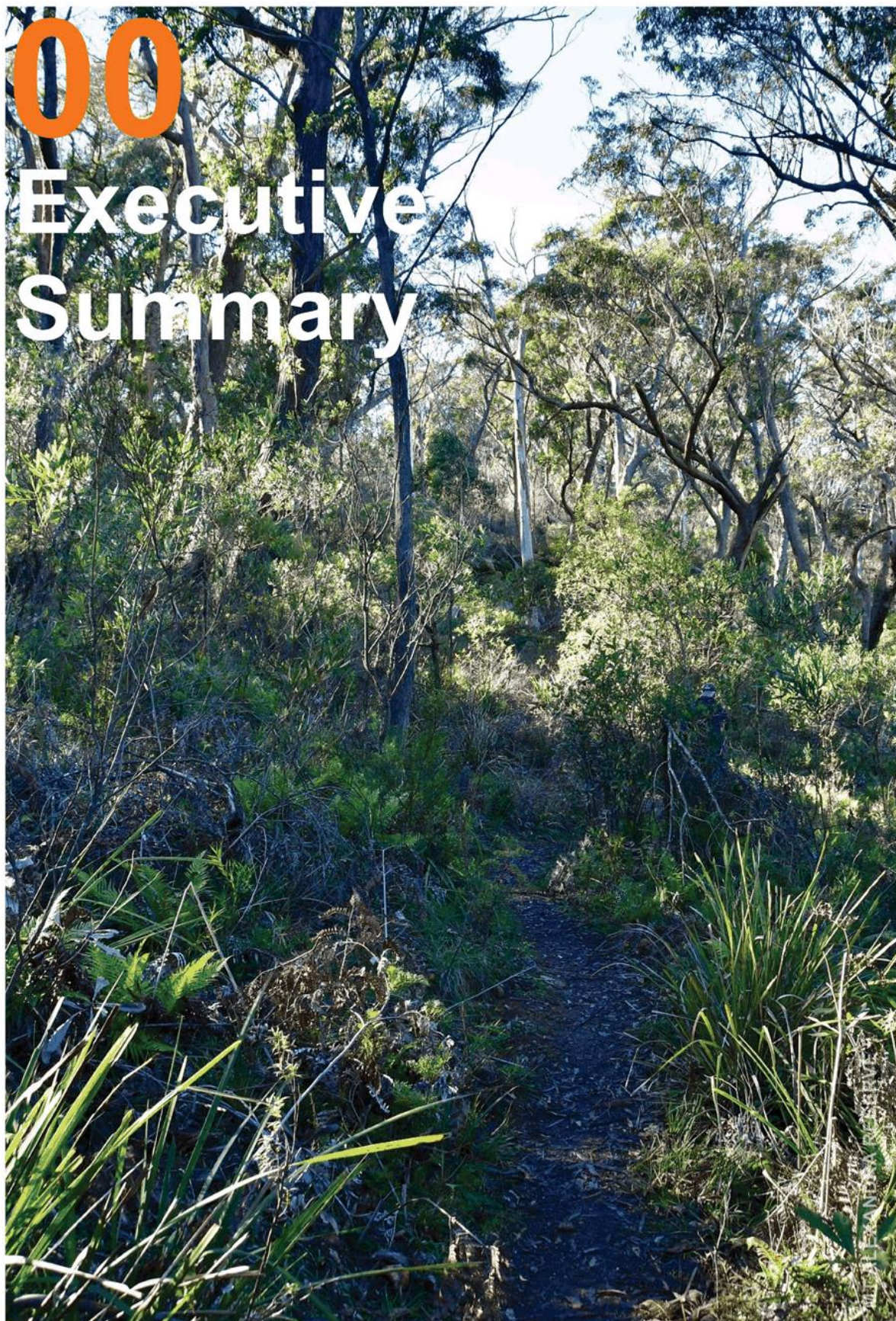
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00 Executive Summary

Wingecarribee Shire Council (WSC) engaged Tredwell Management to develop the Recreational Walking Tracks Strategy, with the aim to consolidate Council's understanding of the available network and to provide a framework surrounding the identification, maintenance and enhancement of authorised tracks and trail networks.

Key objectives of this project were to:

- Develop a Strategy for the management, enhancement, and on-going maintenance of recreational walking tracks on Council owned or managed land.
- Identify a cohesive track network that offers active and challenging recreational experiences encompassing the Shire's diverse and distinctive landscapes.

The project scope of the covers the following Council-managed reserves:

- | | |
|---------------------------|---|
| • Mount Alexandra Reserve | • River Bend Reserve |
| • Welby Weir | • Berrima Weir Reserve |
| • Lake Alexandra | • Stone Quarry Walk |
| • Iron Mines Oval | • Bong Bong Common (Link to Cecil Hoskins |
| • Mount Gibraltar Reserve | • Governors Road Boardwalk (Road Reserve) |
| • Gibbergunyah Reserve | • Glow Worm Glen - William Street Reserve |
| • Mansfield Reserve | • Garland Street Reserve |
| • Hammock Hill Reserve | |
| • Berrima River Reserve | |

The methodology consisted of background research, on-ground trail auditing and ground truthing, mapping, consultation, strategic planning and the development of a comprehensive strategy and action plan.

Demographic changes, as well as participation and broad societal trends will have implications on the requirements for walking tracks into the future. For example, the increasing popularity of nature-based tourism and individualised recreational pursuits and increasing community expectations.

The development of the Walking Tracks Strategy included a comprehensive review of background information to alignment with the wider objectives across the state, region, and local areas.

The following Australian Standards relate directly to walking tracks and are fundamental to this Strategy:

- AS 2156.1, Walking tracks, Part 1: Classification and signage, and
- AS 2156.2—2001: Walking Tracks Part 2: Infrastructure Design

These standards require walking tracks to be classified from Grade 1 to 6 according to their level of difficulty. This classification also determines the appropriate level and type of infrastructure as well as the risk management requirements for trail managers.

Signage templates have been provided to support the implementation of the Strategy; these are classified as:

- Trailhead Sign
- Waymarking Signs
- Directional Signs
- Interpretation Signs
- Management/Warning Signs

A hierarchy for walking tracks has been established to guide the level of infrastructure required to meet the needs of a trail's users. The hierarchy classified trails as regional, district or local. .

Users of recreational trails are exposed to various risks, many of which can be identified and mitigated through a risk assessment. Council's risk matrix is provided, along with guidance for risk identification and mitigation measures.

The following Risk Assessment Matrix is used to determine the overall risk rating by the Wingecarribee Shire Council.

An on-ground audit has been undertaken to produce ground-truthed, geo-referenced data and photographs relating to the walking tracks and associated infrastructure.

This process was also supported by an extensive desktop audit of existing walking



00 Executive Summary

tracks and consultation with stakeholders and community members to guide the focus of the field work toward established walking track alignments.

The data collection process aligned with Council's broader asset management system. This included use of the ESRI ArcGIS Online Collector mobile auditing application which integrates into Council's system hosted on ArcGIS Online.

The audit identified 28 walking tracks in the specified reserves.

While the recreational walking track experiences identified are generally suitable only for walking in their entirety, it is acknowledged that sections of these tracks may also be suitable for off-road cycling. This is particularly relevant to the sections of walking trails which utilise fire trails.

The Strategy has been informed by community consultation and stakeholder engagement. This involved an internal stakeholder meeting (with WSC staff), a meeting with targeted key external stakeholders, an online community workshop and a *YourSay Wingecarribee* webpage which includes an online community survey, mapping tool and forum.

Overall, the top three issues relating to walking tracks in the Shire's reserves were the lack of signage and track maintenance, and inadequate trail information and promotional materials.

The following vision has been developed, based on the findings of research, on-ground audits, and consultation, to reflect the goal for walking tracks in the Wingecarribee Shire.

The vision for walking tracks on Council owned or managed land is:

A cohesive network of walking tracks that offers locals and visitors the opportunity to confidently explore the Southern Highlands, immersing themselves in the region's rich biodiversity, proud heritage, and rugged landscapes.

To deliver the vision, the following series of strategic outcomes have been developed to

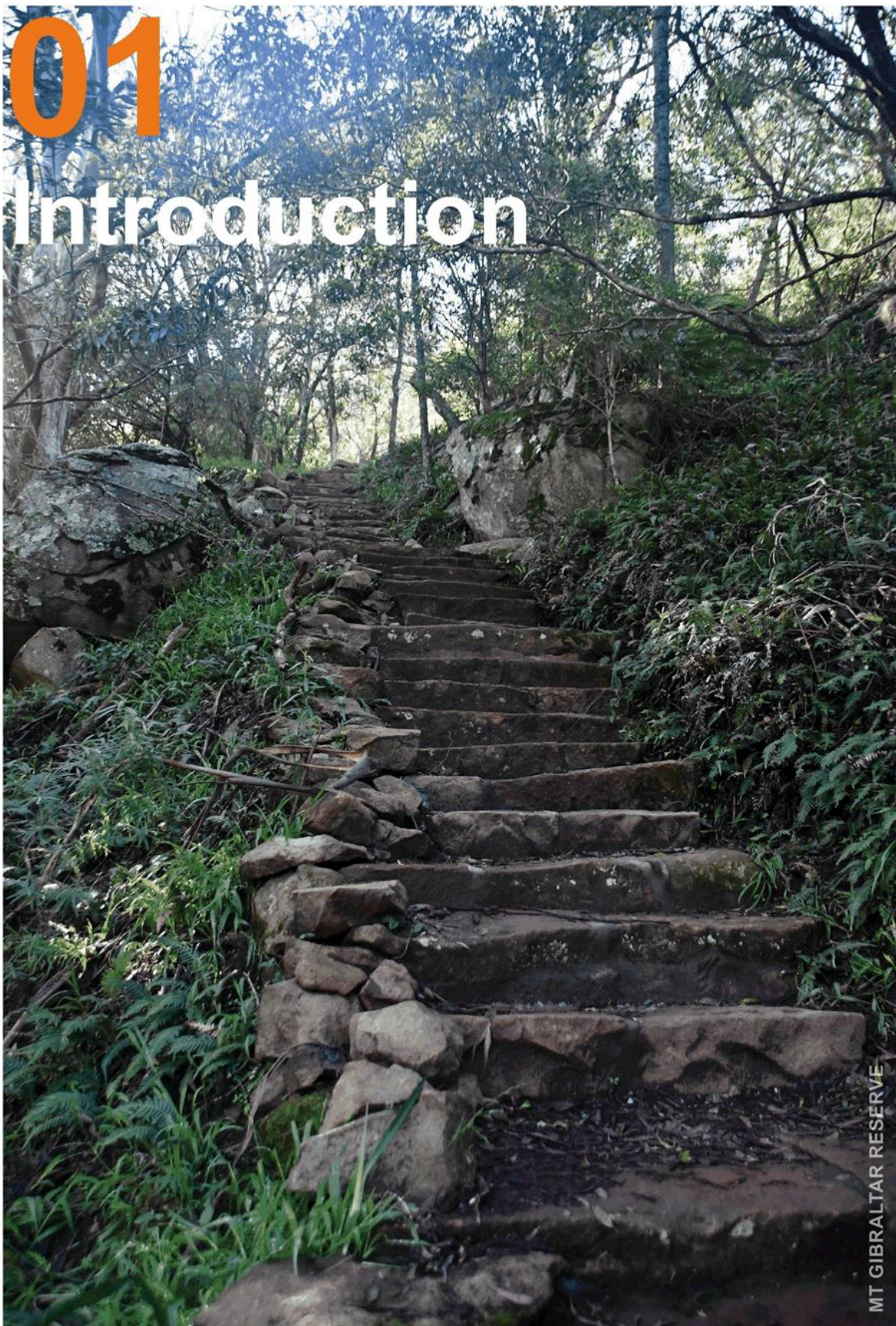
provide a framework for the Strategy and Action Plan.

- A. Integrated Planning & Management
- B. Clearly Defined, Safe, Sustainable & Accessible Walking Tracks
- C. Information, Promotion and Marketing
- D. Management and Maintenance
- E. Community, Tourism & Economic Development

The Strategy and Action Plan is underpinned by the following principles which have been developed to guide the planning and management of walking tracks in the Wingecarribee Shire.

1. Sustainable
Walking tracks that are planned, managed, and maintained to be socially, economically, and environmentally sustainable.
2. Diverse
Walking tracks that offer opportunities accessible to a diverse range of people and showcase the region's diverse range of landscapes, environments, and historic features.
3. Safe
Walking tracks that are safe and manage risk while maintaining the opportunity for walkers to undertake challenging experiences in the natural environment.
4. Collaborative
Effectively and efficiently manage walking tracks through collaborative partnerships with stakeholders.

The Strategy and Action Plan provides outlines the prioritisation of strategies and indicates the costs and timeframes for specific actions. An Order of Probable Costs for the capital works components of the strategy has been prepared by Rider Levett Bucknall Quantity Surveyors to inform Council's budgetary processes (included as Appendix 2).





01 Introduction

Project Overview

Background

Wingecarribee Shire Council (WSC) manages an extensive network of recreational walking tracks. The existing network has evolved from historical use and, in some cases, unplanned walking tracks. This network of both authorised and unauthorised tracks comprising multiple ownership tenures is a challenge for Council. In addition, lack of track identification including distances and difficulty rating, leaves the community and Council at risk.

WSC engaged Tredwell Management to develop the Recreational Walking Tracks Strategy, with the aim to consolidate Council's understanding of the available network and to provide a framework surrounding the identification, maintenance and enhancement of authorised tracks and trail networks.

Key objectives of this project were to:

- Develop a Strategy for the management, enhancement, and on-going maintenance of recreational walking tracks on Council owned or managed land.
- Identify a cohesive track network that offers active and challenging recreational experiences encompassing the Shire's diverse and distinctive landscapes.

Key Definition

For the purpose of this Strategy, a recreational walking track is considered to be:

“A corridor, route or pathway within the 16 Council reserves (outlined above in the scope) that provides for recreational walking, which passes through or has a strong connection with the natural environment, open space and cultural heritage”

The terms 'track' and 'trail' are used interchangeably and reflect this definition.

Approach



Figure 1: Project Approach

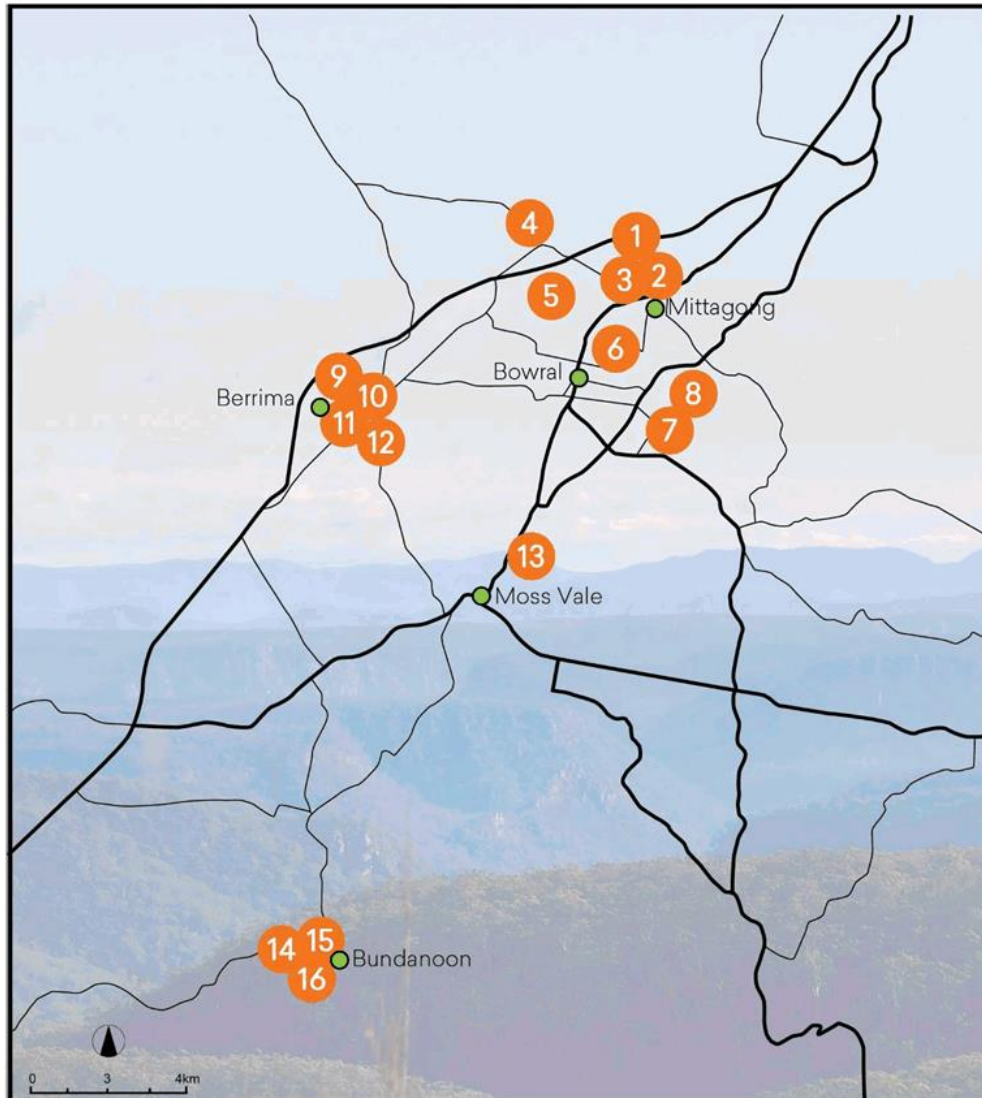
The methodology for this project consisted of background research, on-ground trail auditing and ground truthing, mapping, consultation, strategic planning and the development of a comprehensive strategy and action plan.

Scope

The scope of the Recreational Walking Tracks Strategy covers 16 specific Council managed reserves which have been identified to have existing recreational walking tracks, or potential for the development of such facilities. The name and location of these reserves is illustrated in Figure 2.

It is acknowledged that additional opportunities for the enhancement of recreational walking tracks exist across the Shire, as well as opportunities for the enhancement of trails for mountain bike riding, water-based trail activities (e.g. canoeing), horse riding and rock climbing. These opportunities are recommended to be considered in future strategic trail planning projects.

01 Introduction



- | | | |
|---------------------------|--------------------------|---|
| 1 Mount Alexandra Reserve | 7 Hammock Hill Reserve | 13 Bong Bong Common (link to Cecil Hoskins) |
| 2 Lake Alexandra Reserve | 8 Mansfield Reserve | 14 Glow Worm Glen William Street Reserve |
| 3 Iron Mines Oval Reserve | 9 River Bend Reserve | 15 Garland St Reserve |
| 4 Welby Weir | 10 Berrima River Reserve | 16 Governors Road Boardwalk (Road Reserve) |
| 5 Gibbergunyah Reserve | 11 Stone Quarry Walk | |
| 6 Mount Gibraltar Reserve | 12 Berrima Weir Reserve | |

Figure 2: Reserves within Project Scope



01 Introduction

Strategic Context

Region Overview

The Wingecarribee Shire is located 75kms from the south western fringe of Sydney and 110kms from Sydney central business district. The Shire has a total area of around 2,700 square kilometres.

The Shire lies within the Sydney – Canberra – Melbourne transport corridor on the Southern rail line and Hume Highway. Wingecarribee is also referred to as the Southern Highlands due to its position on a spur of the Great Dividing Range.

The main towns are:

- Bowral
- Moss Vale
- Mittagong
- Bundanoon

There are smaller villages including Hill Top, Yerrinbool, Colo Vale, Robertson, Berrima, New Berrima, Exeter, Burrawang, Penrose, Willow Vale, Alpine, Balaclava, Renwick, Wingello, Sutton Forest, Avoca, Fitzroy Falls and Balmoral Village.

The Southern Highlands forms part of the Gundungurra tribal lands and preservation of Aboriginal heritage is significant. European settlement dates back to the early 1800s with first contact between Aboriginal people and Europeans occurring in 1798. Settlement followed in 1821 at Bong Bong.

The Shire is rich in biodiversity with large areas of high conservation values. Environmental features include cold climatic conditions, rugged topography and significant areas of state forest, national park and other protected lands that form part of the Sydney water catchment area.

(Source: *Wingecarribee Shire Community Strategic Plan* and www.wsc.nsw.gov.au)



Figure 3: Regional Context Map

The Southern Highlands sits atop the Great Dividing Range, providing a cool climate with four distinct seasons. This geography also provides a natural landscape of gorges, waterfalls and rolling hills, which the area is renowned for.

The ‘Visit Southern Highlands’ webpage promotes the area by highlighting the ‘Five Best Walks of the Southern Highlands’ as well as various destination and experiences incorporating nature, arts, heritage, wine, coffee and food trails.

(Source: <https://www.visitsouthernhighlands.com.au>)



01 Introduction

Community Profile

In order to strategically plan for the network of recreational walking tracks, an understanding is required of the Southern Highlands' defining characteristics and the likely future directions for trail initiatives

Figure 4 outlines key statistics and headlines to provide an overview of the Wingecarribee Shire community profile.

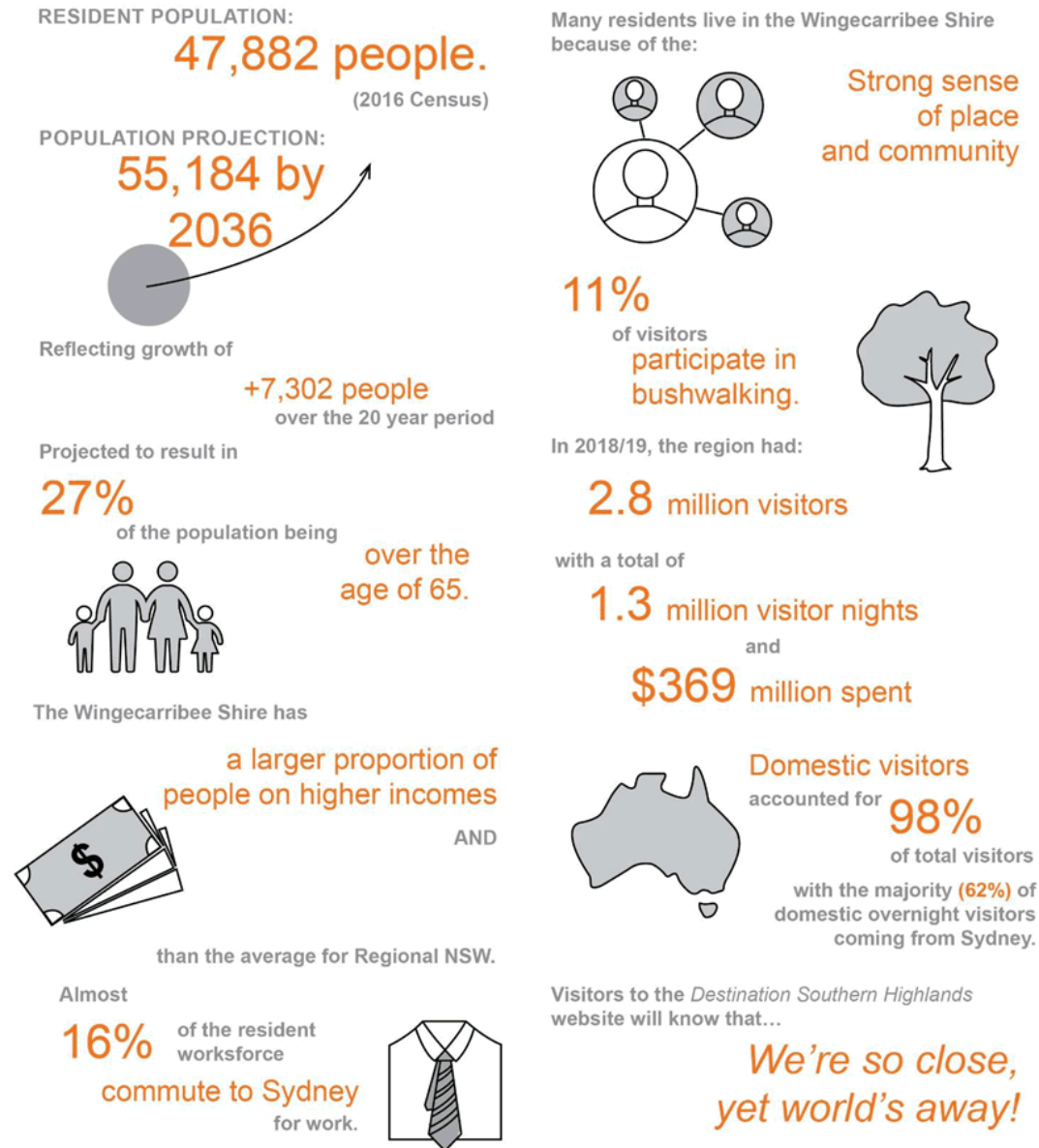


Figure 4: Community Overview

(Sources: www.profile.id.com.au, Bureau of Transport NSW Statistics (2011), Wingecarribee Shire Community Strategic Plan (2017), Tourism Research Australia National and International Visitor Surveys (2020) and Southern Highlands Tourism Snapshot, Tourism in the year ending June (2019).



01 Introduction

Trends

Participation and broad societal trends will have implications on the requirements for and use of walking tracks into the future. The table below displays this data with corresponding implications for walk tracks.

Table 1: Trends & Implications

Trend	Implication for Recreational Walking Tracks
<p>Nature-based tourism</p> <p>As societies around the globe become increasingly urbanised, people may suffer from a phenomenon known as terms as 'nature deficit'. Research from Tourism Australia into the Australian travel mindset found that getting away from crowds is more important than ever before, as holidays provide the opportunity for people to take the time to reconnect with the natural world. Nature based tourism where people can immerse themselves in the natural environment is a key tourism drawcard.</p>	<p>Establishment of well-defined recreational walking tracks enables residents and visitors to 'escape crowds' and reconnect with the natural environment. The Wingecarribee Shire's extensive and unique bushland areas provide great opportunity to embrace this visitation through developing trail networks which provide access to key landscape and historical features. It is important to consider the need to keep trail signage and infrastructure sympathetic to the natural environment in order to provide a true nature-based experience which is distinct from activities in urban areas.</p>
<p>Popular physical activity</p> <p>The top six physical activities for adults in NSW in 2019 were:</p> <ol style="list-style-type: none"> 1. Walking (Recreational) 2. Fitness/Gym 3. Swimming 4. Athletics, track and field 5. Cycling 6. Bushwalking <p>(Source: AusPlay Survey, Dec 2019)</p>	<p>The popularity of walking (recreational) and bushwalking indicate that there is very high demand for facilities to cater for this. While walking in general is the most popular physical activity, bushwalking is both a regular activity for people to lead healthy lifestyles, and is also a key tourism attractor, particularly in areas with exceptional natural beauty such as the Southern Highlands.</p>
<p>Changing participation preferences</p> <p>Increasingly busy, time fragmented lifestyles mean people are increasingly becoming involved in individualised recreational activities rather than traditional, structured sports. Trail activities can occur at any time, individually or in groups.</p>	<p>Individualised recreational pursuits, such as bushwalking, can expect to experience significant increases in participation levels over coming years. It is important for governments and planning agencies to acknowledge this shift in participation preferences to ensure that reserves, walking tracks & associated infrastructure can cater for demand.</p>
<p>Ageing population</p> <p>Populations across Australia are generally ageing and Wingecarribee Shire Council area by 2036 will have 27 percent of their population over the age of 65. Indicators are also showing that Australians between 60-64 years are a standout group for their elevated participation rates in regular bushwalking (Source: Australian Leisure Management).</p>	<p>Participation opportunities will need to be diversified and expanded to meet the needs of the growing cohort of older Australians. For example, bushwalking tracks that clearly identify their level of difficulty so that potential users can assess their suitability. As the 'baby boomer' population retire from the workforce there is potential to engage them in activities such as bushwalking, and also to embrace their skills and experience through volunteer roles associated with trails.</p>
<p>High facility standards and community expectations</p> <p>Today's society places high expectations on reserves, walking tracks and associated infrastructure including standards for public safety and risk mitigation.</p>	<p>There is increasing pressure to provide high quality walking tracks which meet community expectations and are compliant with Australian Standards, manage risk, and protects the natural environment. Due diligence is required relating to trail planning, maintenance, and management.</p>



01 Introduction





Trend	Implication for Recreational Walking Tracks
<p>Inactivity and obesity</p> <p>Physical inactivity increases the risk of a range of diseases, such as cardiovascular disease, type 2 diabetes, and some cancers. More than half of Australian adults are either not active at all or do not meet the recommended guidelines (Source: Impact of physical inactivity as a risk factor for chronic conditions, Institute of Health and Welfare 2017)</p>	<p>Provision of active recreation opportunities is a role of all levels of governments which is becoming increasingly acknowledged and valued in the community. It is important that investment in reserves, walking tracks and associated infrastructure is well planned to encourage maximum community participation and healthy/active lifestyles.</p>
<p>Technology advancements – web-based systems & apps</p> <p>Recreation and physical activities are being transformed by technology. For example, social technologies have created online communities (e.g. Strava) and fitness tracking technologies (e.g. Fitbit).</p>	<p>Virtual platforms allow trail users to track and monitor their own performance and the times/skills of others, based on GPS enabled apps. The widespread availability of this technology is allowing enthusiastic trail users to ‘virtually’ walk anywhere in the world and discover new places to be active.</p>
<p>Technology advancements – user-generated content</p> <p>Online trail information is becoming increasingly accessible via user generated platforms (e.g. Maps.ME; Visit Southern Highlands).</p>	<p>While user-generated content can be an excellent initiative led by individuals to promote the use of tracks and trails, it is important that these online platforms are developed and maintained in collaboration and partnership with trail managers to ensure accuracy and consistency of information, and to ensure that use of unauthorised trails is not promoted.</p>
<p>Climate change</p> <p>It is widely researched and documented that the global climate is changing which is having an impact on weather patterns and the viability of existing lifestyles. Rising temperatures and extreme weather events (i.e. bushfires) which may be attributes to climate change impact directly on bushwalking procedures.</p>	<p>As active transport, such as walking, becomes increasingly encouraged to reduce carbon emissions, it is likely that participation in these activities will increase. It is important to ensure that the environmental impacts from walking tracks are mitigated. For example, by ensuring sustainable design which protects and conserves the natural environment.</p>
<p>Biodiversity & heritage loss</p> <p>Around the world, valuable ecosystems and heritage sites (Aboriginal and non-Aboriginal) are under pressure from urban expansion, agricultural clearing, and the effects of climate change.</p>	<p>It is important that walking tracks are planned for suitable areas and that any threats to the loss of biodiversity and heritage are effectively mitigated and managed. Many reserves have strong historical and ecological significance (e.g. Mount Gibraltar Reserve is listed by the NSW Heritage Council on its Significant Heritage Register for its Endangered Ecological Communities and the Heritage Quarry Complex).</p>
<p>Leveraging from sport and recreation</p> <p>Governments (federal, state, local) and companies are increasingly utilising recreation to achieve their policy objectives (i.e. decrease chronic conditions) or market their products (i.e. Garmin).</p> <p>Recreation is increasingly incorporated into various policies to tackle a range of issues from childhood obesity through to social inclusion.</p>	<p>Trail walking can be used as a tool to improve health outcomes, build a sense of belonging and reduce feelings of loneliness. According to the Heart Foundation, this can play a key role in preventing depression and reducing anxiety. Various trail walking programs exist which are aimed at social inclusion and building a sense of community while spending time in nature. For example, the ‘First Hike Project’ which is a volunteer-led organisation taking people who have recently arrived in Australia through spectacular experiences in the bush as a way of welcoming people for a wide range of cultures.</p>

01 Introduction

Benefits of Recreational Walking Tracks

Recreational walking tracks offer a diverse range of benefits to our environment, people, economy, and places. Table 2 highlights key benefits of a well-planned and managed recreational tracks network in line with the Wingecarribee Shire Community Strategic Plan.

Table 2: Benefits of recreational walking tracks

Benefit		Outcomes
 Environment	Protection and enhancement of distinct and diverse natural environment	A network of well-planned, clearly defined, and authorised recreational tracks will: <ul style="list-style-type: none"> discourage people from deviating into natural areas which helps reduce human impacts on sensitive environments. allow reserve access for key groups for activities such as weed management, trail maintenance, fire protection (i.e. Bushcare, NSWRF, FRNSW) encouraging regulated use of natural areas can also increase passive surveillance which can help mitigate against unauthorised use.
 People	Happy and healthy lifestyle	<p>It is well researched and documented that physical activity and active outdoor recreation, such as walking, offer improved physical and mental well-being. Participation in trail-based activities can improve bone health, cardiovascular and muscular fitness, reduce the risk of obesity, and decrease rates of physical and mental illness.</p> <p>Recreational walking tracks can bring communities together through fostering community partnerships which are often required for trail planning, maintenance, or activation. For example, bushcare groups at Glow Worm Glen, Berrima, Hammock Hill, and Mansfield Reserves connect people with common interests.</p>
 Economy	Sustainable economy	<p>Investment in trail development is known to provide a positive return on investment through contributions to the economy. This is achieved through trail experiences becoming a key tourism driver which can increase visitation, extend lengths of stay, and enhance visitor expenditure. Southern Highlands has a unique brand identity and recreational walking tracks industry fits within the clean industry stance.</p> <p>Encouraging participation in trail-based activities can also ease the burden of health costs associated with increasingly inactive lifestyles.</p>
 Places	Integrated and efficient network	<p>Recreational tracks can provide safe off-road routes which link key destinations and enhance connectivity between towns and villages by utilising the network of cycleways and footpaths.</p> <p>The trail network also recognises, protects, and promotes places of significant cultural heritage (i.e. Aboriginal heritage at Gibbergunyah Reserve, Mining legacy at Mt Alexandra & World War 1 German internees at Berrima River Reserve).</p>



01 Introduction

Background Review

An important component on the development of the Walking Tracks Strategy was the review of a wide range of background information to ensure that the strategy is developed in alignment with the wider objectives across the state, region, and local areas.

The following strategic documents have been reviewed for consideration in the development of the Wingecarribee Shire Recreational Walking Tracks Strategy:

State-level Documents

- *State Plan – NSW 2021*
- *NSW Walking Strategy Literature Review (2011)*

Regional-level Documents

- *South East and Tablelands Regional Plan*
- *The Great Burragorang Valley Walk, Wollondilly Shire Council*

Wingecarribee Shire Council

- *Community Strategic Plan 2017 - 2031*
- *Parks Strategy (2016)*
- *Bicycle Strategy for Mittagong, Bowral and Moss Vale (Stage 1, 2008)*
- *Bicycle Strategy for Towns and Villages (Stage 2, 2016)*
- *Pedestrian Access and Mobility Plan for Small Towns and Villages (Bundanoon, Mittagong, Bowral and Moss Vale, Robertson) (2007)*
- *Delivery Program 2017-2021 Operational Plans 2019/20 and 2020/21*
- *Wingecarribee Local Planning Strategy 2015-2031*
- *Local Strategic Planning Statement (2020)*
- *Bushfire Risk Management Study of Reserves (2005)*
- *Community Engagement Strategy (2019)*
- *Disability Inclusion Action Plan 2017 - 2021*
- *Community Safety Plan 2015-2020*
- *Youth Strategy & Action Plan 2016-26*
- *Positive Ageing Action Plan 2016-26*
- *Arts and Culture Strategic Plan 2015-2031*
- *Local Emergency Management Plan (June 2016)*
- *Bong Bong Common Masterplan (2019)*
- *Plans of Management for Bushland Reserves (Various)*



STRATEGIC ALIGNMENT

It is important to ensure that the Walking Tracks Strategy is developed in alignment with the wider objectives across NSW, the South East & Tablelands and Wingecarribee Shire Council.



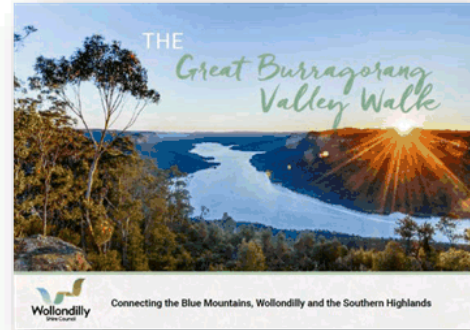
01 Introduction



The South East and Tablelands Regional Plan guides the NSW Government's land use planning priorities and decisions over the next 20 years.

Priorities for Wingecarribee that connect with the walking track strategy include:

- Protect high environmental value lands including regionally significant biodiversity corridors
- Protect the Sydney Drinking Water Catchment
- Protect the Shire's valued heritage assets
- Capitalise on economic opportunities arising from the area's proximity to Sydney
- Promote the Shire as a destination and encourage visitors to Canberra to also visit Wingecarribee Shire
- Protect the unique character of the Shire's village and rural lifestyle



The Great Burragorang Valley Walk, Connecting the Blue Mountains, Wollondilly and the Southern Highlands through a partnership led by Wollondilly Shire Council is an initiative to connect communities, attract visitors and tourism, grow the local and regional economy and ensure our environment and heritage is valued and protected.

The concept Mittagong to Yerranderie walk section appears to use a portion of the Forty Foot Falls and Nattai Loop Track. While the section Colo Vale to Mittagong appears to use the Sixty Foot Falls track.

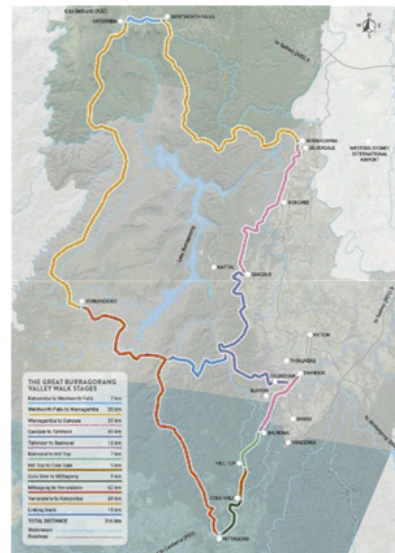
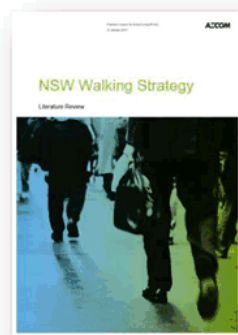


Figure 5: Great Burragorang Valley Walk Concept Map



01 Introduction



The *NSW Walking Strategy – Literature Review* refers to walking as a means of travel, a way of keeping healthy, a form of relaxation, and a sport.

Despite well documented benefits which show improved outcomes for health, environment, social inclusion and the economy, there is some evidence levels of walking has declined with only half of adult Australians sufficiently active to achieve health benefits.

Creating pleasurable walking environments can be highly effective and can significantly extend (perhaps double) the distance people are willing to walk. There is an established association between built environment and walking behaviour centred around three themes:

Connected suburbs

- Distance and connectivity
- Attractive walking destinations
- Different users have different needs
- Strategies for rural settings

Quality of the walking environment

- A route fit for purpose
- Wayfinding
- A pleasant environment
- Community involvement in decision making
- Different users have different needs

Safety

- Crime
- Conflict with other users of the transport system
- Trips and falls



The *Wingecarribee Shire Community Strategic Plan* adopted in June 2017 sets out the Community Vision. In 2031 we will be:

“A healthy and productive community, learning and living in harmony, proud of our heritage and nurturing our environment”

Several of the key goals and strategies designed to meet the aspirations of the community that are associated with the Walking Tracks Strategy are:

1.1.2 – Effective financial and asset management ensure Council's long-term sustainability.

1.3.2 – Empower our community to advance agreed priorities and address emerging issues in a collaborative manner to explore new ideas to improve the Shire.

2.1.3 – Increase promotion of healthy lifestyle choices

2.2.1 – Actively foster a spirit of participation and volunteering by addressing key barriers

2.3.2 – Acknowledge and respect our Aboriginal cultural heritage and people

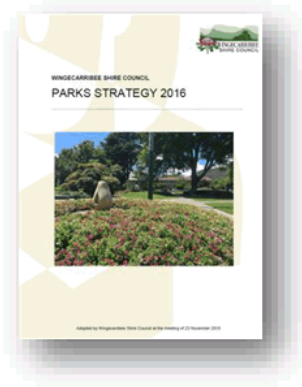
3.2.3 – Identify, protect, and promote places of cultural heritage

4.1.1 – Protect and improve biodiversity

5.14 – Provide diversity in tourist attractions and experiences



01 Introduction



The *Wingecarribee Shire Council, Parks Strategy (2016)* identifies existing land resources and sets service levels for most of the reserves considered in the Recreational Walking Tracks Strategy.

The primary purpose of a bushland reserve is to provide opportunities for people to experience, or protect, the natural environment and to provide habitat for flora and fauna. They may include walking tracks, low impact recreational activities, picnic areas and facilities to support and services these activities.

A community park is designed for passive recreation, should be early accessible and provide an open grass area and may contain small scale informal sports facilities.

Linear Parks are typically long and narrow, often associated with watercourses, and almost always incorporating a walking or cycling path.

There are three levels of service for bushland reserves & community parks that denote the level of development within each. A linear path has only a level of service 2 associated with it.

Table 3 outlines the service level assigned to each reserve within the scope of the Recreational Walking Tracks Strategy.

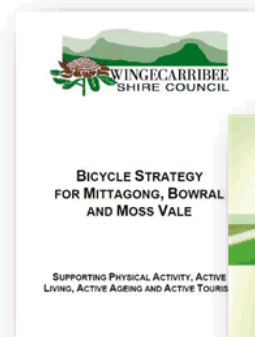
Table 3: Parks Hierarchy - Service Levels

Facility	Level of Service
Bushland Reserves	
Mt Gibraltar Reserve	1
Berrima Weir Reserve	2
Hammock Hill Reserve	2
Mansfield Reserve	2
Mt Alexandra Reserve	2
River Bend Reserve	2
Stone Quarry Walk Berrima	2
Garland St Reserve (Glow Worm Glen)	3
Gibbergunyah Reserve	3
Ironmines Oval	3
Welby Weir	3
Community Parks	
Lake Alexandra	1
Berrima River Reserve (Camping Grounds)	2
Linear Parks	
Bong Bong Common	2

Note: Governors Rd Boardwalk (Road Reserve) and Glow Worm Glen (William Street Reserve) are not included within the Park Strategy as they are road reserves.



01 Introduction



The *Bicycle Strategy for Mittagong, Bowral and Moss Vale* is a comprehensive plan for supporting physical activity, active living, active ageing and active tourism.

The bicycle strategy provides a proactive policy to develop and increase the role of the bicycle as an important sustainable transport mode to benefit the health and economic wellbeing of the community.

The stage 2 Bicycle Strategy focuses on delivering maximum effectiveness for increasing cycling across the LGA and to attract community wide benefits for cyclists.

The Wingecarribee Shire Council layer provided via ArcGIS Online captures the proposed, on road and off-road cycleways. In respect to this project the off-road cycleways exist in only two of the reserves:

- Hammock Hill (Kiameron PI to Harley St)
- Mount Gibraltar (Gib West Fire Trail)

The bicycle strategy does not identify that off-road cycling occurs at the Welby Mountain Bike Park, which is part of the Mt Alexandra Reserve and on various fire tracks and informal trails throughout the Shire reserves.

The *Southern Highlands Destination Plan 2020-2030* (Draft, July 2020) charts a new course towards a future the community can be proud of - a future that protects the special place.

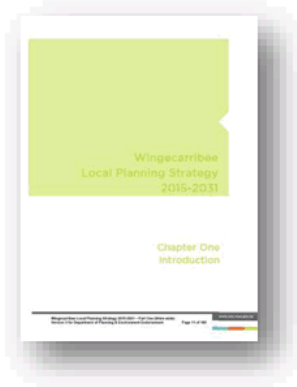
This Plan is built on the foundation of four pillars:

- People,
- Place,
- Prosperity and
- Partnerships.

Key opportunities are to:

- Increase attractiveness as a visitor destination to both domestic and international tourism markets. The region currently receives less than 2% of total visitation from international visitors and very few local tourism businesses are prepared for international markets and wholesalers.
- Increase mid-week visitation
- Ensure that the Southern Highlands is an attractive destination to live, work, learn, play, invest and visit. Ensuring that the region's natural environment (with nature-based facilities and activities) is not just attractive to visitors but is also desirable for people looking to move to rural areas; and therefore also to employers trying to attract workers to an area.
- Enhance nature-based experiences, including eco accommodation, hiking, mountain biking, adventure tourism etc., are considered a key opportunity for the region's tourism industry.

01 Introduction



The *Wingecarribee Local Planning Strategy 2015-2031* purpose is to identify a long term direction for the future development of the Shire upon which any proposed amendments to the Local Environmental Plan (LEP), or to the Development Controls Plans (DCPs) which support it, can be based.

It notes five key themes of Leadership, People, Places, Environment and Economy, along with local planning strategy recommendations.

2.2.4 – Provide structure in the Shire to encourage physical activities and enable access.

3.1.5 – Encourage cycling and walking

3.1.6 – Encourage development that will increase the viability of public transport, cycling and walking infrastructure.

3.2.2 – Retain and make more distinctive the special qualities that make each town or village unique.

3.5.2 – Ensure that the unique heritage qualities of towns, villages and special areas are protected.

3.5.1 – Identify and promote buildings, places, trees, gardens, landscapes and other areas of significant culture heritage value.



The *Wingecarribee Local Strategic Planning Statement* (LSPS) sets out the 20-year land use vision for the Shire, and provides a long-term planning framework to meet the economic, housing, social and environmental needs of the community.

The LSPS takes into account the State and Regional planning framework, and builds on the communities' priorities outlined in the *Community Strategic Plan* and *Local Planning Strategy* to outline how the Shire will continue to evolve in a way that protects local character, natural areas and rural landscapes in accordance with the communities' expectations. It identifies the special characteristics that contribute to the region's local identity and recognises the shared community values to be maintained and enhanced.

The LSPS outlines the following six key land use themes including:

- our environment and sustainability,
- our rural lands,
- our economy,
- our housing,
- our infrastructure and
- our place.

Each land use theme includes a set of planning priorities and actions to achieve the communities' vision for the Wingecarribee.

The LSPS identifies opportunities to improve walking trails at Berrima and will inform future strategic planning, infrastructure planning and investment decisions by Council, State Government agencies and service providers.





02 Planning & Management

Australian Standards for Walking Tracks

The Standards Australia Committee has prepared the following Australian Standards which relate directly to walking tracks to assist trail planners, designers, and managers:

- AS 2156.1, Walking tracks, Part 1: Classification and signage, and
- AS 2156.2—2001: Walking Tracks Part 2: Infrastructure Design

The Standards were first published in 2001, and like all Australian Standards, are living documents which reflect progress in science, technology, and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published.

AS 2156.1 – 2001: Walking Tracks Part 1- Classification and Signage

This Standard provides a classification system for walking tracks, guidance for the design, fabrication and use of track markers, and information signs to be used for walking tracks. The Standard also sets out guidelines for the erection of these markers and signs to ensure that while they will be readily visible, clear, and easy to read, they will not detract from the landscape. This Standard applies to outdoor areas where the environment is the focus of recreational activity.


The objective of this Standard is to provide managing authorities with guidance for walking track classification and signage in order to provide consistency of information to users of walking tracks. This is intended to minimise risk, preserve natural features, and enhance recreation opportunities associated with the use of walking tracks.

Classification of Walking Tracks





Walking tracks are graded from 1 to 6, with specific images used to illustrate each. These are outlined in Table 4. A track is to be classified according to the least developed element. In some cases (e.g. long-distance tracks) select portions of the track may be classified separately, however the overall classification will be according to the least developed/most challenging element.

Table 4 outlines key relevant information from *AS 2156.1 – 2001: Walking Tracks Part 1- Classification and Signage* for each classification/grade of trail.

Table 4: AS2156.1 Walking Tracks Classification and Signage – Guidance for Classification & Management

Classification	Description	Track Conditions	Experience Level	Risk Management Recommendation
Class 1 	No bushwalking experience required. Flat even surface with no steps or steep sections. Suitable for wheelchair users who have someone to assist them. Walks no greater than 5km.	Generally, a broad, hardened surfaced track suitable for wheelchair use. Width: 1200mm or more. Well maintained with minimal intrusions. Grades in line with AS1428 series. Steps allowed only with alternate ramp access.	Users need no previous experience and are expected to exercise normal care regarding their personal safety.	Tracks and adjacent natural and built elements to be inspected and maintained regularly. Inspection interval: 30 days or less.

02 Planning & Management

Classification	Description	Track Conditions	Experience Level	Risk Management Recommendation
Class 2 	No bushwalking experience required. The track is a hardened or compacted surface, may have gentle hill section or sections and occasional steps. Walks no greater than 10km.	Generally, a modified or hardened surface. Width: 900mm or more. Well maintained with minimal intrusions. Generally, no steeper than 1:10. Minimal use of steps.	Users need no previous experience and are expected to exercise normal care regarding their personal safety.	Tracks and adjacent natural and built elements to be inspected and maintained regularly. Inspection interval: 90 days or less.
Class 3 	Suitable for most ages and fitness levels. Some bushwalking experience recommended. Tracks may have short steep hill sections a rough surface and many steps. Walks up to 20km.	Generally, a modified surface, sections may be hardened. Width: Variable and generally less than 1200mm. Kept mostly clear of intrusions/obstacles. Gradient may exceed 1:10 but generally no steeper than 1:10. Steps may be common.	Users need no bushwalking experience and a minimal level of specialised skills. May encounter natural hazards such as steep slopes unstable surfaces and minor water crossings. Users responsible for their own safety.	Built elements to be inspected and maintained regularly. Any built facilities to be managed for public risk. Inspection interval: 6 months or less.
Class 4 	Bushwalking experience recommended. Tracks may be long, rough, and very steep. Directional signage may be limited.	Generally distinct without major modification to the ground. Encounters with fallen debris and other obstacles are likely.	Users require a moderate level of specialised skills such as navigation skills. May require maps & navigation equipment. Users need to be self-reliant, particularly for first aid/weather hazards.	Tracks to be inspected on a regular basis and after major natural events such as fires. Any built facilities to be managed for public risk. Inspection interval: 6 to 12 months.
Class 5 	Very experienced bushwalkers with specialised skills, including navigation and emergency first aid. Tracks are likely to be very rough, very steep and unmarked. Walks may be more than 20km.	Limited modification to natural surfaces and track alignment may be indistinct in places. Minimal cleaning. Debris along the track.	Users require a high degree of specialised skills, may require maps and navigation equipment. Users need to be self-reliant, particularly for first aid/weather hazards.	Tracks to be inspected on a regular basis and after major natural events such as fires. Any built facilities to be managed for public risk. Inspection interval: 6 to 18 months.
Class 6	Very experienced bushwalkers with specialised skills, including navigation and emergency first aid. No defined track.	No modification of the natural environment.	Experience in the outdoors and a high level of specialised skills/equipment required. Need to be self-reliant, particularly for first aid/weather hazards.	Tracks will not be managed for public risk. Users will be responsible for personal safety and need to exercise appropriate care.

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AS 2156.2—2001: Walking Tracks Part 2: Infrastructure Design

This Standard is intended for application to the design of new structures; however, existing structures may be assessed using the given criteria. The standard acknowledges that a considerable number of existing structures may not comply with the standard.

The design criteria are varied depending on the track class in which the structure is to be constructed and the configuration of the structure, based upon the track classifications (classes 1 to 6) outlined in AS 2156.1.

Walking track structures covered within this standard are simple structures, including boardwalks, pedestrian bridges, viewing platforms and other similar open, non-habitable structures, provided for the use of a wide range of visitors.

Management considerations for choice of the type of structure to be used and decisions made during its general specification and design will cover the dual objectives of:

- a) control of the impact of visitors, tracks, and track infrastructure on the environment.
- b) provision of access for visitors to the quality of experience they seek, while recognising the visitors' capabilities for safely accessing the points of interest.

When laying out or planning new work on a track, the choice of track class and the actual structures to be installed should consider the expected number, class of visitors and the recreational opportunities to be provided (see AS 2156.1). In deciding what structures to use it should be remembered that once a structure is in place, it may be difficult to remove without damage to the environment (e.g. a cultural site). The design of elements, choice of materials and colours of structures should cause minimal adverse visual impact on natural areas or culturally significant sites.

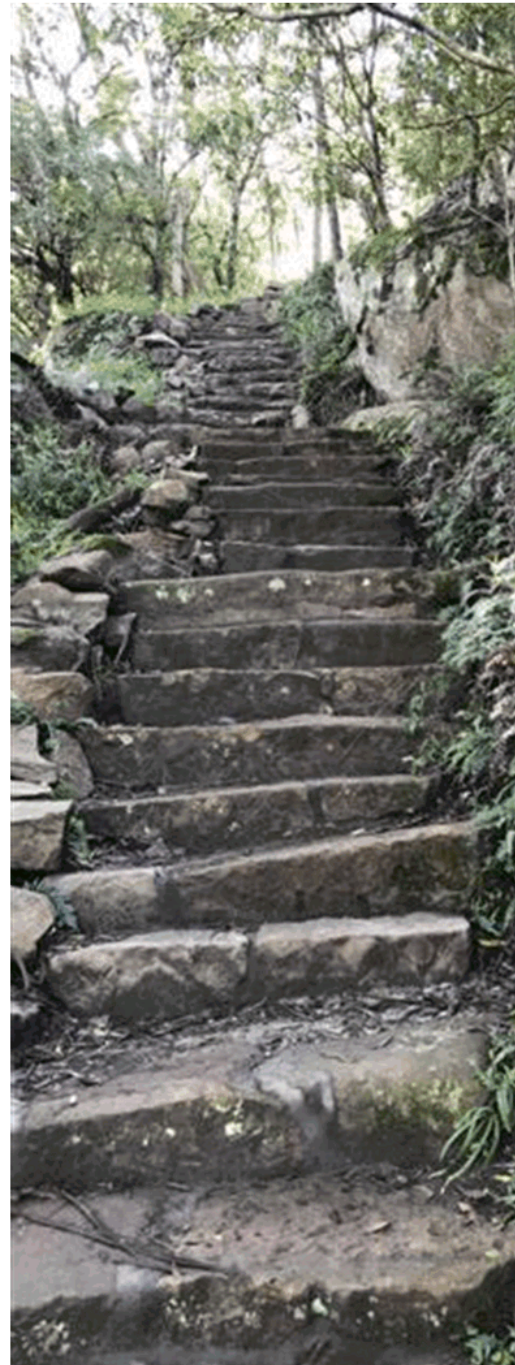


Figure 6: Trail Infrastructure (Heritage Staircase) at Heritage Quarries Circuit (, Mt Gibraltar Reserve



02 Planning & Management

Trail Signage

Signage Requirements

For the purpose of this project, recreational trail signs have been classified according to the following descriptions.

Trailhead Sign

A trailhead sign is the primary sign at the location where a user can access a trail and/or a network of trails. A trailhead is an important point of reference and is the appropriate location for associated trail infrastructure such as amenities, car parking and picnic facilities.

It is important that trailhead signs are professionally displayed, simple to comprehend & may include:

- Trail network name & map (if applicable)
- Trail name
- Trail map
- Trail grade/classification
- Trail distance & estimated time
- Trail type (i.e. loop, each way, return)
- Permitted trail user type/s (e.g. walk, bike, horse)
- Safety information (e.g. code of conduct, emergency contact information, recommended equipment, warning)
- Trail manager contact details
- Website and/or QR code with further information.

Trailhead signs can be used to enhance the trail experience through providing information about features that can be found along the trail, as well as to promote other trails in the region. Many trail users take photographs of the trailhead sign to refer to whilst using the trail, or (where cellular coverage allows) scan a QR code which provides the trail map on a personal phone/device.

A trailhead sign does not replace the requirement for signage at reserve entries noting management and safety information.

Waymarking Signs

Waymarking signs provide trail users with reassurance that they are following the correct alignment. The amount of waymarking necessary is dependent on the grade of trail and the target user group; difficult trails designed for experienced users often require less waymarking signage although these users tend to rely more on detailed signage at the trailhead. Waymarking signs are required at the beginning of a trail and at regular intervals along the route as well as at trail intersections. Where one section of alignment is used for multiple trails, all trails should be waymarked on the same signpost with corresponding colours or symbols.

Directional Signs

Directional signage is for directing users to or from the trailhead and other features, such as a nearby town, road or car park. These signs are particularly relevant at intersections where users are required to choose between a number of routes. It is usually appropriate to indicate the distance to/from the identified feature/s. Directional signage from a trail to a town can have positive economic impacts as users are more likely to impulsively visit if they are aware of the town's proximity.

Interpretation Signs

Interpretation signage conveys educational material about the natural and/or cultural heritage features along a trail. This signage is designed to attract more users to the trail, engage trail users and provide for a well-rounded trail experience. Interpretive information can be provided at a trailhead and at points of interest along a trail.

Management/Warning Signs

Management/warning signage is used to advise trail users of dangers, risks or management policies. The sign should include a statement of danger, statement of consequence, statement of precautionary actions and use an appropriate pictogram. These signs play an important role for both users and trail managers in the risk and safety management of a recreational trail.



02 Planning & Management

Signage Design and Placement

Relevant guidance from these Standards relating to signage is summarised below.

Shape:

- Shape of a directional arrow or an isosceles triangle (square background, minimum size 90mm x 90mm)

Materials:

- Made of aluminium, galvanised low carbon steel or non-toxic recycled plastic. Other materials may be suitable given that they are durable and resistant to both corrosion and fire.

Colour:

- Track markers may be any colour (recommended colours Blue B21, Ultramarine; Yellow Y14, Golden Yellow X15, Orange; Red R13, Signal Red)
- Clearly visible and be distinguishable from colours used for intersecting trails.

Finish:

- The triangle should be mounted with the apex pointing toward the direction to be followed & attached to structural elements.

Height:

- The placement of track markers is 0 – 2 metres above the ground, depending upon local conditions (e.g. terrain) and seasonal variations (e.g. vegetation).

Fabrication:

- Sympathetic with the landscape, and ensure sign will be durable, readily seen and easy to read.
- The overuse of signs, and the use of very large signs, should be avoided.

Placement:

- Minimal adverse visual impact on natural areas or culturally significant sites.

Trail Naming

Trail names play an important role in facilitating:

- Visitors to identify and understand the nature of the trail
- Management to promote and maintain the trail
- Emergency services to access the trail and identify specific locations

Trail names are to be determined by the land manager with respect to the following considerations:

Consistency

- Trail naming should be consistently approached throughout the network. A trail's name needs to be clearly determined to prevent confusion for management and users.

Relevancy:

- A trail's name should reflect the distinct natural and/ or cultural features of the trail. Interpretive signage may be used to reinforce the relevance of the trail's name whilst educating users.

Representation

- Trail names can be used to represent basic information about the trail such as location, key features and characteristics. Non-representative trail names can be misleading.

Indigenous naming of walking tracks and trail features is strongly encouraged where appropriate and supported.

02 Planning & Management

Signage Templates

A suite of trail signage templates has been developed for use in the implementation of this Strategy. An overview is provided on the following page with detailed copies included in Appendix 1.

Trailhead Sign

There are two trailhead sign templates. The first is designed to cater for Mt Alexandra which has an extensive network of trails needing two panels to exhibit the required level of information. The second is designed to be tailored to suit the other walking track networks.



Figure 7: Lake Alexandra Trailhead Sign Template – Panels 1 and 2

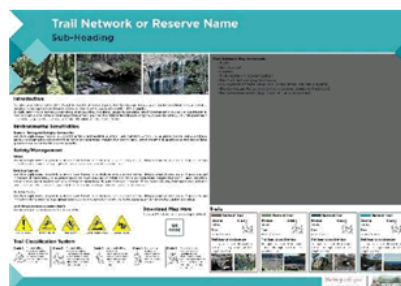


Figure 8: General Trailhead Sign Template

Interpretive Sign

Interpretive signs come in varying shapes, sizes and style. The template provides a proposed style which is consistent with other signage templates, however, this may be further tailored to suit the distinct location and enhance the 'sense of place'.



Figure 9: Interpretation Sign Template

Management/Warning Sign



Figure 10: Management Warning Sign Template

Waymarking/Directional Signage

A template for waymarkers has also been developed which broadly aligns with the style recently installed in Mt Alexandra Reserve and Mt Gibraltar Reserve. These can be tailored with colour-coded systems to each network of walking tracks.

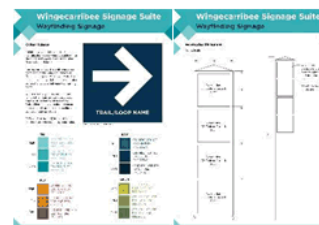


Figure 11: Waymarking Sign Template



02 Planning & Management

Trail Hierarchy

Establishing a hierarchy for walking tracks provides a guide for the level of infrastructure required to meet the needs of a trail's users and to ensure that an appropriate standard of facilities is provided.

The following hierarchy has been used to classify the walking track experiences in this project.

Regional:

A recreational walking track that offers a distinct experience and draws users from across a region beyond the Wingecarribee Shire Council area.

Regional-level trails can generate significant economic benefits to the region as important regional recreational and tourism asset.

District:

A recreational walking track that draws users from outside of the localised area/township.

Local:

A recreational walking track that caters for residents in the local area.

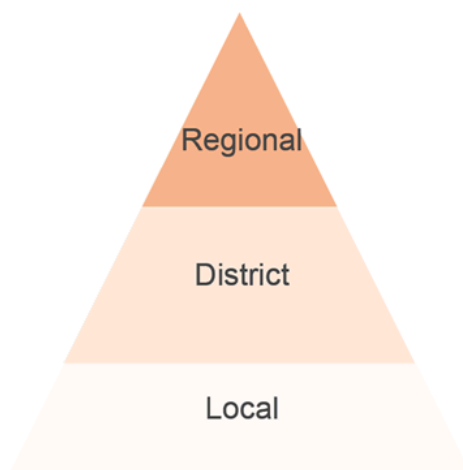


Figure 12: Trail Hierarchy

Management Models

Management and maintenance of walking tracks is often a collaborative effort between various parties. It is important to identify partners involved and to clearly define roles and responsibilities for the trail and/or trail network. These responsibilities can be clearly defined and agreed upon through the development of a Trail Management Plan and/or Management Agreement. Formalising these agreements can help address liability, which is a common constraint for trails which cross varied land tenures and for volunteer community groups taking on responsibility.

The Management Plan of each trail needs to identify partners in management and/or maintenance and clearly define roles and responsibilities. This could be agreed upon through a Memorandum of Understanding, a formal (non-legally binding) partnership agreement or a Trail Licensing Agreement through Council which can assist external landowners (e.g. private landowners or other public authorities) to manage risk and liability.

An effective management model may include the establishment of a Trail Management Committee working with local government or other public authorities under a Memorandum of Understanding for management of the trail.

The roles and responsibilities of such a Committee could include:

- Strategic management of the trail and its ongoing development.
- Development and implementation of relevant planning and policy governing the trails operation.
- Ensuring standardisation of the trail.
- Advocacy and submission to Council and other external organisations for budgeting and external funding for future development, operation, and marketing of the trail.
- Operating within and being accountable for approved budgets.
- Ensuring the quality of the trail and its facilities are maintained to the agreed service level.

02 Planning & Management

Accessible Trails

To increase rates of physical activity and the use of walking trails across the region, it is imperative that a walking trails are provided which meet a variety of accessibility levels. If trails are designed inclusively, the benefits of these recreational assets will have greater positive impact within the local community. The Australian Walking Tracks Grading System identifies that Grade 1 trails are those which are accessible to people in a wheelchair with assistance, whereas Grade 2 trails are may have gentle hill section or sections and occasional steps, but are accessible to trail walkers with no previous experience.

It is important that universal design practices are integrated where-ever practical, acknowledging that people of varying levels of fitness and ability are likely to want to challenge themselves on the trail network.

There are innovative ways of providing trail access to people of varying abilities. For example, The NSW National Parks and Wildlife Service (NPWS) has a program which provides an all-terrain wheelchair, known as a TrailRider, for visitors at national parks (NP). This program is currently operational at Kamay Botany Bay National Park, Dorrigo National Park and Kosciuszko National Park. This offers people with mobility restrictions the opportunity to experience national parks beyond Grade 1 and 2 trails.

Trails, signage and infrastructure can also be designed to cater for people who are blind, deaf or have hearing loss. For example, the Grade 1 accessible trail at Lake Alexandra Reserve provides Braille on trail signage, as well as other universal access features along the trail.



Figure 13: Use of a TrailRider in Dorrigo NP

Image source: www.nationalparks.nsw.gov.au



Figure 14: Lake Alexandra Circuit - Grade 1



02 Planning & Management

Risk Management

Risk Management is a four-step process involving:

- Step 1: Identify hazards
- Step 2: Assess risks
- Step 3: Control and manage risks
- Step 4: Review.

Users of recreational trails are exposed to various risks, many of which can be identified and mitigated through a risk assessment.

The following Risk Assessment Matrix is used to determine the overall risk rating by the Wingecarribee Shire Council. .

		CONSEQUENCES				
Health & Safety	Fatality or permanent disability or cost of injury more than \$100,000	Serious Injury or illness resulting in more than 31 calendar days absence from work or cost of injury between \$10,000 and \$100,000	Significant injury or illness > 7 days to < 31 calendar days absence from work or cost of injury between \$1,000 and \$10,000	Moderate injury or illness < 7 calendar days absence from work or cost of injury between \$100 and \$1,000	Minor injury or illness first aid needed not time lost or cost of injury less than \$100.	
Corporate Financial Loss	\$10 million to \$100 million	\$1 million to \$10 million	\$100,000 to \$1 million	\$12,000 to \$100,000	Up to \$12,000	
Natural Environment	Catastrophic & irreversible environmental damage. Full clean up not possible.	Major but reversible environmental damage. Full clean up extremely difficult and expensive	Significant local impact on or off work site requiring longer term clean up.	Moderate environmental impact. Issue affects more than just the worksite. Quick cleanup possible	Minor environmental damage. Contained on worksite. Quick clean up possible.	
Social/Cultural/Heritage		Ongoing serious social issues. Significant damage to structures/sections of cultural significance		Ongoing social issues. Permanent damage to sections of cultural significance	Minor medium term social impacts on local population. Mostly repairable	
Community/Government/Reputation/Media		Serious public or media outcry (international coverage)	Significant adverse national/media/public/Local Government attention	Attention from media and/or heightened concern by local community. Criticism by Local Government	Minor adverse local public or media attention or complaints	
Legal	V. Serious breach. Prosecution including class actions and/or potential culpability/ manslaughter implications. Loss of Licence to operate	Major breach of regulation. Major investigation by authority with litigation and/or potential criminal charges or major compensation implications	Significant breach of regulation with investigation or report to authority with possible prosecution and/or significant fine	Minor legal issues, non compliance and breaches of regulation		

		A	B	C	D	E
		Catastrophic /Fatality	Major/Serious	Significant	Moderate	Minor
LIKELIHOOD	A Almost Certain (at any time)	EXTREME	EXTREME	HIGH	MEDIUM	LOW
	B Very Likely (in most circumstances)	EXTREME	HIGH	HIGH	MEDIUM	LOW
	C Likely (may happen at some time)	HIGH	HIGH	MEDIUM	LOW	LOW
	D Unlikely (could happen)	HIGH	MEDIUM	MEDIUM	LOW	INSIGNIFICANT
	E Very Unlikely (probably wont happen)	MEDIUM	MEDIUM	LOW	INSIGNIFICANT	INSIGNIFICANT

Figure 15: Wingecarribee Shire Council Risk Matrix



02 Planning & Management

Risk Identification

Some of the identified risks associated with the audited walking tracks include:

- Bushfire
- Flooding
- Falling objects
- Unpotable water
- Bites/stings (e.g. snakes and spiders)
- Trips, slips and falls
- Unstable land formations (e.g. erosion)
- Trail user conflict
- Traffic (e.g. trails traversing on roads)
- Impacts on sensitive environments
- Unsafe built elements
- Getting lost in remote environments
- Unpredictable creek/river crossings

Trail construction & maintenance staff are also exposed to the following risks:

- Remote work
- Communication black spots
- Temperature extremes (hot/cold)
- Manual handling
- Plant and machinery
- Working at heights
- Failure to meet Work, Health and Safety requirements

The audit identified hazards on walking tracks. These are documented in Council's ArcGIS Online system, and hazards requiring action are addressed in the Implementation Plan.

Hazards have been categorised into the following types:

- Physical hazard
- Biological hazard
- Environmental hazard
- Chemical hazard
- Other hazard

The following priority rating system has been applied:

- High – urgent repairs/action required
- Medium – add repairs/works to maintenance program
- Low – monitor for changes, add to maintenance program if condition deteriorates.

Risk Mitigation

By understanding the potential risks and finding ways to minimise their impacts, Council can confidently respond should an incident occur. Key components of risk management on walking tracks are ensuring:

- users of walking tracks are aware of the risks involved in the trail they choose,
- the level of risk is kept consistent with that outlined in the trail information, and
- Council is in a position to adequately and rapidly respond to hazards such as bushfire and flooding.

Ongoing trail and infrastructure maintenance require ongoing allocations of financial and human resources. The costs associated with maintenance will vary depending on trail characteristics such as slope, weather, soil types, construction standards and usage patterns.

Trails can also be subject to natural events such as flooding and bushfires which can destroy trail infrastructure. Future maintenance costs can be alleviated through effective design and construction of trails, and proactive management involving a regular maintenance schedule.

Maintenance of trails can generally be divided into the following two categories:

- Regular inspections and simple repairs (e.g. vegetation management). This type of maintenance can be supported by well-trained and regular volunteer programs.
- Works programs to address hazards identified (e.g. erosion control or repairing built features). This will often require larger amounts of capital and human resources, which will often be undertaken by Council staff or contractors and can also be supported by volunteers under skilled supervision.

Inspections should be undertaken at a frequency in line with the inspection interval for the trail's classification level (AS 2156.1). For example, Grade 1 Accessible trails require high duty of care and so inspection intervals of 30 days or less are recommended.



02 Planning & Management

Hazard inspections should include assessments of:

- the condition of the trail surface noting erosion of or damage to the track, slippery rock or clay sections and obstructions/trip hazards on the track
- the condition of built elements
- adequacy of signage
- consideration of overhanging limbs or overgrown vegetation

The majority of trail maintenance is likely to be related to regrowth vegetation, damage to signage and accumulation of leaf litter and debris. Providing these issues are attended to early they are largely labour intensive rather than capital expensive. Resourcing such an ongoing program is crucial, and funds (or volunteers) will be required on an ongoing basis to enable maintenance work to take place. This matter requires address in Council's budget and recurrent funding opportunities. Annual maintenance costs can be kept at a minimum by ensuring that inspection and works programs stay on schedule.

An example and guidance for inspection intervals specific to the recreational walking tracks addressed in this Strategy is included in Appendix 2: Inspection Intervals.

There may be opportunity to work in partnership with the bushwalking community to identify hazards along a walking track. For example, through an online application for bushwalkers and community groups to report hazards, such as 'snap, send, solve' systems which also support asset management and hazard identification for other assets.

Bushfire and Flood Events

With high likelihood of increased frequency and severity of bushfires and floods, it is important that the associated risks are clearly identified to trail users and that mitigation measures are put in place. Associated risks include:

- Inability to escape fire or flash flooding,
- Injury during or after bushfire or flooding events, such as debris and unstable vegetation,
- Health effects from exposure to bushfire smoke or flood waters,

Mitigation of Key Risks

The following mitigation measures have been identified to enhance the safety of bushwalking in Council's bushland reserves:

- Coordinated approach to management of walking tracks, including risk management, through a dedicated role within Council.
- Regular and coordinated inspection and maintenance programs, with specific integration of post-bushfire and flood inspections.
- Closure of reserves on days of "high" risk (e.g. days at risk of bushfire or flood events).
- Clear and consistent communication of designated walking tracks and public access points.
- Regularly reviewed and updated Plans of Management Council's bushland reserves integrating trail management and maintenance requirements and management of risk to reserve users.

These measures have been integrated as actions within section 06 Implementation Plan of the Walking Tracks Strategy.

02 Planning & Management

Emergency Location Systems

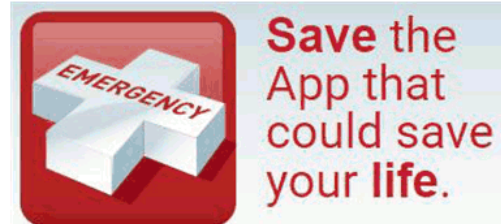
Location information challenges are particularly difficult for 'open space' locations with no set addresses such as bushland reserves. Mt Alexandra Reserve is a large reserve with extensive networks of walking tracks and fire trails. Emergency location systems can help mitigate this risk, and it is noted that aged Emergency Location Markers currently exist in Mt Alexandra Reserve, as shown in Figure 16.



Figure 16: Emergency Location Marker in Mt Alexandra Reserve

Emergency+ App

The Emergency+ app is considered the best-practice emergency location system across Australia and is endorsed by the NSW Government (Resilience NSW) and NSW emergency services agencies.



To increase the safety of reserve users, it is recommended that trailhead signage advises users to download the (free) Emergency+ mobile app. The app guides users as to when they should call Triple Zero (000) and who to call in different non-emergency situations. It also helps dial the number and shows the phone's GPS coordinates for the caller to read out to the operator.

This approach does not require on-ground emergency location infrastructure and will also increase the safety of people once they have downloaded the app and have left the reserve.

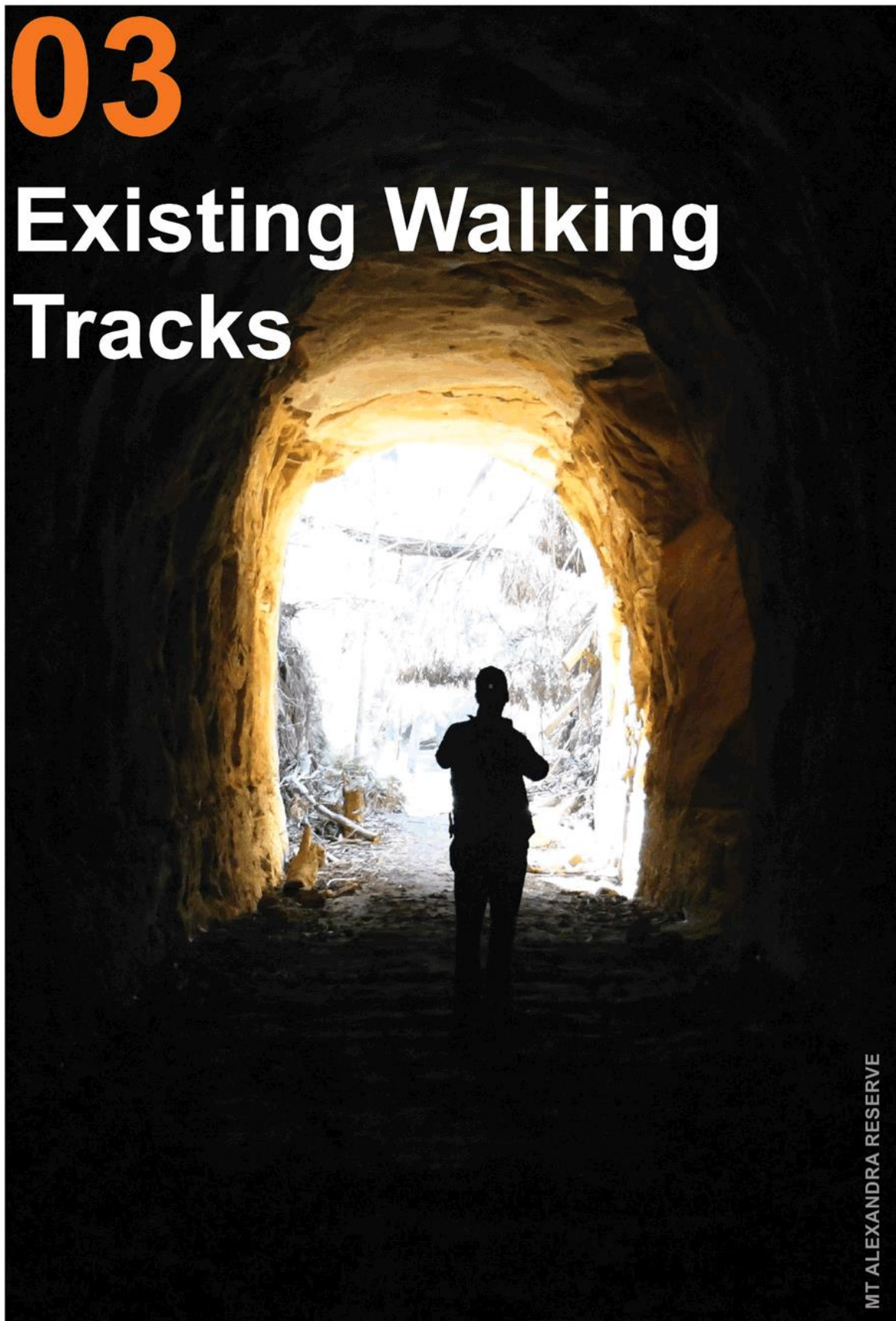
Interactive Trail Maps

Provision of trail maps and information via mobile apps allows for users to keep track of their location along the trail using GPS receivers on their mobile device. This enhances user safety. A wide range of software exist which accommodate this function such as Maps.ME, AvenzaMaps and Gaia GPS.



03

Existing Walking Tracks





03 Existing Walking Tracks

Audit Process

An on-ground audit was undertaken during May 2020 to produce ground-truthed, geo-referenced data and photographs relating to the walking tracks and associated infrastructure in the specified reserves.

This process was also supported by an extensive desktop audit of existing walking tracks and consultation with community members to guide the focus of the field work to established walking track alignments.

The data collection process aligned with Council's broader asset management system. This included use the ESRI ArcGIS Online Collector mobile auditing application which integrates into Council's system hosted on ArcGIS Online.

An example of the data interface on ArcGIS Online is shown in Figure 17: ArcGIS Online Data Capture

Point features were collected for:

- Signs
- Support infrastructure (e.g. seats, picnic facilities)
- Built features (e.g. stairs, bridge, lookout structure)
- Points of interest (e.g. viewpoints)
- Hazards (e.g. damaged infrastructure)

Associated attributes included:

- Type
- Condition
- Material
- Comments
- Priority (for Hazards only)

Line features were collected for the alignment of the walking tracks. Associated attributes included:

- Track name (if known)
- Primary use of track
- Grade/Difficulty (in line with AS2156.1)
- Condition.

The condition assessment ratings are in line with the system outlined in the Institute of Public Works Engineering Australasia's (IPWEA) *Condition Assessment and Asset Performance Guidelines*, from 1: Very Good Condition to 5: Asset Unserviceable.

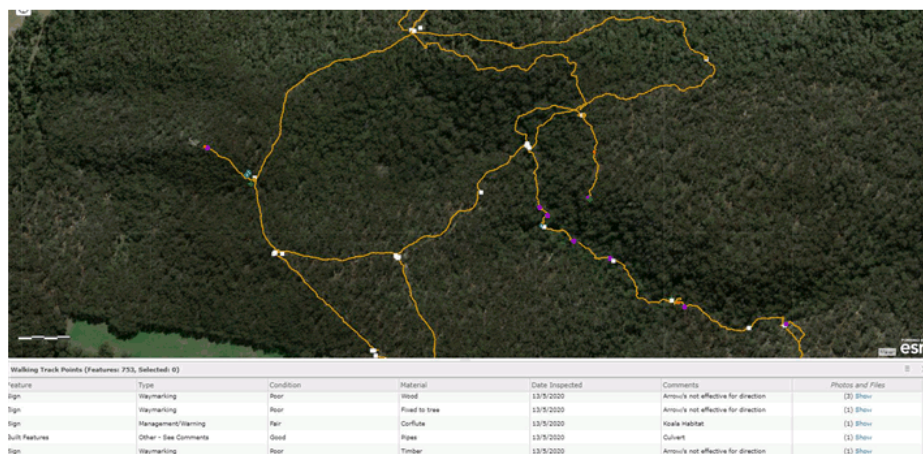


Figure 17: ArcGIS Online Data Capture



03 Existing Walking Tracks

Identified Walking Tracks

Table 5 outlines the 28 walking tracks identified and audited in the specified reserves with their grade, length, estimated time for completion, level of hierarchy and appropriate use.

While the recreational walking track experiences identified are generally suitable only for walking in their entirety, it is acknowledged that sections of these tracks may also be suitable for off-road cycling. This is particularly relevant to the sections of walking trails which utilise fire trails.

Table 5: Identified Walking Tracks – Categorised by Reserve

Trail Name	Grade	Length	Estimated Time	Hierarchy	Appropriate Use
Mt Alexandra Reserve (primary access from Box Vale Trailhead)					
Box Vale Track	3	9km return	3 hours return	Regional	Walk
Forty Foot Falls Track (Box Vale Trailhead to Falls)	4	7km return	2.5 hours return	Regional	Walk
Nattai Loop Track	5	12km loop	5 hour loop	Regional	Walk
Mt Alexandra Reserve (primary access from Lake Alexandra Trailhead)*					
Boulder Valley Track	4	3km return	1.5 hours return	Regional	Walk
Forty Foot Falls Track (Lake Alexandra to Falls)	4	7km return	2.5 hours return	Regional	Walk
Mountain Circuit	5	10km loop	5 hour loop	Regional	Walk
Katoomba Lookout Trail	3	1.5km return	1 hour return	Regional	Walk
Sixty Foot Falls Track	4	3km return	1.5 hours return	Regional	Walk
Big Rock Link Trail	4	2km each way	30 mins each way	Regional	Walk
Lake Alexandra Reserve					
Lake Alexandra Circuit	1	600m loop	15min loop	Regional	Walk
Mount Gibraltar Reserve					
Bowral Lookout Trail	1	250m return	10 min return	Regional	Walk
Heritage Quarries Track	3	1.5km loop	20min loop	Regional	Walk
Rim Track	3	2.5km loop	45min loop	Regional	Walk
Reservoir Ravine Track	4	3km loop	1.5hours loop	Regional	Walk
Gibbergunyah Reserve					
Geebung Track	3	4km return	1.5 hours return	District	Walk
Gibbergunyah Walk	4	6.2km return	2.5 hours return	District	Walk
The Glen Track	4	1.1km each way	30 mins each way	District	Walk
Glow Worm Glen (Bundanoon Access)					
Glow Worm Glen - William St Access**	3	600m each way	N/A - access to nature reserve trail	Regional	Walk
Governors Road Walking Trail	2	15mins each way	600m each way	Local	Walk



03 Existing Walking Tracks

Trail Name	Grade	Length	Estimated Time	Hierarchy	Appropriate Use
Stone Quarry Walk Reserve (Berrima)					
Stone Quarry Walk	3	650m loop	30 min loop	District	Walk
River Bend Reserve and Berrima River Reserve (Berrima)					
Berrima River Walk	2	3.6km return	1 hour return	District	Walk
Lambies Well Walk	2	900m each way	15min each way	District	Walk
Berrima Weir Reserve					
Berrima Weir Trail	2	2.8km return	45 min return	District	Walk/Bike
Hammock Hill Reserve					
Unnamed Trail 1	2	1.8km return	30 mins return	Local	Walk
Unnamed Trail 2	3	2.5km return	40 mins return	Local	Walk
Mansfield Reserve					
Wallaby Track	2	2km loop	30 min loop	Local	Walk
Wombat Track	2	1.5km loop	20 min loop	Local	Walk
Bong Bong Common (Link to Cecil Hoskins Nature Reserve)					
Cecil Hoskins Link Track	2	170m each way	N/A - access to nature reserve	District	Walk

*Incorporates a local access point from Iron Mines Oval

**Trail not ground-truthed due to access restrictions after bushfire damage

Table 6 outlines the potential walking tracks which are proposed for formalisation in the specified reserves with their grade, length, estimated time for completion and level of hierarchy.

Table 6: Proposed/Potential Walking Tracks - Categorized by Reserve

Trail Name	Grade	Length	Estimated Time	Hierarchy
Glow Worm Glen (Bundanoon Access)				
Governors Street Walking Trail (Potential Extension) [^]	N/A [^]	1km each way	15mins each way	District
River Bend Reserve and Berrima River Reserve (Berrima)				
Berrima River Walk (via Proposed Loop) [^]	N/A [^]	3.6km return	1 hour return	District
Berrima Weir Reserve				
Berrima Weir (Proposed Extension) [^]	N/A [^]	2.2km each way	30 mins each way	District
Welby Weir Reserve				
Welby Weir Track [^]	N/A [^]	1km return	10mins return	Local
Hammock Hill Reserve				
Unnamed Trail 3	1 [^]	550m return	10mins return	Local

03 Existing Walking Tracks

Figure 18 provides a photo montage of a selection of the trailhead, directional, waymarker, management/warning and interpretation signs, as well as picnic infrastructure and seating. A complete record of trail alignment and infrastructure is contained within the ArcGIS Online System, with further photographs of each category provided in Appendix 4.

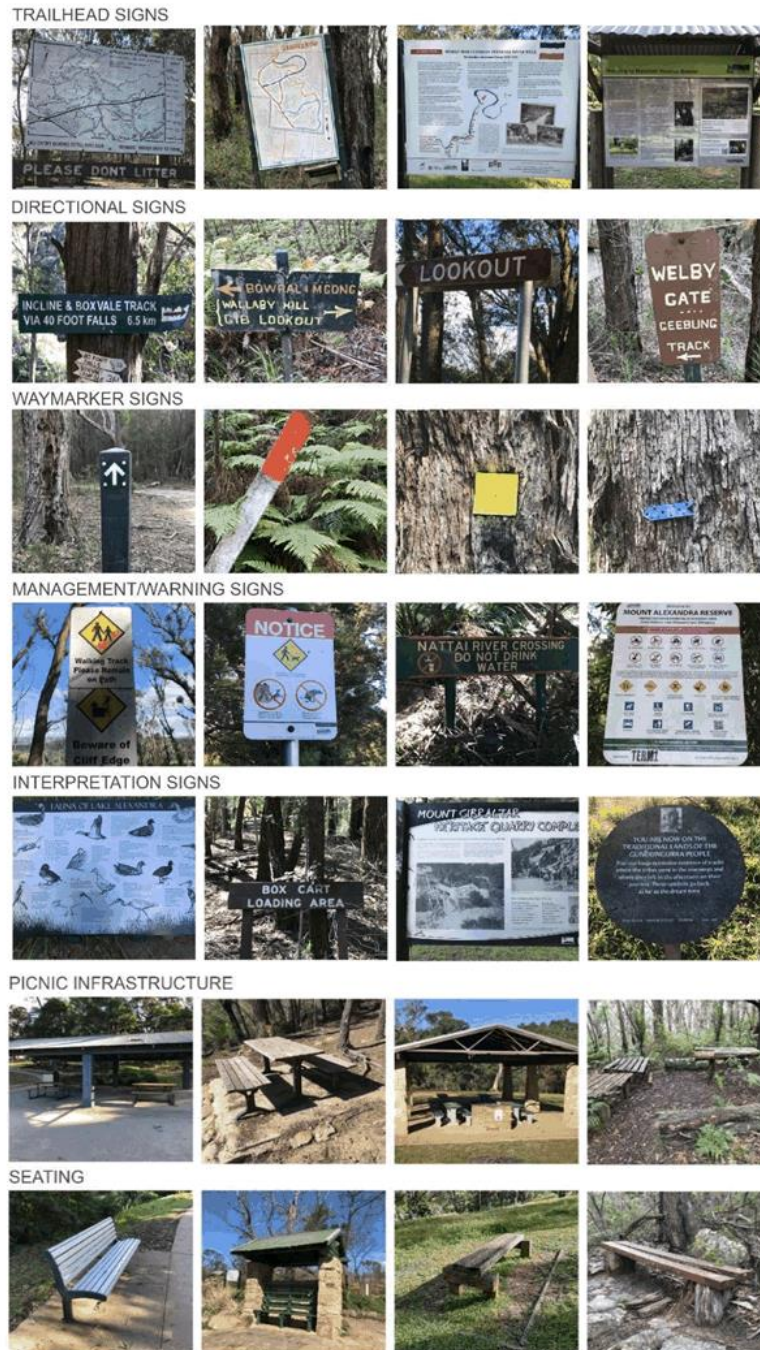


Figure 18: Examples of Signage and Infrastructure





04 Consultation

Process

The development of the Wingecarribee Shire Council Walking Tracks Strategy was informed by community consultation and stakeholder engagement. This involved an internal stakeholder meeting (with WSC staff), a meeting with targeted key external stakeholders, an online community workshop and a YourSay Wingecarribee webpage which includes an online community survey, mapping tool and forum.

Information was provided to stakeholders and the wider community through the distribution of an information flyer (Figure 19), weekly circular, Council’s website and social media.. A *Your Say Wingecarribee* webpage was established as the project’s community engagement hub.



Figure 19: Project Information Flyer

Findings

The *Internal Stakeholder Meeting* was attended by 14 Wingecarribee Shire Council staff and discussed site specific information relating to each of the reserves. The discussion focused on the existing trails and usage, access, heritage/biodiversity, and key opportunities/constraints. Key themes of the meeting included:

- Lack of adequate trail signage/promotional materials
- Improving connections/linkages
- Existing infrastructure
- Considering the sensitive environment
- Tourism opportunities
- Extensive heritage (Aboriginal & non-Aboriginal) associated with the trails

The *Key Stakeholder Meeting* was held with representatives from the fields of education, bushwalking, birdwatching, national parks, parkrun, and cycling. Key themes of this meeting included:

- Varying track maintenance levels
- Improved connections/linkages
- Lack of adequate trail signage/promotional materials
- Three peaks trail opportunity (Mt Alexandra, Mt Gibraltar & Gibbergunyah)

The *Community Workshop* meeting was attended by approximately 25 community members. The key themes of discussion included:

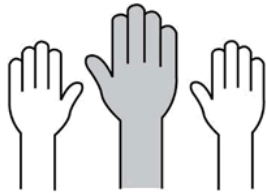
- Variance in trail maintenance levels
- Lack of adequate trail signage/promotional materials
- Enhancing trail linkages
- Opportunity to create new extensions to existing trails to improve experience
- Ensuring developers join up areas
- Vision – chance to develop an integrated trails network throughout the Shire.

Overall, the top three issues relating to walking tracks in the Shire’s reserves were the lack of signage and track maintenance, and inadequate trail information and promotional materials.

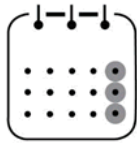


04 Consultation

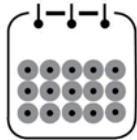
Community Online Survey



137
RESPONSES



75% USE WALKING TRACKS AT LEAST ONCE WEEKLY



31% USE WALKING TRACKS DAILY

TOP MOTIVATIONS TO USE WALKING TRACKS:



1. EXERCISE / PHYSICAL HEALTH



2. BEING IN NATURE



3. MENTAL WELLBEING



4. SOCIALISING / SHARING EXPERIENCES



5. WALKING A DOG

RATING OF WALKING TRACK EXPERIENCES AS 'EXCELLENT' OR 'GOOD'

★	41%	MT ALEXANDRA RESERVE
★	72%	LAKE ALEXANDRA
★	47%	MT GIBRALTAR RESERVE
★	34%	GIBBERGUNYAH RESERVE
★	73%	BERRIMA RIVER RESERVE
★	42%	BERRIMA WEIR RESERVE
★	57%	STONE QUARRY WALK
★	55%	HAMMOCK HILL RESERVE
★	47%	MANSFIELD RESERVE

LEVEL OF AGREEMENT

👍	69%	Definitely agree The Shire's provision of recreational walking tracks are highly valued by the community
👍	46%	Somewhat agree Recreational walking tracks managed by the Shire are generally in good condition
👎	60%	Definitely disagree or Somewhat disagree Recreational walking tracks across the Shire are generally well connected
👎	70%	Definitely disagree or somewhat disagree Signage is sufficient to meet the needs of recreational walkers
👎	72%	Definitely disagree or somewhat disagree Recreational walking tracks within the Shire are well promoted
👍	42%	Somewhat agree Recreational walking tracks within the Shire are safe
👍	32%	Somewhat agree or definitely agree Recreational walking tracks within the Shire are accessible and welcoming to visitors, and people who are new to bushwalking.



04 Consultation

POSITIVE FEEDBACK

+ "Wonderful walking tracks great scenery around the Box Vale Trail".

"It is great to have such a variety of tracks close to home". +

+ "Our shire has amazingly beautiful mountains, valleys, and rivers. There are some excellent trails that can take you to spectacularly beautiful places!".

"Lots of potential for some of these reserves for both local exercise and for visitor destinations". +

+ "Berrima campgrounds is a particular standout with the plaques explaining the history of the areas".

"We have so many fantastic trails in the shire. Maintenance and expansion will only make it even better". +

+ "Wonderful locations, not crowded, great for supporting your mental wellbeing".

"There are so many possibilities for great walking that the highlands could become a destination for hikers". +

ISSUES

"Lack of signage and maps is a huge issue, especially if you are unfamiliar with the area". -

- "Sometimes it is hard to find the way. Often signs are broken or unclear. More signage is needed and the signs need to be maintained regularly".

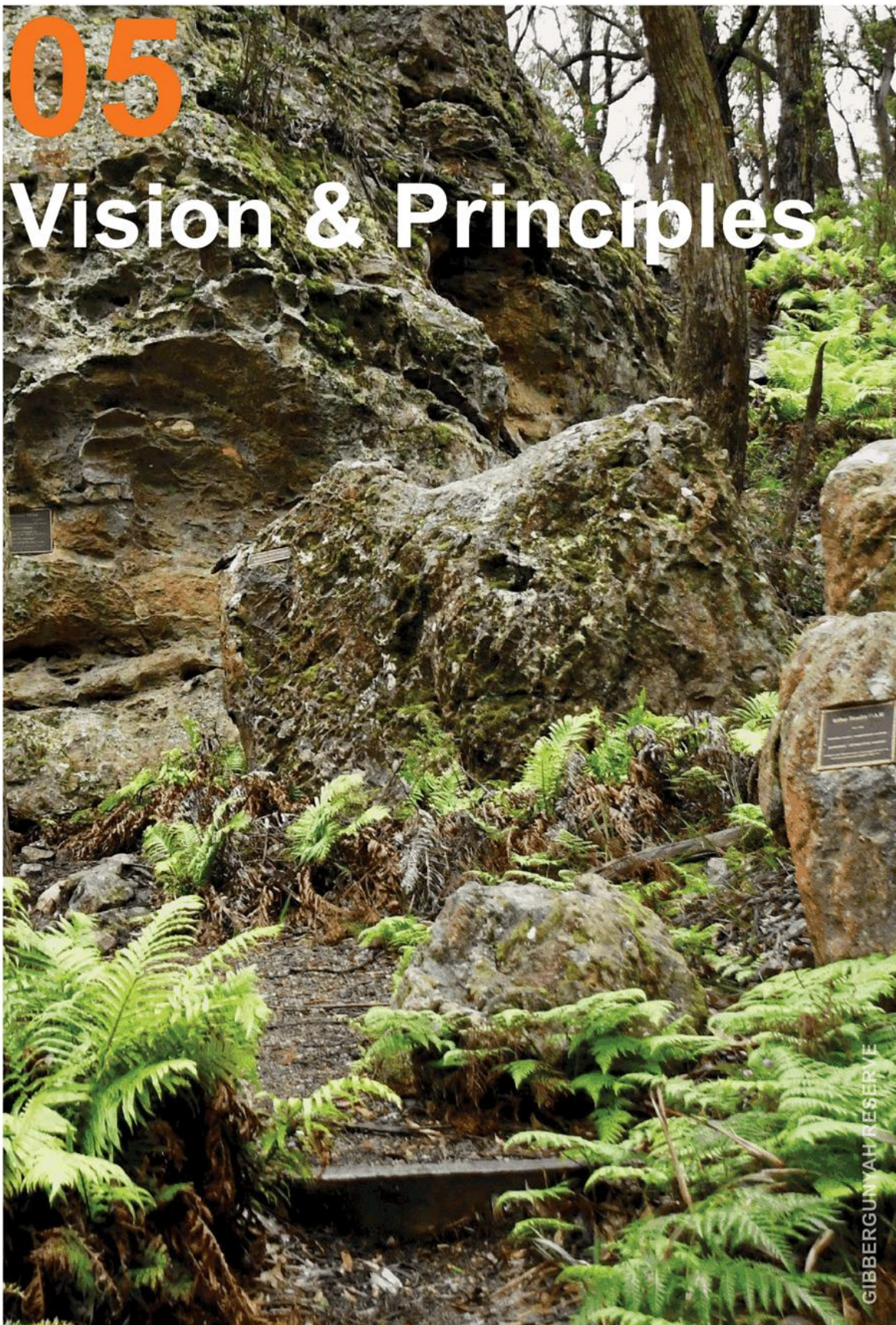
- "The main issue is signage, and the need to improve it. For example, Mount Alexandra has some great walks but there is limited and/or faded signage so if you don't have a map it can be difficult to know where you should be going".

- "There appears to be no maintenance of walking tracks, many steps are missing and some signage is missing or incorrect".

- "Poor walking track maintenance (vast number of trails). Poor signage, having found visitors to the area being in the completely wrong area in which they thought they had been heading".

- "I suspect many residents have no knowledge of the various walking tracks available - perhaps a brochure/map would be helpful".

- "The walking tracks and riding tracks in the Southern Highlands are so beautiful, and are such an attraction to the area. I would just like to see more maintenance of some of the tracks".





05 Vision and Principles

Planning Pyramid

The establishment of a common vision for walking tracks across the Shire provides a goal for Council, other organisations and the wider community to coordinate initiatives towards.

As illustrated below, the vision facilitates the development of associated strategic outcomes, which in turn provide the framework for the development of Strategies (specific approaches to achieve the strategic outcomes and fulfill the vision).

Individual actions are then identified to deliver on each of the strategies and address the relevant issues and opportunities identified through the research, on-ground audits and consultation.

Utilising this approach produces a clear and actionable implementation plan to deliver the overall vision.



Figure 20: Strategic Planning Pyramid

Vision

The following vision has been developed, based on the findings of research, on-ground audits, and consultation, to reflect the ultimate goal for walking tracks in the Wingecarribee Shire.

The vision for walking tracks on Council owned or managed land is:



A cohesive network of walking tracks that offers locals and visitors the opportunity to confidently explore the Southern Highlands, immersing themselves in the region's rich biodiversity, proud heritage, and rugged landscapes.



05 Vision and Principles

Strategic Outcomes

To deliver the vision, the following series of strategic outcomes have been developed.

A: Integrated Planning & Management

Underpinning a sustainable, integrated, and accessible network of walking tracks is a strategic framework and coordinated approach through collaboration with key stakeholders, prioritised investment and appropriate levels of resources.

B: Clearly Defined, Safe, Sustainable & Accessible Walking Tracks

Initial focus on enhancing existing walking tracks to provide clearly defined, safe, sustainable, and accessible opportunities for recreational walking in natural environments.

C: Information, Promotion and Marketing

Provision up-to-date, consistent, and reliable information relating to walking tracks to enable walkers to confidently explore the Southern Highlands, and for use in marketing and promotion of the experiences offered across the region.

D: Management and Maintenance

The ongoing success and sustainability of recreational walking tracks is dependent on effective management and regular maintenance coordinated by Council.

E: Community, Tourism & Economic Development

Significant community, tourism, and economic development opportunities are available through having a clearly defined and well managed network of walking tracks across the Shire.

Principles

The following principles are broadly based on the best-practice guidelines and have been tailored to guide the planning and management of walking tracks in the Wingecarribee Shire.

These principles underpin the concepts for each reserve and strategies and actions which are detailed in Section 06 Implementation Plan.

5. **Sustainable**
Walking tracks that are planned, managed and maintained to be socially, economically, and environmentally sustainable.
6. **Diverse**
Walking tracks that offer opportunities accessible to a diverse range of people and showcase the region's diverse range of landscapes, environments, and historic features.
7. **Safe**
Walking tracks that are safe and manage risk while maintaining the opportunity for walkers to undertake challenging experiences in the natural environment.
8. **Collaborative**
Effectively and efficiently manage walking tracks through collaborative partnerships with stakeholders.

06 Implementation Plan





06 Implementation Plan

Prioritisation

A prioritised implementation plan has been prepared to enable a staged approach to the enhancement of walking tracks across the Shire.

Strategies have been prioritised as 'High', 'Medium', or 'Low', based on:

- **Benefit:** Overall benefit to the region and community (social, environmental, economic).
- **Need/Demand:** field observation, requirement to mitigate existing levels of risk, consultation findings, contribution to broader Council objectives.
- **Feasibility:** project size, resource requirements/cost, social, economic or environmental constraints, likelihood of successful implementation.
- **Location:** Proximity to residential populations, proximity to existing trails networks, identified gaps in current provision, connectivity, proximity to significant visitor/tourist attractions.

It is anticipated that implementation of many actions the Recreational Walking Tracks Strategy will include further consultation with stakeholders and the wider community. Levels of community interest in a project should further inform prioritisation. A potential project that generates a high level of public interest and is considered to be relatively easy to implement at reasonable cost should be prioritised above a project which requires substantial funding, has significant constraints and/or limited public interest.

Indicative Timeframes

Actions have been identified with indicative timeframes acknowledging that it is not feasible to deliver all of the identified actions at the same time. Timeframes are indicated as follows:

- **Immediate:** 2020/21
- **Short:** 2021/22 - 2023/24
- **Medium:** 2024/25 - 2026/27
- **Long:** 2027/28 - 2029/30

These timeframes should be reviewed periodically acknowledging that the schedule of implementation will be influenced by funding priorities. The Recreational Walking Tracks Strategy should be comprehensively reviewed and updated in 2030.

Key projects requiring initial feasibility studies, design development and/or cross-agency collaboration will likely take multiple years. Some actions will be reliant on the successful completion of other actions.

Cost Estimates

An estimate of the resources required to implement each action has been identified to inform Council with its budget processes. These are broad estimates and should be reviewed prior to implementation or as part of annual business and budget planning.

The following indicative cost estimates have been used in the Strategy & Action Plan:

- **Low:** <\$50,000
- **Medium:** \$50,000 - \$100,000
- **High:** \$100,000 - \$500,000

An Order of Probable Costs for the capital works components has been prepared by Rider Levett Bucknall Quantity Surveyors to inform Council's budgetary processes. This is included as Appendix 2.

Note: Costs indicated with an asterisk (*) are improvements to the overall reserve and not specific to the trail network (e.g. road entrances).

Partners

Partnerships will be required for the implementation of this Strategy and ongoing trail management and maintenance. Partnerships will be especially crucial where complexities surround the planning and development of recreational walking tracks. For example, those associated with land tenure, cross-boundary projects and those involving multiple government departments or conflicting aspirations of various stakeholder groups.

Key partners are likely to include:

- NSW National Parks and Wildlife Service (NPWS)
- Bushcare, Landcare and Rivercare Groups
- Crown Lands
- Traditional Owners
- Sydney Water
- Neighbouring Local Governments
- Community Groups
- Southern Highlands Welcome Centre
- Destination NSW
- Private Land Owners
- Developers

Funding

A range of external funding sources to support the development of recreational facilities, such as walking tracks, are potentially available for the implementation of the Strategy. Further details are provided in Appendix 3.



06 Implementation Plan

Overview

The strategic outcomes and strategies are summarised below, and detailed over the following pages.

STRATEGY		PRIORITY
STRATEGIC OUTCOME A: Integrated Planning & Management		
A1	Implement an integrated framework for planning and management of recreational walking tracks in the Wingecarribee Shire Council area.	High
STRATEGIC OUTCOME B: Clearly Defined, Safe, Sustainable & Accessible Walking Tracks		
B1	Focus on the enhancement of existing and potential regional level walking tracks that contribute to the the Southern Highlands' position as a renowned destination for outdoor and nature-based recreation.	High
B2	Enhance the network of existing recreational walking tracks within Mt Alexandra Reserve accessible from the Box Vale Trailhead to provide well defined and safe, yet challenging, opportunities for bushwalking as well as conservation of the environment.	High
B3	Enhance the network of existing recreational walking tracks within Mt Alexandra Reserve accessible from the Lake Alexandra Trailhead to provide well defined and safe, yet challenging, opportunities for bushwalking as well as conservation of the environment.	High
B4	Enhance Lake Alexandra Reserve to provide a high quality regional-level trailhead precinct and to continue to provide an accessible Grade 1 Walking Trail.	High
B5	Enhance the network of existing recreational walking tracks within Mt Gibraltar Heritage Reserve to provide for recreational use, on loop trails where possible, while prioritising conservation of the environment and heritage.	Medium
B6	Formalise and enhance walking tracks within Gibbergunyah Reserve recreational use as well as conservation of the environment.	Medium
B7	Reinstate access to Glow Worm Glen from various local access points in Bundanoon with walking tracks offering opportunities for recreational use as well as conservation of the environment.	Medium
B8	Progressively enhance Stone Quarry Walk to provide a well defined walking track offering opportunities for recreational use as well as conservation of the environment.	Medium
B9	Progressively enhance the Berrima River Walk and Lambies Well Walk to provide well defined walking tracks offering opportunities for recreational use, showcase of historical significance and conservation of the environment.	Medium
B10	Establish a well defined recreational walking track in Berrima Weir Reserve to provide opportunities for recreational use as well as conservation of the environment	Low
B11	Progressively enhance Hammock Hill Reserve to provide formalised walking tracks offering opportunities for recreational use as well as conservation of the environment	Low
B12	Progressively enhance Mansfield Reserve to provide formalised walking tracks offering opportunities for recreational use as well as conservation of the environment.	Low
B13	Develop Welby Weir Reserve for provision of a formalised walking track along Nattai Creek offering opportunities for recreational use as well as conservation of the environment.	Low
B14	Enhance connectivity for walkers between Bong Bong Common and Cecil Hoskins Nature Reserve.	Low
STRATEGIC OUTCOME C: Information, Promotion & Marketing		
C1	Provide consistent & reliable signage, maps & supporting information for walking tracks.	High
STRATEGIC OUTCOME D: Management & Maintenance		
D1	Clearly define management structures and maintenance schedules for walking tracks.	High
STRATEGIC OUTCOME E: Community, Tourism & Economic Development		
E1	Use trail development and provision as a tool for economic and community development.	High



06 Implementation Plan

STRATEGIC OUTCOME A: INTEGRATED PLANNING & MANAGEMENT

STRATEGY

A1 Implement an integrated framework for the planning and management of recreational walking tracks in the Wingecarribee Shire Council area.

PRIORITY

High

RATIONALE

This Recreational Walking Tracks Strategy provides a framework for the ongoing the identification, maintenance and enhancement of authorised walking tracks and trails.

It is important that an integrated approach to allow for coordinated efforts between various government agencies (e.g. NSW National Parks and Wildlife Service), community groups (e.g. bushwalking clubs, bushcare groups) and individual trail users. Integrated recreational trail networks offer synergies to achieve positive outcomes across various sectors such as health, recreation, transport and conservation. Trail management and maintenance, including risk management, need to be adequately resourced to ensure effectiveness.

Risk management is an important component of trail management, and it is important that this is integrated into Council's trail management and maintenance systems.

It is acknowledged that the scope of this Recreational Walking Tracks Strategy covers specific reserves and that additional opportunities for the enhancement of recreational walking tracks exist across the Shire. The community would also benefit from broader strategic planning for recreational trails, including those for mountain bike riding, water-based trail activities (e.g. canoeing), horse riding, rock climbing and walking tracks which have not been included in the scope of this project. There are various opportunities which require further investigation for these recreational trail users, such as the re-purposing of the Welby Tip into a mountain bike park (subject to Environmental Protection Authority approval).

	ACTION	TIMEFRAME	COST
A1.1	Establish a Recreational Trails Working Group to manage the implementation of the Recreational Walking Tracks Strategy with representation from relevant departments within Council and relevant stakeholders engaged as required (i.e. Bushcare groups, state government departments, user groups). Project managers are to be included as projects are added to the capital works program. Refer also Action D1.1.	Short	Low
A1.2	Establish a Trail Stewardship Program which builds capacity and encourages volunteers to meaningfully and continually contribute to trail management and maintenance activities, while managing risks of such activities.	Short	Low
A1.3	Continue to strategically plan for recreational tracks and trails across the region with the preparation of a Recreational Trails Strategy (including audit) incorporating volumes for mountain bike riding, water-based trail activities (e.g. canoeing), horse riding, rock climbing and walking tracks which have not been included in the scope of this project.	Short	Medium
A1.4	Develop a Trail Corridor Protection Policy for Council which ensures that requests for the closure of Council-controlled land (i.e. road reserves) are considered in the context of the existing and potential future trail network, preventing loss of public land which provides strategic connections for recreational trails.	Short	Low
A1.5	Encourage, advocate and seek funding to support the implementation of the Recreational Walking Tracks Strategy.	Ongoing	Low
A1.6	Ensure that all of Council's recreational walking track signage, infrastructure, maintenance and communication adhere to the following Australian Standards: <ul style="list-style-type: none"> AS2156.1 <i>Walking Tracks Part 1: Classification and Signage</i> AS2156.2 <i>Walking Tracks Part 2: Infrastructure Design</i>. 	Ongoing	Low
A1.7	Integrate trail audits and assessments into Council's regular ongoing program of works and inspections, in line with the inspection intervals for each grade outlined in AS2156.1. Undertake trail inspections using the ArcCollector process created and used for the development of the Recreational Walking Tracks Strategy which aligns with Council's asset management system.	Ongoing	Low
A1.8	Incorporate initiatives for the enhancement of walking tracks into broader community planning (e.g. strategic plans, development plans, open space plans, transport plans) and Council's budgeting processes.	Ongoing	Low



06 Implementation Plan

STRATEGIC OUTCOME B: CLEARLY DEFINED, SAFE, SUSTAINABLE & ACCESSIBLE WALKING TRACKS

STRATEGY

B1 Focus on the enhancement of existing and potential regional level walking tracks that contribute to the The Southern Highlands' position as a renowned destination for outdoor and nature-based recreation.

PRIORITY

High

RATIONALE

Outdoor and nature-based recreational experiences are the top tourism driver for the Southern Highlands and offer the opportunity to further market the region for activities such as bushwalking, which provide a distinct 'customer experience'. The Southern Highlands Welcome Centre in Mittagong reports frequent queries from visitors about bushwalking opportunities, particularly those related to the renowned Box Vale Track. Mt Alexandra provides for a range of trail-based activities, with multiple regional-level trail experiences offered, and has the potential for further development as a regional trails hub.

Other regional walking trail experiences exist at Berrima, Mt Gibraltar and at Glow Worm Glen in Bundanoon. It is important that Council focuses on enhancing these trails to a standard which enables them to be key attractions for the region.

The Southern Highlands has the valuable opportunity to further capitalise on its close proximity to the Sydney tourism market, as a sought-after destination for bushwalking with experiences on offer to suit a variety of interests, challenges and abilities. In order to confidently promote the impressive range of walking experiences on offer, there is a need for Council to define and communicate the experience on offer, provide effective trail signage, enhance infrastructure along the tracks and manage risks associated with the walking tracks.

A concept for a packaged trail experience incorporating the walking trails of Mount Alexandra, Mount Gibraltar and Gibbergunyah Reserve is known colloquially as the 'Three Peaks of the Southern Highlands'. It is proposed that this experience incorporates key iconic lookouts across these reserves, along Katoomba Lookout Trail (Mt Alexandra Reserve), The Rim Track (Mt Gibraltar Reserve) and Geebung Track (Gibbergunyah Reserve). There is potential to formalise this experience for promotion once trail upgrades have occurred.

Wollondilly Council has proposed an iconic new 316km walk known as the Great Burratorang Valley Walk which incorporates trails within Mt Alexandra Reserve as a key link between destinations such as Mittagong and Katoomba. This concept is likely to utilise trails within Mt Alexandra Reserve.

Once walking tracks are enhanced to a level appropriate for promotion, the development of marketing and informational materials such as maps and brochures (printed and online) will enable the region to confidently capitalise on this opportunity while managing the risks associated with some of the challenging experiences on offer.

ACTION		TIMEFRAME	COST
B1.1	Recognise the Mount Alexandra trails network as the focus for a regional trails hub defining it as a multi-disciplinary key trail activity area catering for a variety of interests, challenges and abilities (i.e. bushwalking, mountain biking, rock climbing, orienteering, bird watching, nature appreciation, heritage features). [Refer B2, B3 and B4].	Short	-
B1.2	Recognise the existing walking tracks at Mt Gibraltar Reserve as a key focus area for trail enhancements to showcase the region's distinct ecological and heritage values. [Refer B5].	Short	-
B1.3	Recognise the existing walking tracks at Berrima as a key focus area for trail enhancements to showcase the town's distinct heritage values. [Refer B8, B9].	Short	-
B1.4	Recognise Council's role in providing access from Bundanoon to Glow Worm Glen and the wider the trail network within Morton National Park. [Refer B7].	Short	-
B1.5	Support the proposed concept of the Great Burratorang Valley Walk incorporating walking trails within Mt Alexandra Reserve with a key trailhead at Lake Alexandra.	Medium	Low
B1.6	Develop a concept for the Three Peaks Trail with connectivity, off-road where possible, between key iconic lookouts surrounding Mittagong via Katoomba Lookout Trail (Mt Alexandra Reserve), The Rim Track (Mt Gibraltar Reserve) and Geebung Track (Gibbergunyah Reserve).	Medium	Low



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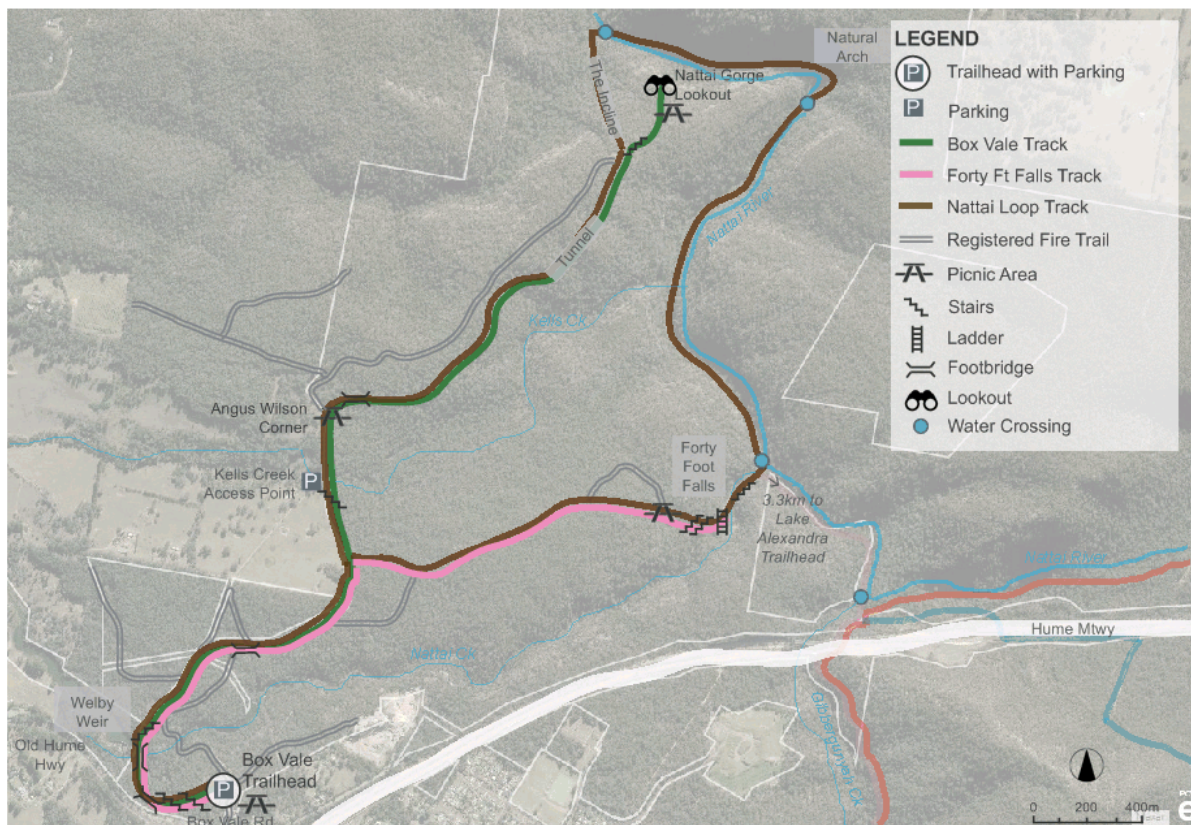
06 Implementation Plan




MT ALEXANDRA RESERVE (BOX VALE TRAILHEAD)

Mt Alexandra Reserve is a very large bushland reserve covering an area of approximate 11,000ha located between Welby, Mittagong and Colo Vale. The raised Hume Motorway runs through the reserve, however trails and ecology remain connected underneath. The reserve is a popular destination for bushwalking and has an interesting history, particularly known for its features relating to its historical use for coal mining.



CONCEPT PLAN



PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Box Vale Track	Walk Only	Grade 3 	3 hours RETURN	9km RETURN	Regional
Forty Ft Falls Track <i>Box Vale Trailhead to Falls</i>	Walk Only	Grade 4 	2.5 hours RETURN	7km RETURN	Regional
Nattai Loop Track	Walk Only	Grade 5 	5 hours LOOP	12km LOOP	Regional



06 Implementation Plan

STRATEGY

B2 Enhance the network of existing recreational walking tracks within Mt Alexandra Reserve accessible from the Box Vale Trailhead to provide well defined and safe, yet challenging, opportunities for bushwalking as well as conservation of the environment.

PRIORITY

High

RATIONALE

- Highly valued and used recreational area, particularly the renowned Box Vale Track.
- Opportunity to promote as one of the key outdoor recreational destinations in the Shire.
- Opportunity to provide connectivity via existing trail alignments for the The Great Burragorang Valley Walk which is a proposed regional, multi-day trail concept linking Mittagong to the Blue Mountains.
- Many requests for improved safety and wayfinding. Reports of walkers frequently getting lost.
- Original trail names are generally representative of trail experiences although promotion of trail names and routes is very inconsistent across various information sources.
- Existing walking trail network not clearly distinguished from extensive fire trail network.
- Proposed walking trail network uses existing narrow walking tracks where possible and shares some sections with fire trails.
- Box Vale Trailhead requires upgrades to provide a regional-level trailhead precinct with adequate car parking capacity and support infrastructure (i.e. picnic facilities, amenities). Plans to be developed with consideration of land tenure constraints and incorporation of future plans for recreation at Welby Weir.
- Existing trailhead sign is aged, misleading, not consistent with other trail information and does not meet Australian Standard 2156.1.
- Existing reserve entry signs from Hume Highway and Box Vale Road are aged/damaged.
- Management/warning/caution signs are in varying condition and of varying styles which do not meet Australian Standard 2156.1. New and revised caution signs required to manage risks at hazardous trail features (i.e. the Incline, ladders/cliffs, Forty Foot Falls, intersections of Grade 5 trail and creek crossings along Nattai Loop Track).
- Requirement for engineering assessment of cable along 'The Incline' on Nattai Gorge Loop.
- Broken risers on stairs and ladders leading to Forty Foot Falls.
- Safety fencing at Nattai Gorge Lookout has exposed cement footings.
- Safety fencing at Forty Foot Falls is damaged.
- Footbridge north of Angus Wilson Corner has dislodged handrail.
- Picnic table chair set west of Forty Foot Falls has exposed concrete base.
- Various styles of waymarkers and directional signs existing across trail network in varying condition - noted to be contradictory and misleading (e.g. 'No signage beyond this point' is noted at top of 'The Incline' and at picnic area west of Forty Ft Falls, despite signage remaining beyond).
- Directional signage to Mittagong Pool from bottom of 'The Incline' is misleading.
- New waymarking system is being installed and this style is generally supported (i.e. arrow plaque on posts). Colour-coded plaques/arrows corresponding with trailhead map is proposed.
- Colours used on Concept Map broadly correspond with historic colour-coding system.
- Existing interpretation signage of varying styles is generally in poor condition (e.g. 100m tunnel, The Boulder Cutting, Nattai Gorge Lookout, The Incline, Box Cart Loading Area). Opportunity to enhance trail experience through replacement with consistent signage style and installation of new interpretation signage at key trail features (e.g. at Forty Foot Falls).
- Requirement for removal of obsolete signage and infrastructure.
- Regular maintenance required along walking tracks in line with service intervals for trail grade/difficulty.
- Erosion control measures need to be kept maintained to preserve trail surfaces and infrastructure (e.g. stairs).
- Off-road cycling known to occur on fire trail network. Off-road cycling is not supported on narrow walking trail network noting the significant and sensitive environmental values and presence of stairs.
- *WSC Parks Strategy* (2016) classifies as a Bushland Reserve with Level of Service 2.
- No known official active volunteer involvement or stewardship of trails and surrounding environment.



06 Implementation Plan

	ACTION	TIMEFRAME	COST
B2.1	Undertake an engineering assessment to inform the upgrade/re-design of the cable along 'The Incline' on Nattai Gorge Loop.	Immediate	Low
B2.2	Replace stairs and ladders leading to Forty Foot Falls noting broken risers and antiquated design. (Note: Immediate maintenance required on broken risers in the interim).	Short	Medium
B2.3	Enhance safety for walkers through installing/replacing caution signage in line with Australian Standard 2156.1 at hazardous trail features (i.e. at lookouts/cliffs, the Incline, ladders/cliffs leading to Forty Foot Falls, creek crossings along Nattai Loop Track, intersections of Grade 5 trail). (No.~10).	Short	Low
B2.4	Replace damaged safety fencing at Nattai Gorge Lookout and at Forty Foot Falls.	Short	Low
B2.5	Repair dislodged handrail on the footbridge north-east of Angus Wilson Corner.	Short	Low
B2.6	Replace picnic table chair set (No.1) along Forty Ft Falls Track which currently has an exposed concrete base, and address surface run off issues with erosion control measures for sustainability of new picnic set.	Short	Low
B2.7	Consolidate trail network to reflect Concept Plan by ensuring that the walking track route is well defined and distinct for fire trail network (noting that some sections of walking tracks utilise where required).	Short	Low
B2.9	Prepare a concept plan/design for the Box Vale Trailhead to provide a regional-level trailhead precinct incorporating a primary trailhead sign (No.1), car parking (for approximately 20 cars), new entrance signage from Box Vale Road and Hume Hwy (No.2) picnic facilities (No.~4) and public amenities. Consider location and design to cater for future integration of recreational activities at Welby Weir.	Short	Medium
B2.10	Strategically plan for and install waymarking signage at key intersections and at intervals along trails with incorporation of colour-coded plaques/arrows corresponding with trailhead map and provision of trail network map via QR Code from local access points. (No.~30). (Waymarking posts with plaques No.~15, Replacement waymarking plaques on existing posts No.~65).	Short	Medium
B2.11	Remove obsolete signage across the reserve.	Short	Low
B2.12	Install primary trailhead sign at Box Vale Trailhead as per concept plan developed in Action B2.9.	Short	Low
B2.13	Implement concept plan/design for Box Vale Trailhead developed in Action B2.9.	Medium	High
B2.14	Install/replace interpretation signage at key trail destinations and features (i.e. Box Vale Trailhead, the boulder cutting, tunnel, box cart loading area, Nattai Gorge Lookout, Forty Ft Falls, The Incline). (No.~7).	Medium	Low
B2.15	Review the <i>WSC Parks Strategy (2016)</i> and reclassify Mt Alexandra Reserve to acknowledge the presence of seats and picnic settings and the requirement for public toilets at Box Vale Trailhead. Consider classifying Box Vale Trailhead separate to the broader reserve to reflect the higher service-level requirements in this section of the reserve to provide a regional-level trailhead.	Medium	Low
B2.16	Maintain/upgrade the picnic table chair sets at Angus Wilson Corner and at Nattai Gorge Lookout along Box Vale Track. (No.2).	Long	Low
B2.17	Inspect trails in line with recommended maintenance intervals (Grade 3: 6 months or less, Grade 4: 6 - 12 months, Grade 5: 6 - 18 months), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B2.18	Actively encourage the establishment of volunteer involvement and stewardship of trails and the surrounding environment in Mt Alexandra Reserve.	Ongoing	Low



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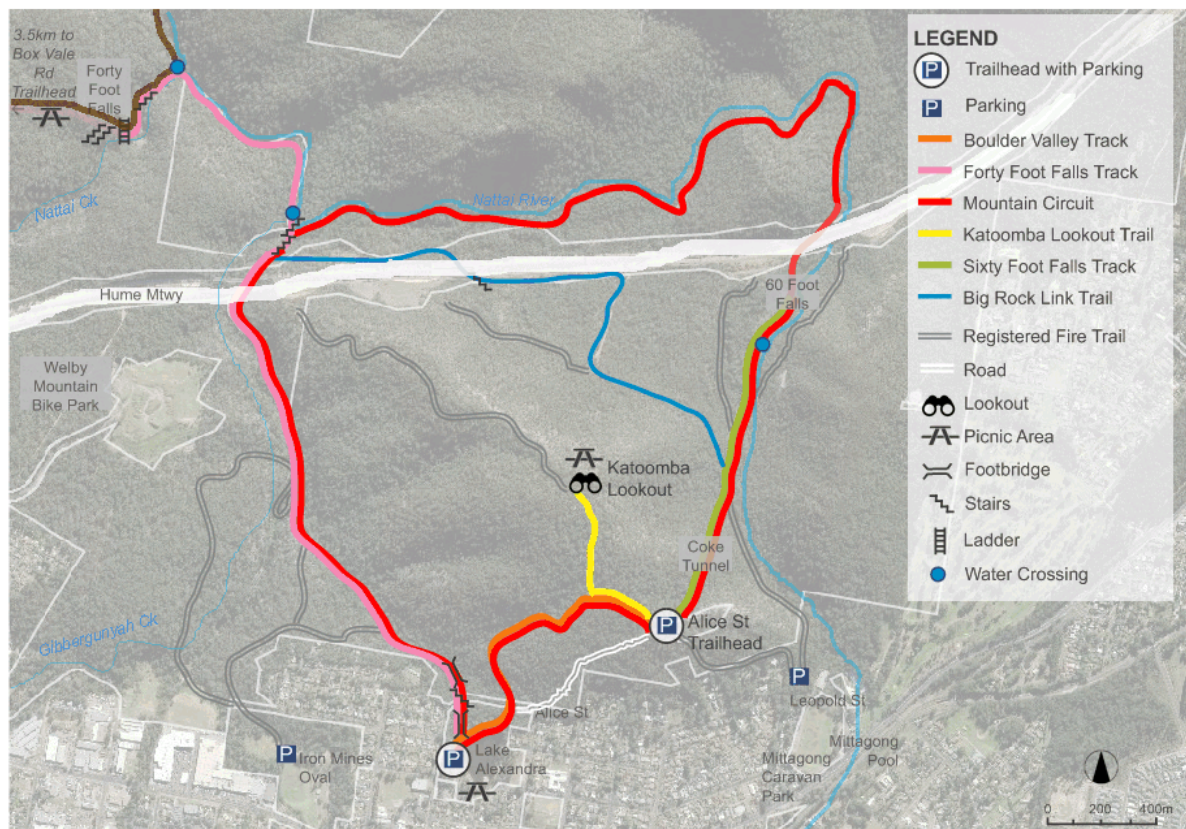
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06 Implementation Plan

MT ALEXANDRA RESERVE (LAKE ALEXANDRA TRAILHEAD)



CONCEPT PLAN



PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Boulder Valley Track	Walk Only	Grade 4 	1.5 hours RETURN	3km RETURN	Regional
Forty Ft Falls Track <i>Lake Alexandra to Falls</i>	Walk Only	Grade 4 	2.5 hours RETURN	7km RETURN	Regional
Mountain Circuit	Walk Only	Grade 5 	5 hours LOOP	10km LOOP	Regional
Katoomba Lookout Trail	Walk Only	Grade 3 	1 hour RETURN	1.5km RETURN	Regional
Sixty Foot Falls Track	Walk Only	Grade 4 	1.5 hours RETURN	3km RETURN	Regional
Big Rock Link Trail	Walk Only	Grade 4 	30 mins EACH WAY	2km EACH WAY	Regional



06 Implementation Plan

STRATEGY

B3 Enhance the network of existing recreational walking tracks within Mt Alexandra Reserve accessible from the Lake Alexandra Trailhead to provide well defined and safe, yet challenging, opportunities for bushwalking as well as conservation of the environment.

PRIORITY

High

RATIONALE

- Highly valued and used recreational area, particularly the renowned Box Vale Track.
- Opportunity to promote as one of the key outdoor recreational destinations in the Shire.
- Opportunity to provide connectivity via existing trail alignments and trailhead signage for the The Great Burrigorang Valley Walk which is a proposed regional, multi-day trail concept linking Mittagong to the Blue Mountains.
- Many requests for improved safety and wayfinding. Reports of walkers frequently getting lost.
- Original trail names are generally representative of trail experiences although promotion of trail names and routes is very inconsistent across various information sources.
- Existing walking trail network not clearly distinguished from extensive fire trail network.
- Proposed walking trail network uses existing narrow walking tracks where possible and shares some sections with fire trails.
- Primary Trailhead at Lake Alexandra is an existing high-quality community park with a wide range of support facilities such as car parking, amenities, play equipment, picnic facilities with accessibility provisions.
- Existing trailhead sign at Lake Alexandra is aged, misleading, not consistent with other trail information and does not meet Australian Standard 2156.1.
- Car parking at Alice Street Trailhead (located within reserve) requires surface improvements and installation of a trailhead sign.
- Trail network also accessible from local access points at Leopold Street and at Iron Mines Oval.
- Management/warning/caution signs are in varying condition and of varying styles which do not meet Australian Standard 2156.1. New and revised caution signs required to manage risks at hazardous trail features (i.e. water crossings, at Katoomba Lookout, cliffs at 60 Foot Falls).
- Requirement for engineering assessment of concrete balance structure for Gibbergunyah Creek crossing on Forty Foot Falls Track.
- Safety fencing at Katoomba Lookout is damaged.
- Timber stairs just north of Hume Motorway along Forty Ft Falls Track very aged/worn/damaged.
- Timber stairs north of Hume Motorway along Forty Ft Falls Track damaged/uplifted by roots of fallen tree.
- Picnic table chair sets at Katoomba Lookout in good condition.
- Various styles of waymarkers and directional signs existing across trail network in very poor condition. Colour-coded system proposed with plaques/arrows corresponding with trailhead map.
- Trail alignments difficult to follow E.g. At Katoomba Lookout intersection.
- Directional signage directing to 'Mittagong Pool' is misleading.
- Trail destination/end point for 60 Foot Falls Track unclear. Destination naming recommended. Requirement to clearly outline trail and safety information prior to the Grade 5 Trail from this point.
- Requirement for removal of obsolete signage and infrastructure.
- Emergency location discs existing across reserve with GPS coordinates.
- No existing interpretation signage despite interesting landscape and historical features (e.g. Coke tunnel, Katoomba Lookout, 60 Foot Falls). Opportunity to define trail destinations using interpretation signage.
- Regular maintenance required along walking tracks in line with service intervals for trail grade/difficulty.
- Erosion control measures need to be kept maintained to preserve trail surfaces and infrastructure.
- Welby Mountain Bike Park is within Mt Alexandra Reserve. Proposal for re-purposing of Welby Tip into Mountain Bike Park (subject to suitability determined by Environmental Protection Authority (EPA)).
- Off-road cycling known to occur on fire trail network. Off-road cycling is not supported on narrow walking trail network noting the significant and sensitive environmental values and presence of stairs.
- WSC Parks Strategy (2016) classifies as a Bushland Reserve with Level of Service 2.
- No known official active volunteer involvement or stewardship of trails and surrounding environment.



06 Implementation Plan

	ACTION	TIMEFRAME	COST
B3.1	Undertake an engineering assessment to inform the action required for the concrete balance structure at the Gibbergunyah Creek crossing on Forty Foot Falls Track, noting the potential requirement for pedestrian boardwalk bridge.	Immediate	Medium
B3.2	Repair damage on stairs which have been uplifted by roots of fallen tree north of Hume Motorway along Forty Ft Falls Track.	Immediate	Low
B3.3	Upgrade damaged timber stairs in very poor condition just north of Hume Motorway along 40 Foot Falls Track.	Immediate	Low
B3.4	Upgrade damaged safety fencing at Katoomba Lookout.	Immediate	Low
B3.5	Enhance safety for walkers through installing/replacing caution signage in line with Australian Standard 2156.1 at hazardous trail features (i.e. at lookouts/cliffs, falls, water crossings, intersections of Grade 5 trail). (No.~10)	Short	Low
B3.6	Consolidate trail network to reflect Concept Plan by ensuring that the walking track route is well defined and distinct for fire trail network (noting that some sections of walking tracks utilise where required).	Short	Low
B3.7	Subject to vegetation assessment, establish a new trail alignment link at the intersection for the Katoomba Lookout Trail, Boulder Valley Track and Mountain Circuit.	Short	Low
B3.8	Replace primary trailhead sign at Lake Alexandra to include key trail information for trails within Mt Alexandra Reserve in line with Australian Standard 2156.1. (No.1). Consider options to incorporate future signage for the Great Burrangong Valley Walk.	Short	Low
B3.9	Improve car parking surface and install a trailhead sign at the Alice Street Trailhead to include key trail information in line with Australian Standard 2156.1. (No.1).	Short	Low
B3.10	Strategically plan for and install waymarking signage at key intersections and at intervals along trails with incorporation of colour-coded plaques/arrows corresponding with trailhead map and provision of trail network map via QR Code from local access points. (No.~30).	Short	Low
B3.11	Remove obsolete signage across the reserve.	Short	Low
B3.12	Install interpretation signage at key trail destinations and features (i.e. Coke Tunnel, Katoomba Lookout, 60 Foot Falls). (No.~3).	Medium	Low
B3.13	Review the <i>WSC Parks Strategy</i> (2016) and reclassify Mt Alexandra Reserve to acknowledge the presence of picnic settings.	Medium	Low
B3.14	Maintain/upgrade picnic table chair set at Katoomba Lookout. (No.2).	Long	Low
B3.15	Inspect trails in line with recommended maintenance intervals (Grade 3: 6 months or less, Grade 4: 6 - 12 months, Grade 5: 6 - 18 months), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B3.16	Actively encourage the establishment of volunteer involvement and stewardship of trails and the surrounding environment in Mt Alexandra Reserve. (Refer also B2.18).	Ongoing	Low



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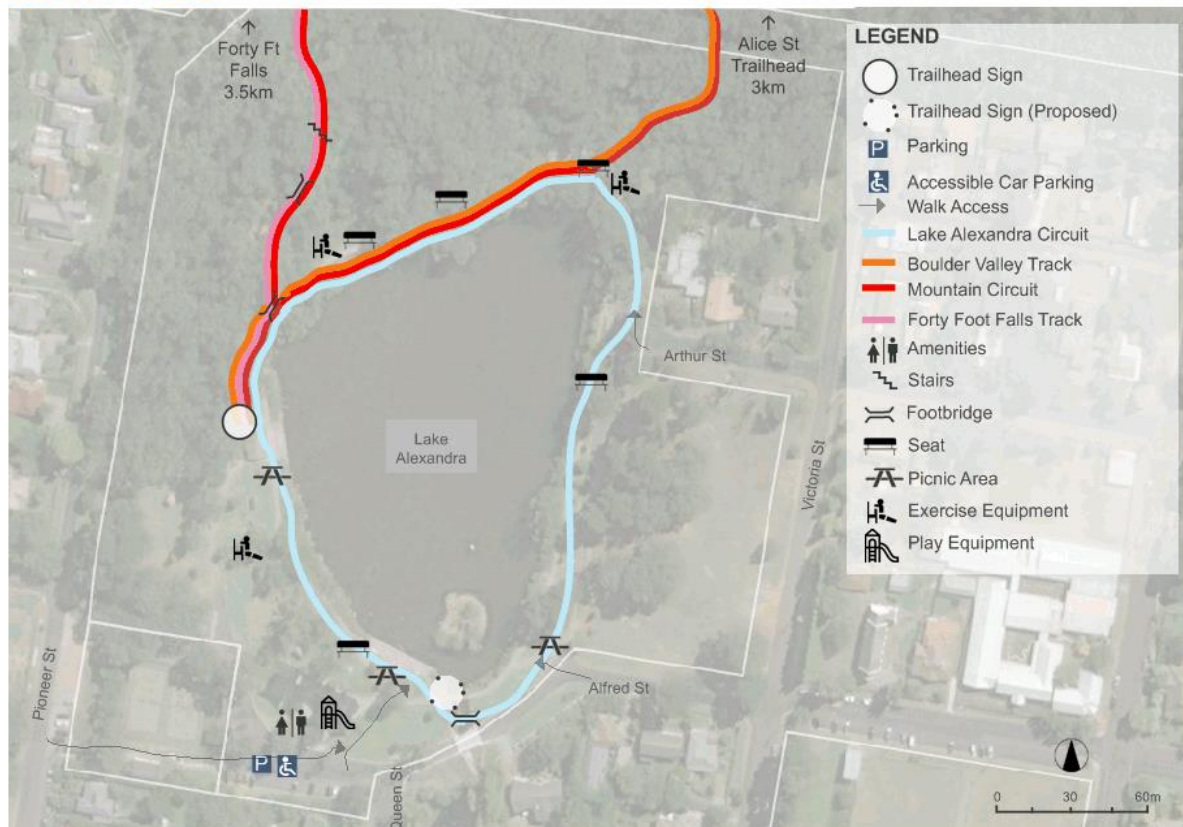
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LAKE ALEXANDRA RESERVE

Lake Alexandra Reserve is a premier community park, located at the base of Alexandra Park in Mittagong. The lake was historically created as a dam supplying water for engines hauling coal to the Fitzroy iron mines. The reserve has been designed to include people who use a wheelchair, who are deaf and those who are deaf or have hearing loss. Facilities offered include barbecues, picnic settings, play equipment, amenities and a sealed path surrounding the lake with exercise equipment along the route.



CONCEPT PLAN



PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Lake Alexandra Circuit	Walk Only	Grade 1	15 min LOOP	600m LOOP	Regional



06 Implementation Plan

STRATEGY

B4 Enhance Lake Alexandra Reserve to provide a high quality regional-level trailhead precinct and to continue to provide an accessible Grade 1 Walking Trail.

PRIORITY

High

RATIONALE

- Highly valued and used recreational area, particularly for its accessibility provisions.
- Opportunity to further promote as one of the key outdoor recreational destinations in the Shire, with provisions for people who use a wheelchair and who are blind, deaf or have hearing loss.
- Opportunity to provide key trailhead and trail destination for the The Great Burratorang Valley Walk which is a proposed regional, multi-day trail concept linking Mittagong to the Blue Mountains.
- No formal trail name, colloquially known as Lake Alexandra Circuit which is representative of trail experience.
- Existing trail is a sealed path in good condition, with high-quality support infrastructure.
- No existing trailhead sign for Lake Alexandra Circuit. Installation of trailhead sign will support usage through clearly outlining the trail experience offered and managing expectations of difficulty, particularly for people with a disability.
- Regional-level trailhead sign required for walking tracks in Mt Alexandra Reserve.
- No requirement for waymarking for Lake Alexandra Circuit.
- Waymarking required within Lake Alexandra Reserve to support beginning of trails leading to Mt Alexandra Reserve.
- *WSC Parks Strategy (2016)* classifies Lake Alexandra Reserve as a Community Park with Level of Service 1.

	ACTION	TIMEFRAME	COST
B4.1	Install a trailhead sign specifically for the Grade 1 Accessible Trail at Lake Alexandra to include trail information for Lake Alexandra Circuit in line with Australian Standard 2156.1 and incorporating universal access (e.g. wheelchair-friendly positioning, braille). (No.1)	Short	Low
B4.2	Continue to provide interpretation signage along the Mt Alexandra Circuit at accessible locations and heights.	Ongoing	Low
B4.3	Inspect trails in line with recommended maintenance intervals (Grade 1: 30 days or less), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B4.4	Continue to provide facilities such as parking, picnic infrastructure and amenities accessible to people with a disability to support the use of Mt Alexandra Circuit as a Grade 1 Accessible Trail.	Ongoing	Low



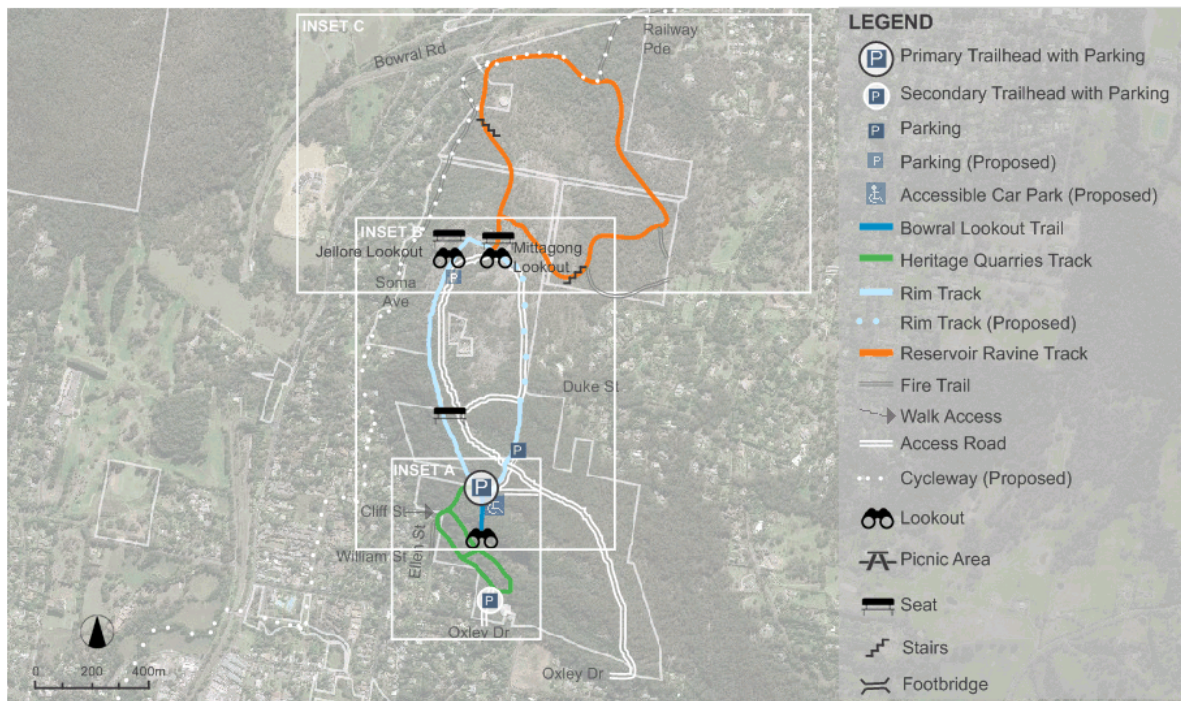
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MOUNT GIBRALTAR RESERVE

Mount Gibraltar Heritage Reserve is an iconic 130ha reserve noted for its State Heritage Significance for both its Endangered Ecological Communities and for the Heritage Quarries Complex. It is protected by the Federal Environmental Protection and Biodiversity Act (1999) for the presence of *Uplands Basalt Eucalypt Forest of the Sydney Basin Bio-region*. Mount Gibraltar is the highest point between Sydney and Canberra and is a volcanic intrusion of 863m, composed of a unique trachyte called microsyenite that was quarried for 100 years (1886-1986) and used in many heritage structures. The reserve is situated between Bowral and Mittagong and is a popular bushwalking reserve.



CONCEPT PLAN - OVERALL

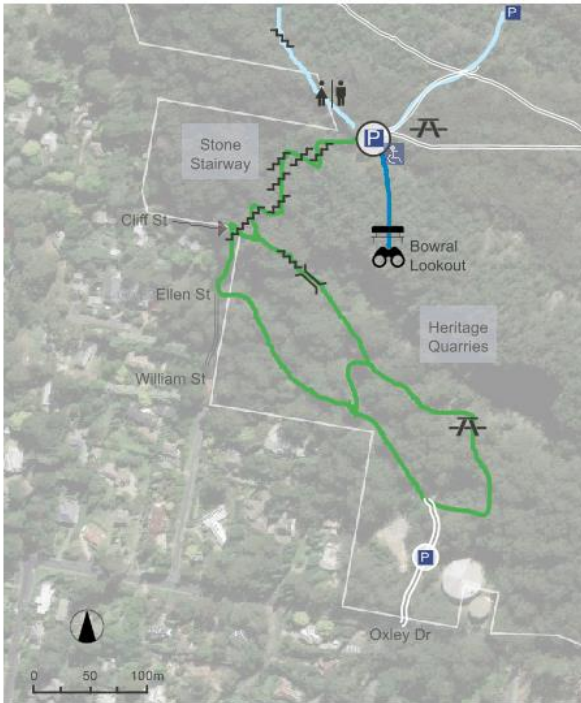


PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Bowral Lookout Trail	Walk Only	Grade 1	10 min RETURN	250m RETURN	Regional
Heritage Quarries Track	Walk Only	Grade 3	30 min LOOP	1.5km LOOP	Regional
Rim Track	Walk Only	Grade 3	45 min LOOP	2.5km LOOP	Regional
Reservoir Ravine Track	Walk Only	Grade 4	1.5 hours LOOP	3km LOOP	Regional

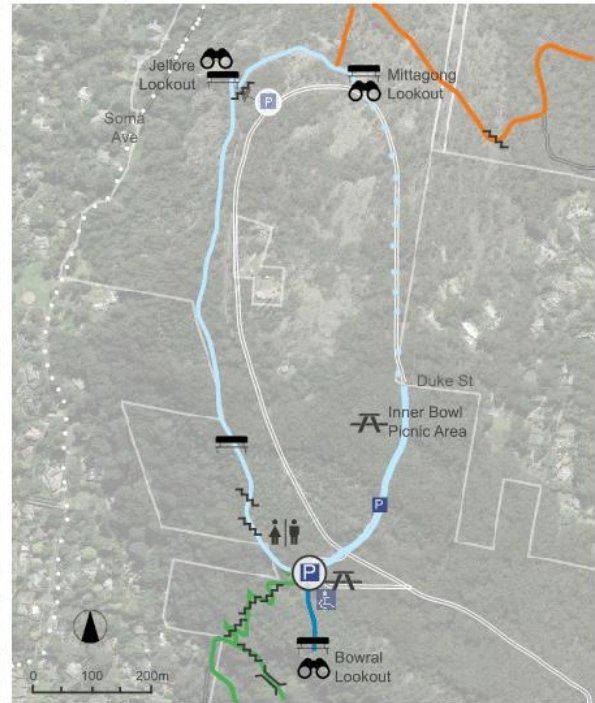


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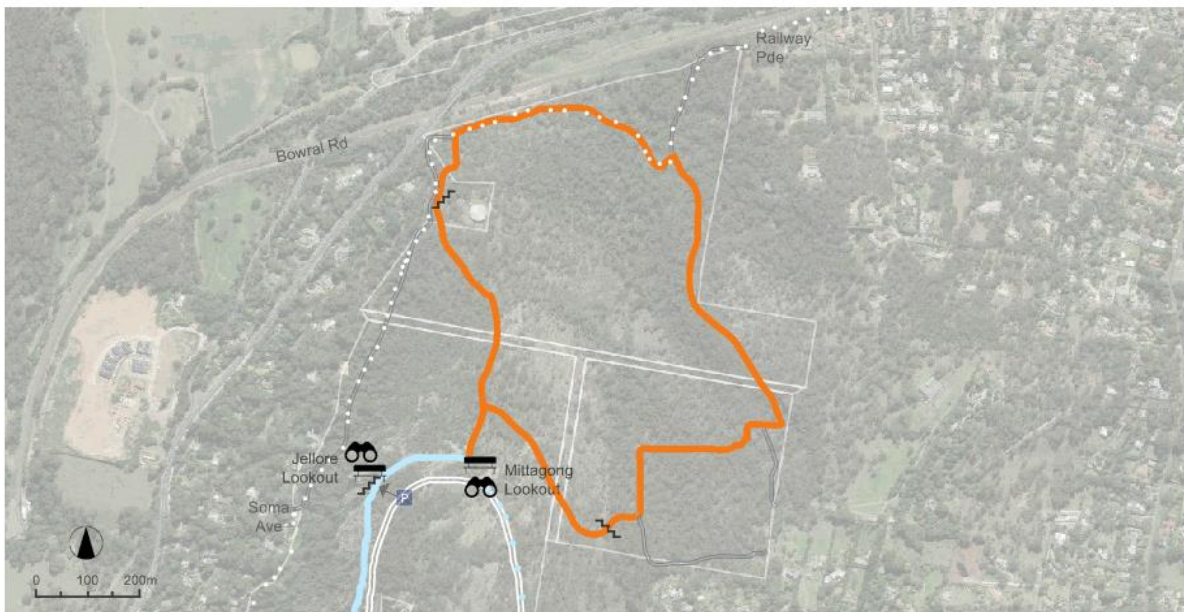
CONCEPT MAP - INSET A



CONCEPT MAP - INSET B



CONCEPT MAP - INSET C



LEGEND

Primary Trailhead with Parking	Bowral Lookout Trail	Fire Trail	Lookout
Secondary Trailhead with Parking	Heritage Quarries Track	Walk Access	Picnic Area
Parking	Rim Track	Access Road	Seat
Parking (Proposed)	Rim Track (Proposed)	Cycleway (Proposed)	Stairs
Accessible Car Park (Proposed)	Reservoir Ravine Track		Footbridge



06 Implementation Plan

STRATEGY

B5 Enhance the network of existing recreational walking tracks within Mt Gibraltar Heritage Reserve to provide for recreational use, on loop trails where possible, while prioritising conservation of the environment and heritage.

PRIORITY

Medium

RATIONALE

- Very high ecological and heritage significance. Requirement to manage impacts of recreation to ensure successful conservation of environmental and heritage values.
- Existing and well established network of walking trails with trail surfaces and infrastructure in varying conditions. Fire trail networks primarily at reserve boundaries and northern and southern extents.
- Existing trail names are generally representative of trail experiences.
- Opportunity to improve trail experience through providing safe loop options for Rim Track and Reservoir Ravine Track, including improving safety for walkers along Oxley Drive.
- Primary trailhead provides support infrastructure such as car parking, amenities and picnic areas. Additional accessibility provisions required to support use of Bowral Lookout Trail as a Grade 1 Accessible Trail, such as parking, picnic areas and amenities accessible to people with a disability.
- Requirement for upgrade/replacement/restoration of amenities at trailhead maintaining heritage design where possible. Constraints noted regarding existing electricity and plumbing infrastructure.
- Existing trailhead signs at primary trailhead and southern access point are relatively modern, though do not meet Australian Standard 2156.1.
- Car parking at primary trailhead and southern access point have capacity for increased usage.
- Amenities at primary trailhead are aged and known to attract anti-social behaviour. Proposed incorporation of universal design principles and principles of crime prevention through environmental design (CPTED).
- Historic amenities at Inner Bowl Picnic Area are unserviceable.
- Derelict picnic infrastructure existing along western route of Rim Track.
- Existing caution signs do not meet Australian Standard 2156.1 (e.g. Beware of cliff edges along Rim Track). Requirement for additional caution signage associated with cliff edges/fall heights at lookouts.
- Various styles of waymarkers existing across trail network in varying condition. New waymarking system is being installed and this style is generally supported (i.e. arrow plaque on posts). Colour-coded plaques/arrows corresponding with trailhead map is proposed.
- Requirement for upgrade/replacement/restoration of aged infrastructure across reserve such as seating and shelters maintaining heritage design where possible.
- Requirement for removal of obsolete signage and infrastructure.
- Existing interpretation signage at key trail features, particularly along Heritage Quarries Track, is generally in good condition. Continued implementation of interpretation signage outlined in *Mount Gibraltar Heritage Reserve Interpretation Plan* (2016) is supported to further enhance trail experience.
- Some trail sections in poor condition due to erosion impacts and minimal maintenance (especially on Reservoir Ravine Track). Erosion control (i.e. installation of water bars, swales and berms) and additional trail surface maintenance are required.
- Significant number of steps, including recently restored Heritage Stone Stairway, require regular and ongoing maintenance.
- If additional car parking capacity is required long-term, there is opportunity to optimise car parking at the primary trailhead and to reinstate closed car park near Jellore Lookout. This would provide for users of Reservoir Ravine Track and visitors driving to lookouts. It is noted that re-opening of this car park would require mitigation of antisocial behaviour such as rubbish dumping.
- *WSC Parks Strategy* (2016) classifies Mt Gibraltar Reserve as a Bushland Reserve Level of Service 1.
- *WSC Bicycle Plan* (2016) proposes a cycling route along Gib West Fire Trail providing an off-road active transport route between Bowral and Mittagong - this is supported.
- Mountain bike usage (i.e. berms and jumps) evident around Gib East Fire Trail. Off-road cycling is supported only on fire trails, noting the significant and sensitive environmental values of the reserve.
- Active volunteer involvement and stewardship through Mt Gibraltar Landcare and Bushcare which was appointed to assist Council in care control and management of the reserve in 1993 and have worked on a weekly basis restoring bushland and heritage within the reserve.



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	ACTION	TIMEFRAME	COST
B5.1	In consultation with Mt Gibraltar Landcare and Bushcare, confirm details for walking track improvements including trail experiences, names, and key trail features for enhancement and promotion on signage. i.e. lookouts, heritage stone staircase, heritage quarries complex, trachyte shelters, stone wall viewpoint, Inner Bowl Picnic Area.	Immediate	Low
B5.2	Enhance safety for walkers through installing caution signage in line with Australian Standard 2156.1 at cliff edges/lookouts/road (No.-8).	Short	Low
B5.3	Determine feasibility of creating a loop trail for the Rim Track, between Mittagong Lookout and the Inner Bowl Picnic Area.	Short	Low
B5.4	Remove obsolete signage and infrastructure (i.e. derelict picnic facilities on Rim Track).	Short	High
B5.5	Consolidate trail network to reflect Concept Plan and protect environmental values by closing informal/unsustainable tracks through revegetation and brushing except where required for alternative function (e.g. fire trails, control lines).	Short	Low
B5.6	Provide additional accessible features such as parking, picnic infrastructure and amenities which are accessible to people with a disability to support the use of Bowral Lookout Trail as a Grade 1 Accessible Trail.	Short	Medium
B5.7	Enhance the section of walking track originally known as 'Ravine Track' to provide connectivity for the Reservoir Ravine Track as a loop trail. Incorporate erosion control (i.e. installation of swales & berms) to ensure sustainability and minimise maintenance requirements.	Short	Low
B5.8	Develop and implement a Waymarking Plan for the continued implementation of waymarking signage with incorporation of colour-coded plaques/arrows corresponding with trailhead map and provision of trail network map via QR Code from local access points. (No.-25).	Short	Medium
B5.9	Replace trailhead signs at primary and secondary trailheads to include key trail information in line with Australian Standard 2156.1. (No.3).	Short	Low
B5.10	Upgrade public amenities at primary trailhead with consideration of maintaining heritage style, incorporating principles of crime prevention through environmental design (CPTED) and providing accessibility for people with a disability.	Medium	High
B5.11	Upgrade picnic table and chair sets at the primary trailhead, at the Heritage Quarries Complex and at the Inner Bowl Picnic Area. (No.-7).	Medium	Low



06 Implementation Plan

	ACTION	TIMEFRAME	COST
B5.12	Upgrade seats within the heritage shelters along Rim Track. (No.3).	Medium	Low
B5.13	Restore heritage seat along Heritage Stone Stairway. (No.1).	Medium	Low
B5.14	Upgrade the stone block structures (disused toilets) at the Inner Bowl Picnic Ground as heritage items, in line with the <i>Mount Gibraltar Heritage Reserve Interpretation Plan</i> (2016). This may include exhibition of information relating to the reserve's history, geology and ecology.	Medium	High
B5.15	Review the <i>WSC Parks Strategy</i> (2016) and reclassify Mt Gibraltar Reserve to acknowledge the presence of and requirement for unsealed on-site car parking and seats/shelters which are not associated with picnic facilities.	Medium	Low
B5.16	Subject to increased usage of reserve and requirement for additional car parking capacity, upgrade car parking at the primary trailhead and consider reinstating closed car park near Jellore Lookout.	Long	Medium
B5.17	Improve the surface of bitumen loop road off Oxley Drive to trailhead zone.	Long	High*
B5.18	Continue implementation of interpretation signage in line with <i>Mount Gibraltar Heritage Reserve Interpretation Plan</i> (2016). (No.6).	Ongoing	Low
B5.19	Communicate (via signage and reserve information) the prohibition of off-road cycling beyond fire trails (Gib West and Gib East Fire Trails) noting the significant environmental values and incompatibility with environment.	Ongoing	Low
B5.20	Inspect trails in line with recommended maintenance intervals (Grade 1: 30 days or less, Grade 3: 6 months or less, Grade 4: 6 - 12 months), to ensure the trails are kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B5.21	Actively encourage continued volunteer involvement and stewardship of trails and the surrounding environment in Mt Gibraltar Reserve.	Ongoing	Low



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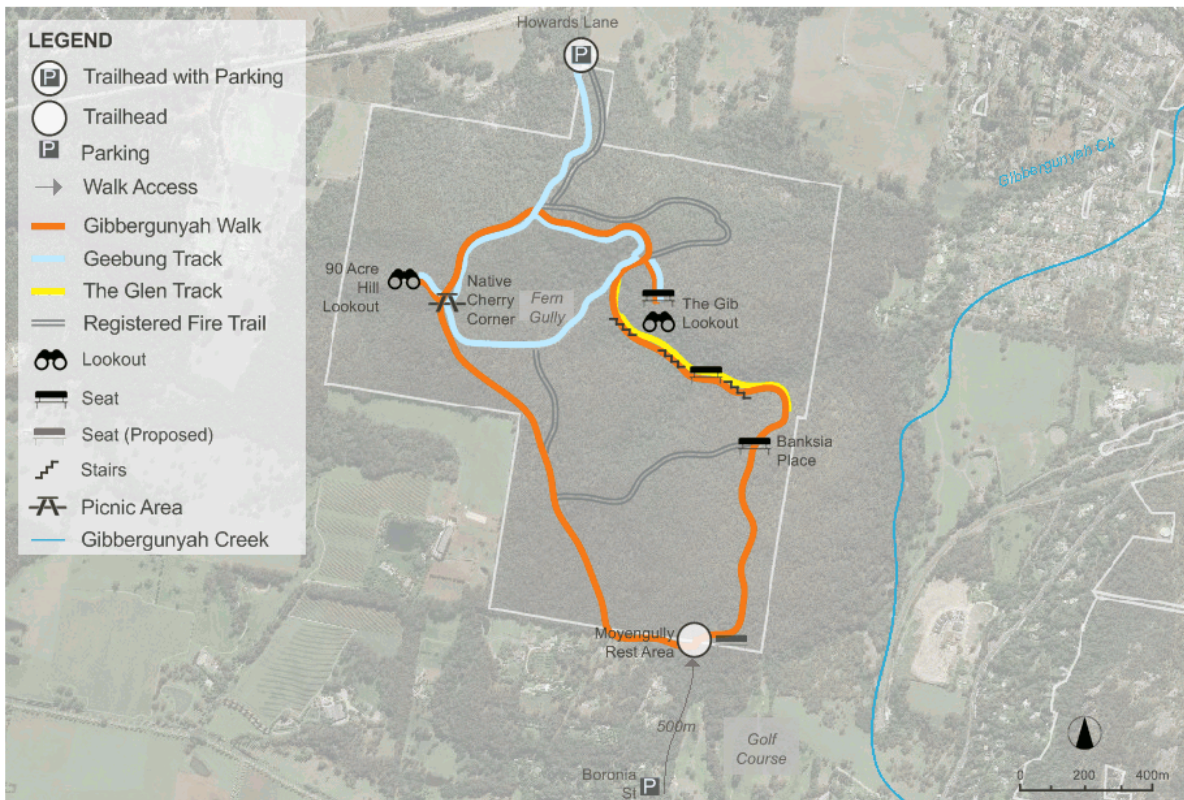
06 Implementation Plan

GIBBERGUNYAH RESERVE

Gibbergunyah Reserve is a bushland reserve located between Mittagong and Bowral. The reserve covers an area of approximately 185 hectares and provides for bushwalking with two notable lookout points. The reserve takes its name from Gibbergunyah Creek which flows to the east of the reserve.



CONCEPT PLAN



PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Geebung Track	Walk Only	Grade 3	1.5 hours RETURN	4km RETURN	District
Gibbergunyah Walk	Walk Only	Grade 4	2.5 hours RETURN	6.2km RETURN	District
The Glen Track	Walk Only	Grade 4	30 mins EACH WAY	1.1km EACH WAY	District



06 Implementation Plan

STRATEGY

B6 Formalise and enhance walking tracks within Gibbergunyah Reserve recreational use as well as conservation of the environment.

PRIORITY

Medium

RATIONALE

- Existing walking trail network, names and routes are not clearly distinguished from fire trail network.
- Distance and time are not clear for various route options shown on trailhead map.
- Northern trailhead has limited car parking capacity. Southern trailhead is located at Country Club with more car parking capacity.
- Existing trailhead signs are aged and do not meet Australian Standard 2156.1.
- Existing waymarking signage in poor condition and not effective for wayfinding.
- No existing caution signs associated with cliff edges/fall heights at lookouts.
- Existing interpretation signage in varying condition with some in good condition (i.e. plaques at 90 Acre Hill Lookout) and others in poor condition (i.e. botanical names).
- Interesting and distinct interpretation content associated with Indigenous history.
- Section of trail through fern gully on Geebung Track is proposed for decommission due to sensitive environment. This section appears not well used due to terrain and is not required as link for trail network.
- Proposed walking track network uses existing narrow walking tracks where possible and shares some sections with fire trails. Additional maintenance is required along narrow walking tracks, particularly along 'The Glen Track', access to lookouts and the access track alongside golf course.
- Infrastructure at Moyengully Rest Area (southern trailhead) is in poor condition and requires redesign/replacement (i.e. fencing, bollards, signage). Antiquated step-over and timber bollards no longer required.
- Infrastructure in poor condition at Banksia Place (seating), Native Cherry Corner (seating and picnic facilities) and The Gib Lookout (lookout/barrier, interpretation signage and seating).
- Opportunity to enhance trail experience through more interpretation signage, particularly relating to Indigenous context.
- *WSC Parks Strategy* (2016) classifies as a Bushland Reserve with Level of Service 3.
- No known official active volunteer involvement in trails and surrounding environment. However, map box at northern trailhead seems to be regularly re-stocked with paper copies of reserve information and maps.



06 Implementation Plan

	ACTION	TIMEFRAME	COST
B6.1	Consolidate walking trail network to reflect Concept Plan by closing unsustainable tracks through fern gully on Geebung Track through revegetation and brushing.	Immediate	Low
B6.2	Install a lookout fencing/barrier at 90 Acre Hill Lookout and upgrade lookout fencing/barrier at The Gib Lookout. (No.2).	Immediate	Low
B6.3	Install caution signage at lookouts warning walkers of cliff edges/fall heights. (No.2)	Immediate	Low
B6.4	Remove redundant waymarking posts.	Immediate	Low
B6.5	Establish Moyengully Rest Area (southern trailhead) as a trail feature/destination by installing seating (No.1), interpretation signage relating to Indigenous context, timber fencing and pedestrian access gate/style, and removing existing step-over and bollards.	Short	Low
B6.6	Improve surface of the access track alongside the golf course, addressing surface erosion issues.	Short	Low
B6.7	Install waymarking signage at key intersections and at intervals along trails. (No.~30).	Short	Low
B6.8	Replace trailhead signs to include key trail information in line with Australian Standard 2156.1. (No.2).	Short	Low
B6.9	Upgrade seating at Banksia Place, Native Cherry Corner, Gib Lookout and Glen Track. (No.5).	Medium	Low
B6.10	Upgrade picnic table and chair set at Native Cherry Corner. (No.2).	Medium	Low
B6.11	Install interpretation signage at key trail features/locations (i.e. lookouts, rest areas, Indigenous heritage locations). (No.6).	Medium	Low
B6.12	Review the <i>WSC Parks Strategy</i> (2016) and reclassify Gibbergunyah Reserve to acknowledge the presence of and requirement for seating and picnic facilities as trail support infrastructure.	Medium	Low
B6.13	Improve surface of car parking areas at trailheads.	Long	Low*
B6.14	Continue environmental enhancements/re-vegetation.	Ongoing	Low
B6.15	Inspect trails in line with recommended maintenance intervals (Grade 3: 6 months or less, Grade 4: 6 - 12 months), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B6.16	Actively encourage the establishment of volunteer involvement and stewardship of trails and the surrounding environment in Gibbergunyah Reserve.	Ongoing	Low



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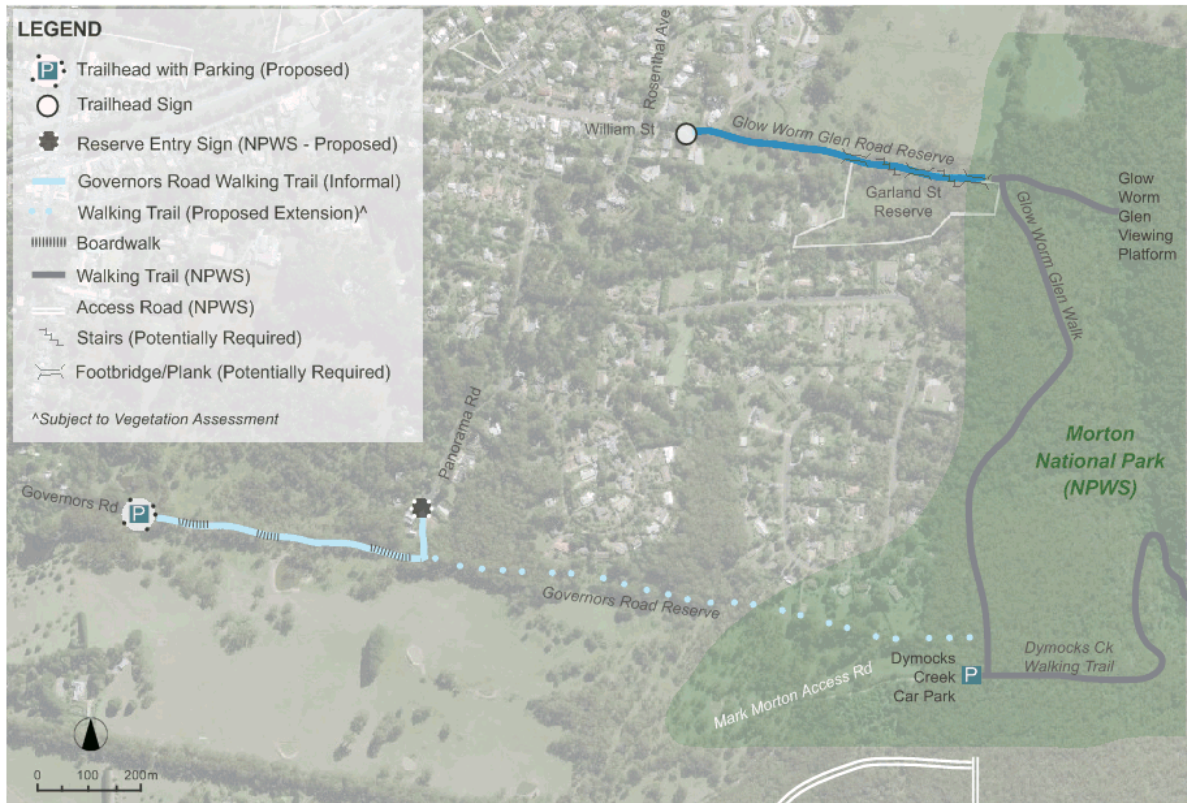
06 Implementation Plan

GLOW WORM GLEN (BUNDANOON ACCESS)

Glow Worm Glen is a key trail destination, particularly during summer evenings, within Morton National Park which is managed by the NSW National Parks and Wildlife Service (NPWS). While the National Park has trailhead facilities, the Glow Worm Glen Walk and viewing platform are most easily accessed from Council land (Glow Worm Glen Road Reserve & Garland Street Reserve) in Bundanoon. This section of Morton National Park, and the surrounding bushland and tracks, has been significantly burnt during the 2019/20 bushfires. The nearby Governors Road Boardwalk (Road Reserve) links residential areas from Governors Rd to Panorama Rd, but does not currently link to the National Park.



CONCEPT PLAN



PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Glow Worm Glen - William St Access*	Walk Only	Grade 3	N/A <small>Access to other trails</small>	600m EACH WAY	Regional
Governors Road-Walking Trail	Walk Only	Grade 2	15 min EACH WAY	600m EACH WAY	Local
Governors Road Walking Trail (Extension)	Walk Only	NA	15 min EACH WAY	1km EACH WAY	Local

* Trail not ground-truthed due to access restrictions after bushfire damage



06 Implementation Plan

STRATEGY

B7 Reinstate access to Glow Worm Glen from various local access points in Bundanoon with walking tracks offering opportunities for recreational use as well as conservation of the environment.

PRIORITY

Medium

RATIONALE

- Glow Worm Glen is a highly valued and used recreational destination.
- Significant bushfire damage to bushland, tracks and infrastructure requires works on both NPWS and WSC land to reinstate access.
- Access track from William Street is currently closed due to bushfire damage.
- Car parking at William Street is limited to on-road car parking in residential areas. Limited capacity for high volumes of usage/access from Bundanoon with current car parking/trailhead arrangement.
- Existing access track from William St is steep with steps - infrastructure currently in disrepair due to bushfire damage.
- Using a torch is recommended for night time use of Glow Worm Glen Walk.
- Existing trail along the Governors Road (Road Reserve) incorporates both natural surface and boardwalk trail surface. No trail support infrastructure or signage is provided and trail destination/s are not defined.
- There may be potential to establish a trailhead with car parking at the beginning of the Governors Road Reserve to provide a walking access track into Morton National Park. The viability of this proposal will be subject to the outcomes of a vegetation assessment along the road reserve.
- *WSC Parks Strategy (2016)* classifies Garland Street Reserve (Glowworm Glen) as a Bushland Reserve with Level of Service 3. The road reserves are not included in the *WSC Parks Strategy (2016)*.
- Active volunteer involvement and stewardship through Glow Worm Glen Bush Care.

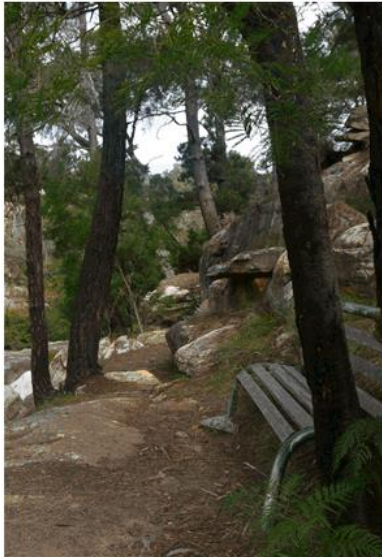
ACTION		TIMEFRAME	COST
B7.1	Work in partnership with NPWS to develop a timeline/plan for reinstating the Glow Worm Glen Walk, with local access available from Bundanoon via an access track from William Street.	Short	Low
B7.2	Reinstate trail surface and infrastructure along the Glow Worm Glen Road Reserve (access from William Street). Likely to include infrastructure such as basic timber plank bridges over small gullies (No.~3) and sections of box steps (No.~2).	Short	High
B7.3	Undertake a vegetation assessment of the Governors Road Reserve to determine the feasibility of extending the existing trail to connect with Dymocks Creek Car Park.	Short	Low
B7.4	Install trailhead signs at William St and Governors Rd access points to include key trail information in line with Australian Standard 2156.1. (No.2).	Short	Low
B7.5	Install waymarkers along Glow Worm Glen Road Reserve and Governors Road Reserve (access to Glow Worm Glen Walk). (No.~4).	Medium	Low
B7.6	Install an interpretation sign along the Glow Worm Glen Road Reserve and Governors Road Reserve. (No.~2).	Long	Low
B7.7	Subject to the outcomes of the vegetation assessment (refer Action B7.3) and consultation with stakeholders (e.g. NPWS) and the community, develop a trailhead with car parking at Governors Rd and extend the existing trail along Governors Road Reserve to connect with Glow Worm Glen Walk within Morton National Park.	Long	High
B7.8	Inspect trails in line with recommended maintenance intervals (Grade 2: 90 days or less, Grade 3: 6 months or less), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B7.9	Actively encourage continued volunteer involvement and stewardship of trails and the surrounding environment along Governors and Glow Worm Glen Road Reserves, and in Garland Street Reserve.	Ongoing	Low



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STONE QUARRY WALK

Stone Quarry Walk is a bushland reserve located along the Wingecarribee River, within close walking distance from the historic town centre of Berrima. The reserve has an interesting history relating to the quarrying of sandstone, showcased as a building material in the Holy Trinity Anglican Church along the trail. The reserve has an existing walking trail through the historic quarry site.



CONCEPT PLAN



TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Stone Quarry Walk	Walk Only	Grade 3	30 min LOOP	650m LOOP	District



06 Implementation Plan

STRATEGY

B8 Progressively enhance Stone Quarry Walk to provide a well defined walking track offering opportunities for recreational use as well as conservation of the environment.

PRIORITY

Medium

RATIONALE

- Well established and defined trail name 'Stone Quarry Walk' is representative of trail experience.
- Trail alignment is generally well defined. Requirement for some waymarking/directional signage.
- Loop option (i.e. alignment along Argyle Street) is not clearly identified as part of the trail.
- Existing trailhead signage (north of church) is aged and does not meet Australian Standard 2156.1. Refers to 'The Quarry Path' as part of the 'Berrima River Walk' which is misleading.
- Car parking has capacity for increased reserve usage.
- Reserve entry signage (at access point south of church) does not represent difficulty of trail experience ahead or information regarding reserve management.
- Steep stairs have modern handrails in good condition which improves accessibility.
- Safety fencing required to improve safety at hazardous fall height at quarry (between seats).
- Opportunity to link Stone Quarry Walk to Berrima Weir Reserve via footbridge/river crossing.
- No existing interpretation signage along trail despite interesting historical features.
- Opportunity to enhance trail experience through interpretation signage relating Historical Sandstone Quarry and Holy Trinity Anglican Church.
- Opportunity to enhance trail experience through formalising loop section along Argyle Street.
- Seats in poor condition requiring replacement. (No.2).
- *WSC Parks Strategy* (2016) classifies Stone Quarry Walk as a Bushland Reserve with Level of Service 2.
- Active volunteer involvement and stewardship through Berrima Bush Care.

ACTION		TIMEFRAME	COST
B8.1	Establish a management and maintenance agreement with landowners (i.e. Anglican Church Property Trust) to ensure ongoing connectivity for loop trail.	Short	Low
B8.2	Install a new primary trailhead sign to include key trail information for Stone Quarry Walk in line with Australian Standard 2156.1. Consider options to later integrate the proposed trail extension to Berrima Weir Walk. (No.1)	Short	Low
B8.3	Remove existing trailhead sign and 'Stone Quarry Walk' sign at southern access point (from Argyle Street) and replace with reserve entry sign providing key trail information via QR code.	Short	Low
B8.4	Install safety barrier at hazardous fall height at quarry (No.1) and install caution signage warning walkers of cliff edges/fall height (No.1)	Short	Low
B8.5	Install waymarking signage at key intersections. (No.~4).	Short	Low
B8.6	Replace seating in poor condition. (No.2)	Short	Low
B8.7	Upgrade trail surface where damaged from tree roots and/or erosion.	Short	Low
B8.8	Install interpretation signage at key trail features (e.g. Historic Quarry, Wingecarribee River, Holy Trinity Anglican Church). (No.~3).	Medium	Low
B8.9	Review the <i>WSC Parks Strategy</i> (2016) to acknowledge the presence of seating along Stone Quarry Walk and support for interpretive signs.	Medium	Low
B8.10	Improve surface of car parking at trailhead.	Long	Low*
B8.11	Continue environmental enhancements/re-vegetation.	Ongoing	Low
B8.12	Inspect trails in line with recommended maintenance interval (Grade 3: 6 months or less), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B8.13	Actively encourage continued volunteer involvement and stewardship of Stone Quarry Walk and the surrounding environment.	Ongoing	Low



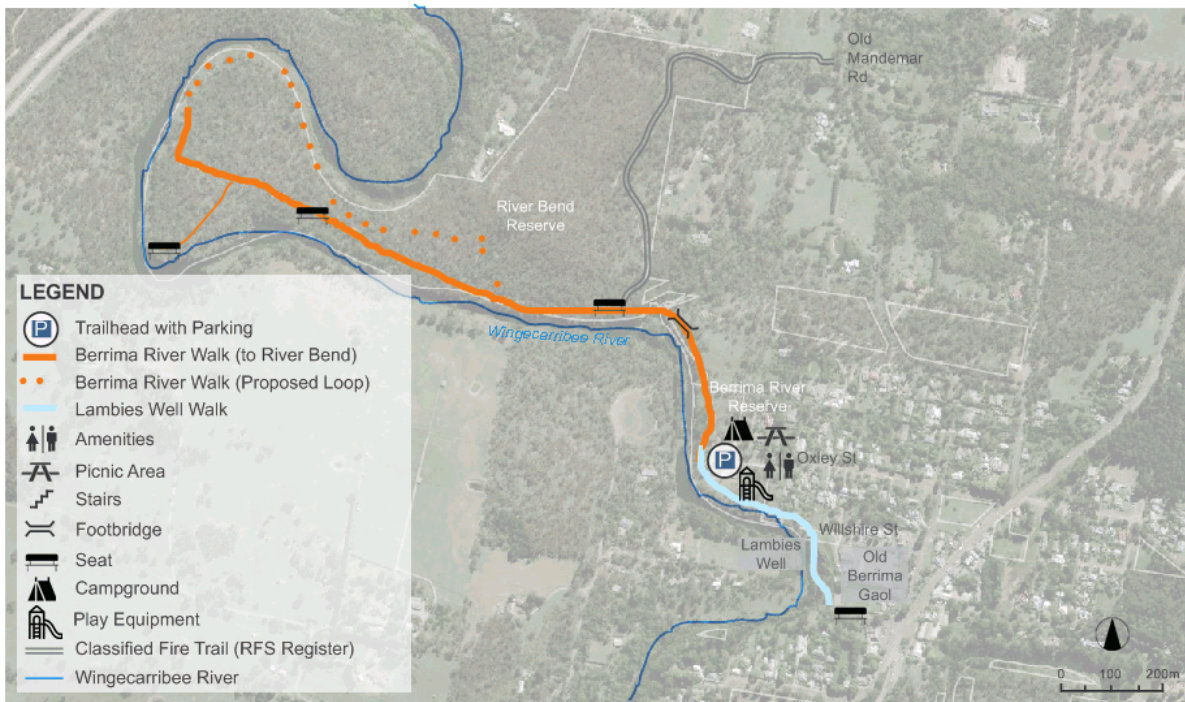
06 Implementation Plan

RIVER BEND RESERVE & BERRIMA RIVER RESERVE

River Bend Reserve and Berrima River Reserve are bushland reserves located along the Wingecarribee River, within close walking distance from the historic town centre of Berrima. The reserves have an important historical context including use for recreation by German internees during WWI. The reserves provide for a range of recreational activities including bushwalking, camping, picnicking, bird watching, fishing and canoeing. Council adopted the *Plan of Management for Berrima River Reserve* in 2009. The reserves are not directly connected, with the existing walking trail situated on various land tenures.



CONCEPT PLAN



TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Berrima River Walk	Walk Only	Grade 2	1 hour RETURN	3.6km RETURN	District
Berrima River Walk Via Proposed Loop	Walk Only	Grade 2	1 hour RETURN	3.6km RETURN	District
Lambies Well Walk	Walk Only	Grade 2	15 min EACH WAY	900m EACH WAY	District



06 Implementation Plan

STRATEGY

B9 Progressively enhance the Berrima River Walk and Lambies Well Walk to provide well defined walking tracks offering opportunities for recreational use, showcase of historical significance and conservation of the environment.

PRIORITY

Medium

RATIONALE

- Trail name varies between signs/brochures (e.g. 'River Walk'; 'WWI German Internee River Walk'; 'Berrima River Walk').
- Beginning of trail from trailhead is not clearly identified.
- Existing trailhead sign is relatively modern, though does not meet Australian Standard 2156.1.
- Car parking requires further management to prevent day users from parking in designated camp sites.
- High quality interpretation signage existing along trail.
- Existing directional/waymarking signage misleading due to location and some arrow directions.
- No reserve entry signage existing at Willshire St Access. Opportunity to provide trail information via QR code for users accessing the reserve at this entry point.
- Requirement for connectivity and consistency of trail across various land tenures.
- Opportunity to enhance trail experience through interpretation signage relating Lambies Well and improved waymarking.
- WSC Parks Strategy (2016)* classifies Berrima River Reserve (Camping Grounds) as a Community Park with Level of Service 2.
- WSC Parks Strategy (2016)* classifies River Bend Reserve as a Bushland Reserve Level of Service 2.
- Active volunteer involvement and stewardship through Berrima Bush Care.

ACTION		TIMEFRAME	COST
B9.1	Establish a management and maintenance agreement with landowners (i.e. Crown Land; Department of Communities and Justice) to ensure ongoing trail connectivity.	Short	Low
B9.2	Formalise car parking arrangements for day users, separate to camp sites.	Short	Low
B9.3	Formalise the existing informal trail alignment to promote a loop for the Berrima River Walk, subject to a vegetation assessment.	Short	Low
B9.4	Replace information panel on trailhead sign to include key trail information for Berrima River Walk and Lambies Well Walk in line with Australian Standard 2156.1. (No.1)	Short	Low
B9.5	Remove existing waymarking/directional signs.	Short	Low
B9.6	Install waymarking signage at key intersections including QR Code with trail map at Willshire St access point and directional signage to historic town centre. (No.~15).	Short	Low
B9.7	Renew toilet block/amenities in Berrima River Reserve (Campground).	Short	High
B9.8	Install interpretation signage at Lambies Well. (No.1).	Medium	Low
B9.9	Review the <i>WSC Parks Strategy (2016)</i> to acknowledge presence of interpretive signs in Berrima River Reserve and picnic facilities in River Bend Reserve.	Medium	Low
B9.10	Progressively renew/replace trail support infrastructure, such as seating.	Long	Low
B9.11	Improve entrance loop road into Berrima River Reserve.	Long	Low*
B9.12	Continue environmental enhancements/re-vegetation.	Ongoing	Low
B9.13	Inspect trails in line with recommended maintenance intervals (Grade 2: 90 days or less), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B9.14	Actively encourage continued volunteer involvement and stewardship of trails and the surrounding environment in Berrima River Reserve and River Bend Reserve.	Ongoing	Low



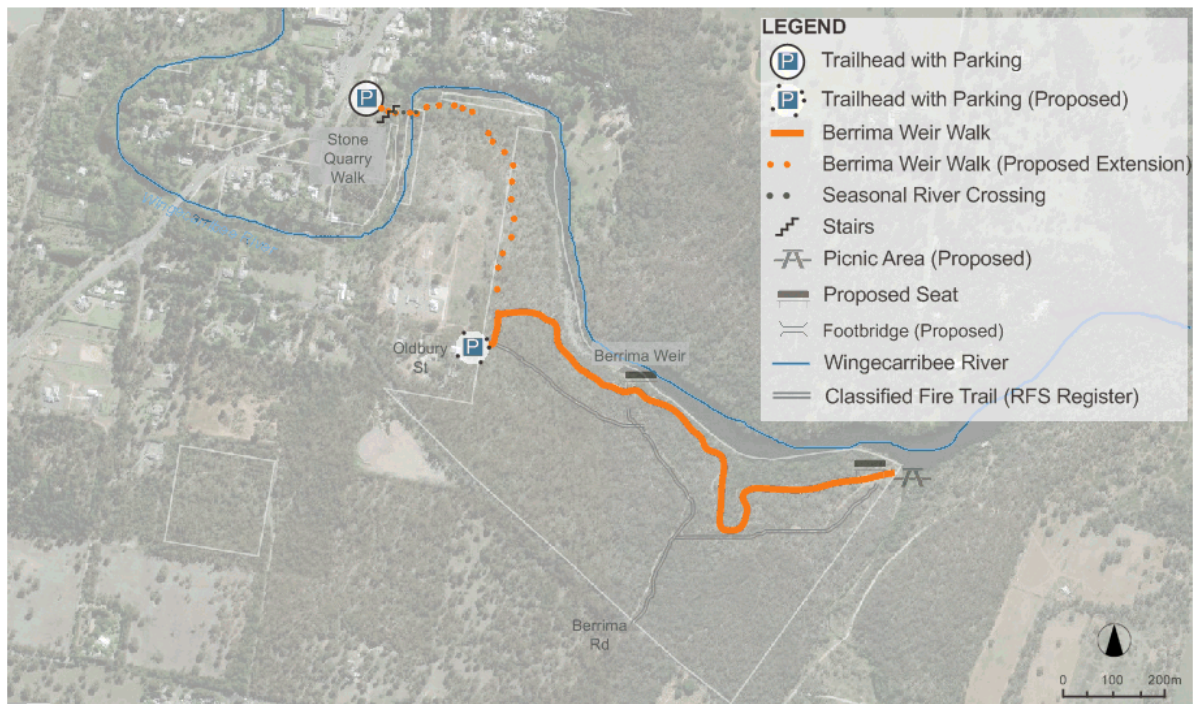
06 Implementation Plan

BERRIMA WEIR RESERVE

Berrima Weir Reserve is a bushland reserve located along the Wingecarribee River, across from the historic town centre of Berrima. The reserve informally caters for a range of recreational pursuits such as bushwalking, fishing, canoeing and off-road cycling. The reserve has informal walking trails and a network of fire trails.



CONCEPT PLAN



PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Berrima Weir Walk	Walk & Cycle	Grade 2	45 min RETURN	2.8km RETURN	District
Berrima Weir Proposed Extension	Walk Only	Grade 3	30 min EACH WAY	2.2km EACH WAY	District



06 Implementation Plan

STRATEGY

B10 Establish a well defined recreational walking track in Berrima Weir Reserve to provide opportunities for recreational use as well as conservation of the environment.

PRIORITY

Low

RATIONALE

- Existing informal network of walking tracks utilising both narrow informal walking tracks and fire trails.
- Reserve used informally for bushwalking, fishing, canoeing and off-road cycling.
- Currently primary access is from entrance on Berrima Road via fire trail to river. Not suitable as trailhead due to limited opportunity for car parking and trailhead infrastructure.
- Proposed development of trailhead at Oldbury Street. Informal walking track existing to weir.
- Proposal for formalisation of walking trail route to be distinguished from fire trail network
- No existing reserve entry signage at Oldbury Street access point or via existing informal river crossing
- Proposed link to Stone Quarry Walk via and Berrima Historic Town Centre through establishment of a footbridge/formal river crossing and proposed trail extension.
- Car parking at Stone Quarry Walk has adequate capacity for increased usage.
- Proposed trail extension requires connectivity and consistency of trail across land tenures between Stone Quarry Walk and Berrima Weir Reserve.
- Caution signage required at Berrima Weir.
- Opportunity to enhance trail experience through waymarking signage at key intersections and interpretation signage relating key trail features such as Wingecarribee River and Berrima Weir.
- Opportunity to enhance trail through installation of seating and picnic facilities at key trail destinations.
- *WSC Parks Strategy (2016)* classifies Berrima Weir Reserve as a Bushland Reserve Level of Service 2.
- Active volunteer involvement and stewardship through Berrima Bush Care.

	ACTION	TIMEFRAME	COST
B10.1	In consultation with Berrima Bush Care, determine a formal name for the identified trail experience (e.g. Berrima Weir Walk).	Short	Low
B10.2	Determine feasibility of connecting the Berrima Weir Walk with Stone Quarry Walk and the Berrima Historic Town Centre via the proposed trail extension and footbridge/river crossing addressing varied land tenure.	Short	Low
B10.3	Establish a Primary Trailhead at Oldbury Street which includes a Primary Trailhead Sign and car parking. Consider options to later integrate the proposed trail extension to Stone Quarry Walk into the Primary Trailhead Sign. (No. 1)	Medium	High
B10.4	Install waymarking signage at key intersections including QR Code with trail map at the Berrima Road access point. (No.~10).	Medium	Low
B10.5	Install picnic table & chair set at the Proposed Picnic Area (Trail destination). (No. 1)	Medium	Low
B10.6	Install seating at Berrima Weir and at the Proposed Picnic Area.	Medium	Low
B10.7	Review the <i>WSC Parks Strategy (2016)</i> to support the establishment of seating, picnic facilities and interpretive signs along Berrima Weir Walk.	Medium	Low
B10.8	Install interpretation signage at key trail features (e.g. Wingecarribee River, Berrima Weir). (No.~3).	Long	Low
B10.9	Formalise river crossing via footbridge to connect Berrima Weir Walk with Stone Quarry Walk and Berrima Historic Town Centre via the proposed trail extension (subject to outcomes of Action B10.2).	Long	Medium
B10.10	Continue environmental enhancements/re-vegetation.	Ongoing	Low
B10.11	Inspect trails in line with recommended maintenance intervals (Grade 2: 90 days or less, Grade 3: 6 months or less), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B10.12	Actively encourage continued volunteer involvement and stewardship of trails and the surrounding environment in Berrima Weir Reserve.	Ongoing	Low



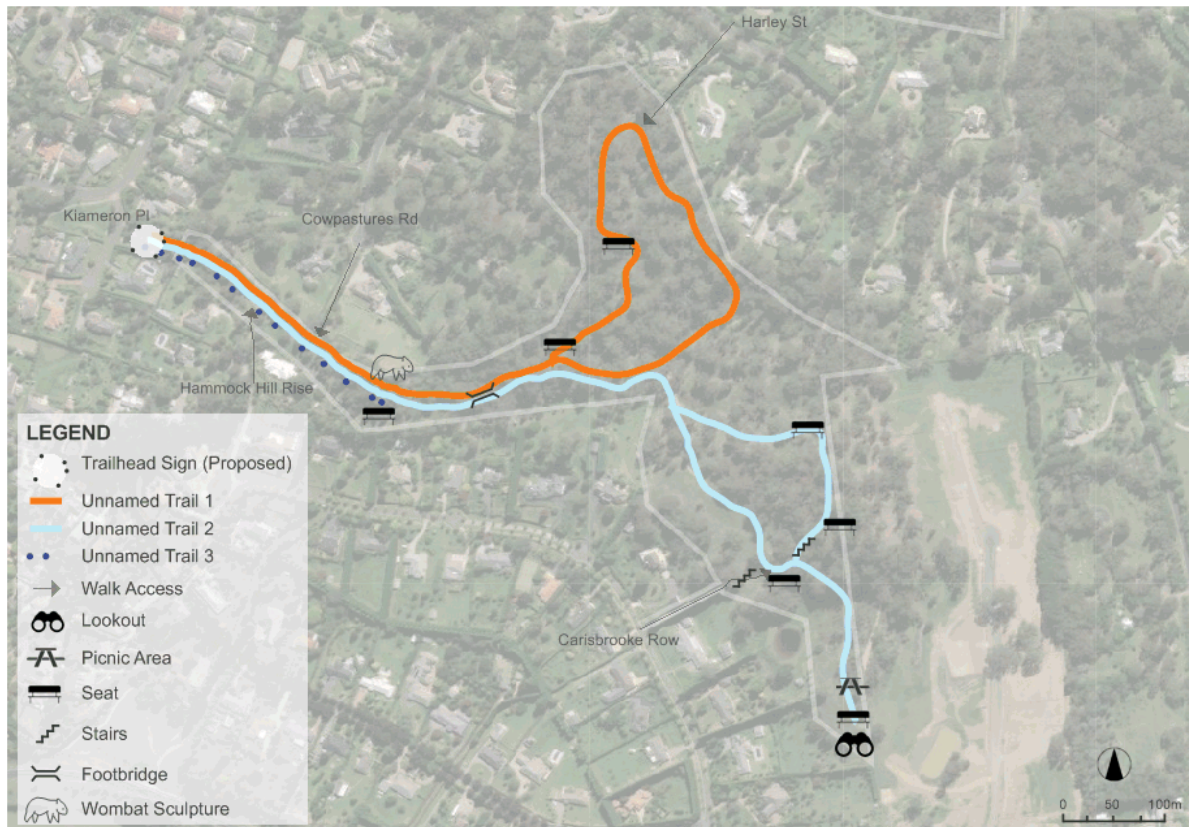
06 Implementation Plan

HAMMOCK HILL RESERVE

Hammock Hill Reserve is a bushland reserve located in East Bowral. The reserve covers an area of approximately 12.0 hectares and plays a significant role in the conservation and protection of the Southern Highlands Shale Woodland Endangered Ecological Community. The reserve contributes substantially to the beauty, character and charm of the local area, and reflects the tranquil surroundings of the region. The reserve provides opportunities for enjoyment of walking and picnicking in a natural setting. The *Hammock Hill Reserve Plan of Management* was adopted by Council in 2009.



CONCEPT PLAN



TRAIL IDENTIFIER	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Unnamed Trail 1	Walk Only	Grade 2	30 min RETURN	1.8km RETURN	Local
Unnamed Trail 2	Walk Only	Grade 3	40 min RETURN	2.5km RETURN	Local
Unnamed Trail 3 Proposed	Walk Only	Grade 1	10 min RETURN	550m RETURN	Local



06 Implementation Plan

STRATEGY

B11 Progressively enhance Hammock Hill Reserve to provide formalised walking tracks offering opportunities for recreational use as well as conservation of the environment.

PRIORITY

Low

RATIONALE

- No formal trail name/s, though informally referred to as 'Wombat Trail'. It is noted that a formalised trail known as 'Wombat Track' exists in nearby Mansfield Reserve.
- Limited capacity for high volumes of reserve usage. Car parking constrained by residential surrounds.
- No existing trailhead signage. Waymarking signage is unserviceable contributing to deviation from trail.
- Opportunity to enhance trail experience through interpretation signage and enhancement of key trail features such as the wombat sculpture, fairy garden and lookout.
- Opportunity to promote accessibility through formalisation of a Grade 1 Accessible Trail.
- *WSC Bicycle Plan (2016)* identifies existing bicycle route connecting Kiameron Place and Harley St. Concern for suitability of the identified bicycle route extension south to the lookout.
- Evidence of unauthorised mountain bike usage with berms and jumps in eastern section of reserve.
- *WSC Parks Strategy (2016)* classifies as a Bushland Reserve with Level of Service 2.
- Active volunteer involvement and stewardship through Hammock Hill Bush Care.

ACTION		TIMEFRAME	COST
B11.1	In consultation with Hammock Hill Reserve Bush Care, determine a formal name for each of the two identified trail experiences.	Short	Low
B11.2	Consolidate trail network to reflect Concept Plan (i.e. decommission tracks not in concept except where required for alternative function) and improve surface of formal trail network.	Short	Low
B11.3	Formalise Unnamed Trail 3 as a Grade 1 Accessible Trail to meet the requirements of Australian Standard 1428 Suite (Design for access and mobility), ensuring continuous accessible paths of travel.	Short	Low
B11.4	Install trailhead signage to include key trail information in line with Australian Standard 2156.1. (No.1).	Short	Low
B11.5	Remove redundant waymarking posts.	Short	Low
B11.6	Install waymarking signage at key intersections and at regular intervals along the route, ensuring that the trail network map is available via QR Code from all access points. (No.~12).	Short	Low
B11.7	Enhance key trail features such as wombat sculpture and garden.	Short	Low
B11.8	Replace damaged seating (near lookout & Carisbrooke Row). (No.2).	Short	Low
B11.9	Install bollard at Cowpastures Road access point to prohibit unauthorised vehicle access. (No.1).	Short	Low
B11.10	Install interpretation signage at key trail features/locations (i.e. lookout, wombat sculpture, environmentally sensitive areas). (No.3).	Medium	Low
B11.11	Review the <i>WSC Bicycle Plan (2016)</i> and reconsider the need of/benefit for a bicycle route to the lookout.	Medium	Low
B11.12	Review the <i>WSC Parks Strategy (2016)</i> and reclassify Hammock Hill Reserve to acknowledge the presence of and requirement for seating, picnic shelter and public art as trail support infrastructure.	Medium	Low
B11.13	Renew picnic table and chair shelter set near lookout to improve this area as key trail destination. (No.1).	Long	Low
B11.14	Continue environmental enhancements/re-vegetation.	Ongoing	Low
B11.15	Inspect trails in line with recommended maintenance intervals (Grade 2: 90 days or less, Grade 3: 6 months or less), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B11.16	Actively encourage continued volunteer involvement and stewardship of trails and the surrounding environment at Hammock Hill Reserve.	Ongoing	Low



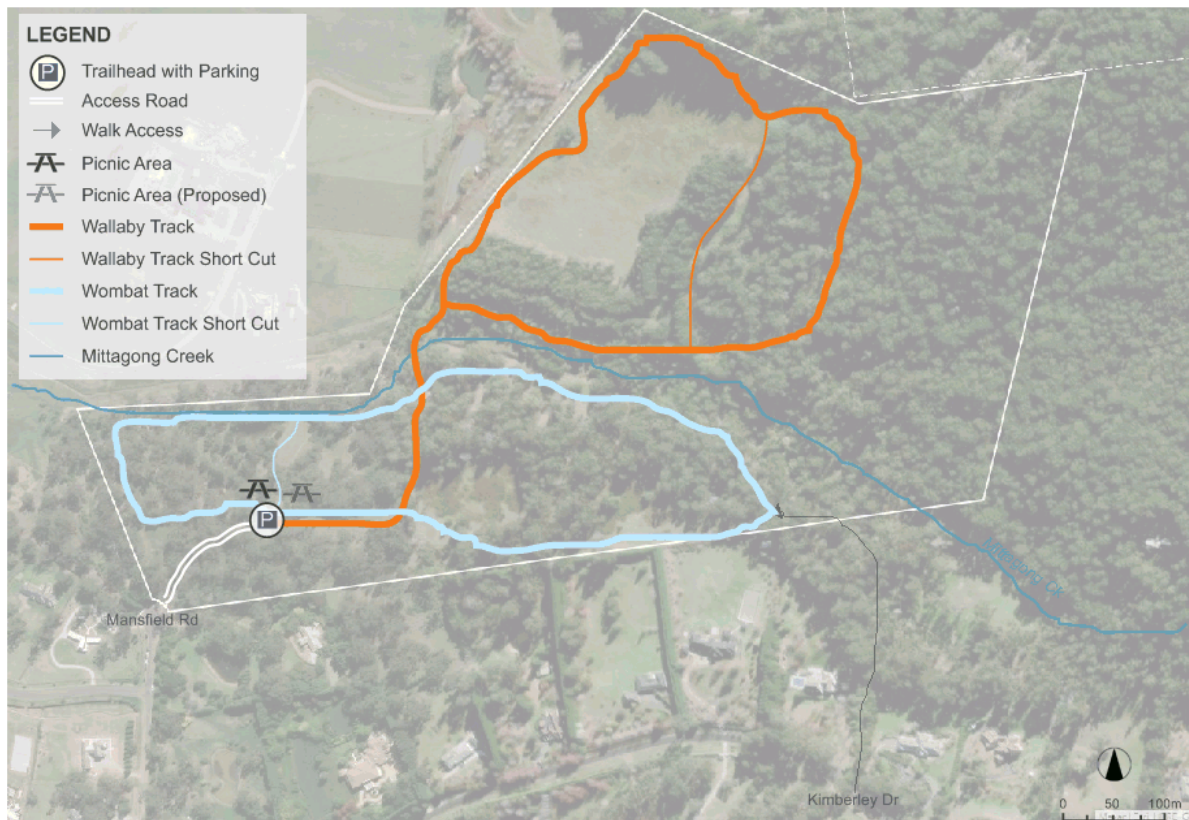
06 Implementation Plan

MANSFIELD RESERVE

Mansfield Reserve is a bushland reserve located in East Bowral. The reserve covers an area of approximately 34.4 hectares and is a significant area of the Southern Highlands Shale Woodland. The reserve has high conservation value including samples of native vegetation types that are classified as endangered and species that are nationally endangered as a result of habitat loss. The reserve provides opportunities for enjoyment of recreational walking and picnicking in a natural setting. The *Mansfield Reserve Plan of Management* was adopted by Council in 2009.



CONCEPT PLAN



PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Wallaby Track	Walk Only	Grade 2	30 min LOOP	2km LOOP	Local
Wombat Track	Walk Only	Grade 2	20 min LOOP	1.5km LOOP	Local



06 Implementation Plan

STRATEGY

B12 Progressively enhance Mansfield Reserve to provide formalised walking tracks offering opportunities for recreational use as well as conservation of the environment.

PRIORITY

Low

RATIONALE

- Existing trail names (Wallaby Track & Wombat Track) are representative of trail experience. Noted that a trail known colloquially as Wombat Trail exists in nearby Hammock Hill Reserve.
- Existing alignment for Wallaby Track does not begin at trailhead. Alignment of Wombat Track unnecessarily incorporates entrance road. Concept Plan proposed both trails beginning from trailhead.
- Distance and time are not clear for the various route options shown on trailhead map.
- Car parking has adequate capacity for increased reserve usage.
- Existing trailhead signage is relatively modern, though does not meet Australian Standard 2156.1.
- Waymarking signage is in poor condition and not effective for providing direction. Colour arrows do not match trailhead map.
- Kimberley Drive access point does not currently have bollards to prevent unauthorised vehicle access.
- Existing reserve entry signage at Kimberley Drive does not provide trail information such as grade. Opportunity to provide trail information via QR code for users accessing the reserve at this entry point.
- Opportunity to enhance trail experience through interpretation signage relating to the environmentally sensitive area, koalas, wombats, reserve history and landscape features.
- Opportunity to enhance trail experience through provision of additional capacity for picnicking at trailhead.
- WSC Parks Strategy (2016)* classifies as a Bushland Reserve with Level of Service 2.
- Active volunteer involvement and stewardship through Mansfield Reserve Bush Care.

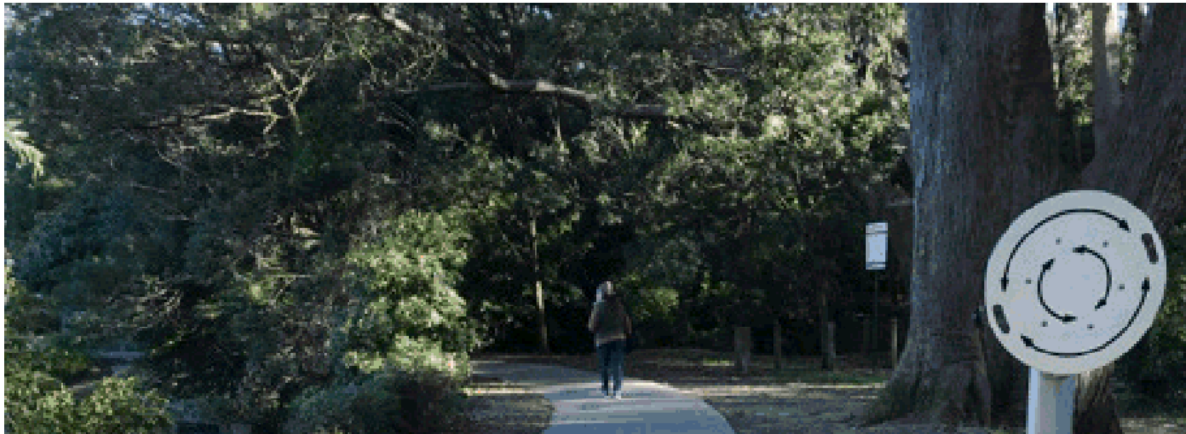
ACTION		TIMEFRAME	COST
B12.1	Consolidate trail network to reflect Concept Plan (i.e. decommission tracks not in concept except where required for alternative function).	Short	Low
B12.2	Replace information panel on trailhead sign to include key trail information in line with Australian Standard 2156.1.	Short	Low
B12.3	Remove redundant waymarking posts.	Short	Low
B12.4	Install waymarking signage at key intersections and at regular intervals along the route, ensuring that the trail network map is available via QR Code from the Kimberley Drive access point. (No.~15).	Short	Low
B12.5	Provide additional picnic table and chair set within Trailhead Zone.	Short	Low
B12.6	Install bollards at Kimberley Drive access point to prohibit unauthorised vehicle access. (No.1)	Short	Low
B12.7	Install interpretation signage at key trail features/locations (i.e. koala/wombat habitat, environmentally sensitive areas, landscape features). (No.3)	Medium	Low
B12.8	Review the <i>WSC Parks Strategy (2016)</i> and reclassify Mansfield Reserve to acknowledge the presence of and requirement for picnic facilities as trail support infrastructure.	Medium	Low
B12.9	Improve the surface of the entrance road and the car park.	Long	Low*
B12.10	Continue environmental enhancements/re-vegetation.	Ongoing	Low
B12.11	Inspect trails in line with recommended maintenance intervals (Grade 2: 90 days or less), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B12.12	Actively encourage continued volunteer involvement and stewardship of trails and the surrounding environment in Mansfield Reserve.	Ongoing	Low



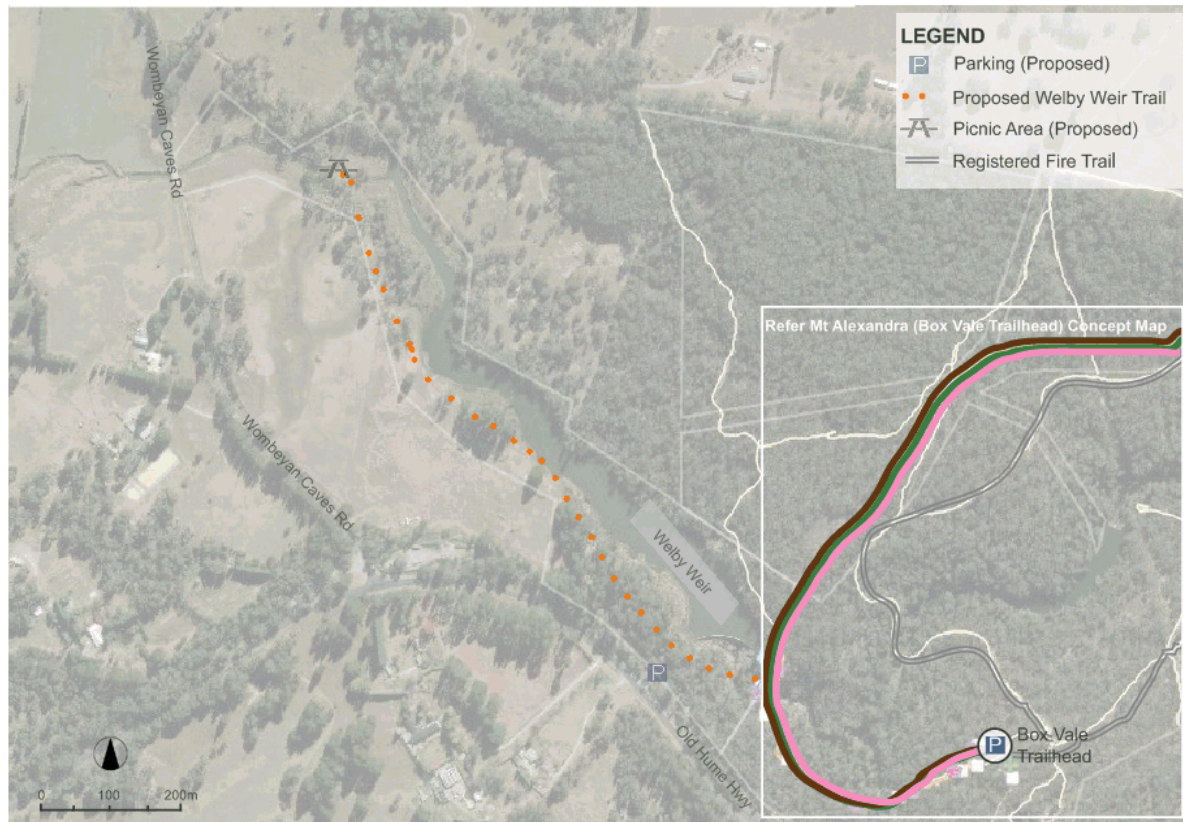
06 Implementation Plan

WELBY WEIR

Welby Weir is an undeveloped bushland reserve located along the Old Hume Highway adjacent to Mt Alexandra Reserve with the weir of the Nattai Creek. The reserve is used for recreational fishing. Walking trails which begin at Box Vale Trailhead pass through the eastern extent of the reserve. The reserve offers opportunity for environmentally-sensitive development, such as a walking track and picnic area, which is likely to require a formalised car parking arrangement accessible from the Old Hume Highway.



CONCEPT PLAN



PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Welby Weir Track	Walk Only	Grade 2	10 min RETURN	1km RETURN	Local



06 Implementation Plan

STRATEGY

B13 Develop Welby Weir Reserve for provision of a formalised walking track along Nattai Creek offering opportunities for recreational use as well as conservation of the environment.

PRIORITY

Low

RATIONALE

- Welby Weir currently utilised informally for recreational pursuits, primarily trout fishing.
- Future opportunity to develop as a recreational destination incorporating a formalised walking track with a designated parking area off Old Hume Highway.
- Opportunity to link with proposed development of Box Vale Trailhead.
- Ongoing requirement to prevent unauthorised vehicle access.
- Bushland restoration occurring as part of the *Nattai Creek-Box Vale Track Restoration Project*.

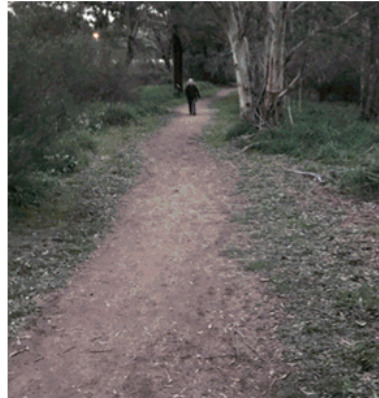
ACTION		TIMEFRAME	COST
B13.1	Prepare a Concept Plan for the development of Welby Weir as a recreational destination incorporating designated car parking and provisions for picnicking and a walking trail which connects to the walking trail network in Mt Alexandra Reserve.	Short	Medium
B13.2	Implement the Concept Plan for Welby Weir developed in Action B13.1.	Medium	High
B13.3	Continue environmental enhancements/re-vegetation.	Ongoing	Low
B13.4	Actively encourage continued volunteer involvement and stewardship of bushland and trails surrounding Welby Weir.	Ongoing	Low



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BONG BONG COMMON (LINK TO CECIL HOSKINS NATURE RESERVE)

Bong Bong Common is a large linear open space with a sealed shared-use path along the Wingecarribee River between the towns of Moss Vale and Burradoo. The south eastern extent of the reserve provides connectivity to Cecil Hoskins Nature Reserve via an established decomposed granite path. Cecil Hoskins Nature Reserve is a wetland area managed by NSW National Parks and Wildlife Service (NPWS) providing opportunities for walking, picnicking and birdwatching. The *Bong Bong Common Masterplan* (2019) illustrates the plan for this reserve which incorporates signage and infrastructure to improve this link between the reserves.



CONCEPT PLAN



PROPOSED TRAIL NAME	PROMOTED USERS	GRADE / DIFFICULTY	ESTIMATED TIME	TRAIL LENGTH	HIERARCHY
Cecil Hoskins Link Track	Walk Only	Grade 2	N/A <small>Access to other trail/s</small>	170m EACH WAY	District



06 Implementation Plan

STRATEGY

B14 Enhance connectivity for walkers between Bong Bong Common and Cecil Hoskins Nature Reserve.

PRIORITY

Low

RATIONALE

- The Council-adopted *Bong Bong Common Masterplan* (2019) illustrates the plan for this reserve which incorporates signage and infrastructure to improve this link between the reserves.
- Bong Bong Common and Cecil Hoskins Nature Reserve are highly valued and used recreational destinations within sensitive natural environments.
- Shared-use path network which traverses through Bong Bong Common and along Argyle Street provides connectivity for active transport. Cycleway does not extend into this section of the reserve. Bikes are prohibited in Cecil Hoskins Nature Reserve.
- Existing decomposed granite trail surface between reserves is in good condition.
- Existing interpretation signage along the trail is in good condition and enhances the trail experience.
- Opportunity to enhance the trail experience and connectivity between the reserves by installing trailhead signage with directional totem at the Argyle Road access point, in line with the *Bong Bong Common Masterplan* (2019).
- Car parking at Argyle Street adequate for high volumes of reserve usage.
- *WSC Parks Strategy* (2016) classifies Bong Bong Common as a Linear Park with Level of Service 2.
- Active volunteer involvement and stewardship at Bong Bong Common through WSC Rivercare Group.

	ACTION	TIMEFRAME	COST
B14.1	Install a trailhead sign to include key trail information for Bong Bong Common and Cecil Hoskins Nature Reserve in line with Australian Standard 2156.1. Consider options to later integrate the new trail developments proposed in the <i>Bong Bong Common Masterplan</i> (2019).	Short	Low
B14.2	In line with the <i>Bong Bong Common Master Plan</i> (2019) install a seat at the 'key vista' overlooking the Wingecarribee River along the link track.	Medium	Low
B14.3	In line with the <i>Bong Bong Common Master Plan</i> (2019) install wayfinding signage (No.~2) which incorporates the link track to Cecil Hoskins Nature Reserve.	Medium	Low
B14.4	Maintain existing interpretation signage along the trail and replace when at the end of useful life.	Long	Low
B14.5	Inspect trail in line with recommended maintenance intervals (Grade 2: 90 days or less), to ensure surface is kept in line with requirement for grade of trail and management of risk.	Ongoing	Low
B14.6	Actively encourage continued volunteer involvement and stewardship of trails and the surrounding environment in Bong Bong Common.	Ongoing	Low
B14.7	Maintain a working relationship with NPWS to ensure alignment of plans for enhancing connectivity between Bong Bong Common and Cecil Hoskins Nature Reserve.	Ongoing	Low



06 Implementation Plan

STRATEGIC OUTCOME C: INFORMATION, PROMOTION AND MARKETING

STRATEGY

C1 Provide consistent and reliable signage, maps and supporting information for walking tracks.

PRIORITY

High

RATIONALE

Trail signage has been identified as a key issue on the existing walking tracks through community consultation and on-ground site visits. Installing effective trail signage is a key component to upgrading each of the walking tracks to enhance trails for both enjoyment and safety. Australian Standard *AS2156.1 Walking Tracks Classification and Signage* outlines the requirements for trail signage. Signage on the walking tracks generally does not meet this standard and requires upgrade. Templates for trail signage have been provided as part of this Strategy (refer Appendix) and it is intended that this will be used to clearly define the walking trail experiences. It is important that trails have effective signage which aligns with the requirements for their level of difficulty/classification.

The website www.visitsouthernhighlands.com.au provides information about opportunities to walk in the Shire and it is important that this is continually updated, particularly to align with the outcomes of this Strategy. The limited existing information relating to walking tracks across the region is generally inconsistent, outdated and unreliable. A range of books have been published which contain historic information relating to original walking tracks, particularly for tracks within Mount Alexandra Reserve. Information relating to walking tracks in the Wingecarribee Shire is also available on a range of third-party online sources.

As part of the development of this Strategy, existing trails were audited, including ground-truthed mapping layers of trail alignments. This information can now be used to develop reliable trail maps and supporting information which can be in printed form, online content and integrated into interactive online applications.

It is important that trail maps and information are presented in a range of formats including online, via web apps and as printed information for distribution at the Southern Highlands Welcome Centre. It is also important that out-dated trail information is removed from circulation, noting that some sources could be placed in historical archives noting the strong community initiative in early trail developments.

	Action	Timeframe	Cost
C1.1	Develop a series of trail user maps/ brochures that are consistent in terms of design and levels of information provided – available as printed copies at the Southern Highlands Welcome Centre and available online for download.	Short	Low
C1.2	Review and expand on the webpage hosted at www.visitsouthernhighlands.com.au to ensure that all trails are promoted with clear distinction of their alignment and trail grade/difficulty (Grade 1 - 5 rating) in line AS2156.1.	Short	Low
C1.3	Distribute the endorsed trail network concept maps to known publishers of trail related information across the Southern Highlands to encourage consistency of information.	Short	Low
C1.4	Investigate options for the provision and maintenance of interactive trail mapping via a mobile app. Consider options for in-house app development using ground-truthed trail data, as well as use of third party apps (e.g. Avenzamaps, Gaia GPS).	Short	Low
C1.5	Promote the 'Three Peaks Trail' (refer Action B1.6) as a key integrated walking track opportunity which identifies key iconic lookouts surrounding Mittagong.	Medium	Low
C1.6	Develop a coordinated approach to marketing of recreational walking tracks (as well as other recreational trails) and integrate this approach into tourism strategic planning. Consider opportunities to 'package' nature-based experiences together.	Medium	Low
C1.7	Expand on the number of walks currently promoted as the '5 Best Walks of the Southern Highlands' to include a broader selection including a variety of grades/difficulty levels. Promote this as a 'booklet' with a map of each trail - available as printed copies at the Southern Highlands Welcome Centre and available online for download.	Medium	Low
C1.8	Install/upgrade trailhead, wayfinding/directional, management/warning and interpretation signage using the templates provided to align with requirements specified in <i>AS2156.1 Walking Tracks Classification and Signage</i> (refer also actions contained within Strategic Outcome B).	Ongoing	High
C1.9	Ensure that sufficient resources are budgeted for periodic reviews and updates of trail maps and information including on-ground signage, online and printed resources.	Ongoing	Low



06 Implementation Plan

STRATEGIC OUTCOME D: MANAGEMENT & MAINTENANCE

STRATEGY

D1 Clearly define management structures and maintenance schedules for walking tracks.

PRIORITY

High

RATIONALE

To ensure that all walking tracks are managed appropriately, management responsibilities must be clearly identified, alongside the development of maintenance schedules. Where trails cross multiple land tenures it is essential that trail management and maintenance responsibilities are assigned to a designated body, which may be Council or an established community group with the necessary resources and expertise.

Australian Standard *AS2156.1 Walking Tracks Classification and Signage* outlines guidance for managers relating to each grade of walking track classification, such as recommended inspection intervals for each grade of walking track. The relevant inspection interval for each trail is specified within the actions in Strategic Outcome B.

Risks associated with walking tracks can also be managed through planning and mitigation measures such as periodic inspection and maintenance intervals, restricting access to reserves on high risk days (e.g. days at risk of bushfire or flood events) and through clear communication of risks associated with the walking trails experience on offer.

	Action	Timeframe	Cost
D1.1	Establish a Recreational Trails Working Group to manage the implementation of the Recreational Walking Tracks Strategy. Refer also Action A1.1.	Short	Low
D1.2	Formalise a system for the closure of reserves to public/unauthorised access on days of "high" risk (e.g. days at risk of bushfire or flood events) and the process for the communication of this to the community.	Short	Low
D1.3	Develop a management and maintenance manual as a guide for all trail managers, community and volunteer groups.	Short	Low
D1.4	Update existing and develop new Plans of Management for all bushland reserves, integrating trail management and maintenance requirements and management of risk to reserve users.	Short	Medium
D1.5	With the development of a Plan of Management incorporating Mt Alexandra Reserve, consider re-naming as 'Greater Mt Alexandra Reserve' to reflect the inclusion of the extensive bushland areas incorporating trails accessible from both Box Vale Trailhead and Lake Alexandra Trailhead, as well as the bushland beyond linking to Colo Vale.	Short	Low
D1.6	Ensure that sufficient resources are budgeted for periodic trail inspections and maintenance on trail surfaces and infrastructure, in line with maintenance intervals outlines in <i>Australian Standard AS2156.1 Walking Tracks Classification and Signage</i> .	Ongoing	Low
D1.7	Integrate post bushfire and flood inspections into Council's works program.	Ongoing	Low



06 Implementation Plan

STRATEGIC OUTCOME E: COMMUNITY, TOURISM & ECONOMIC DEVELOPMENT

STRATEGY

E1 Use trail development and provision as a tool for economic and community development.

PRIORITY

High

RATIONALE

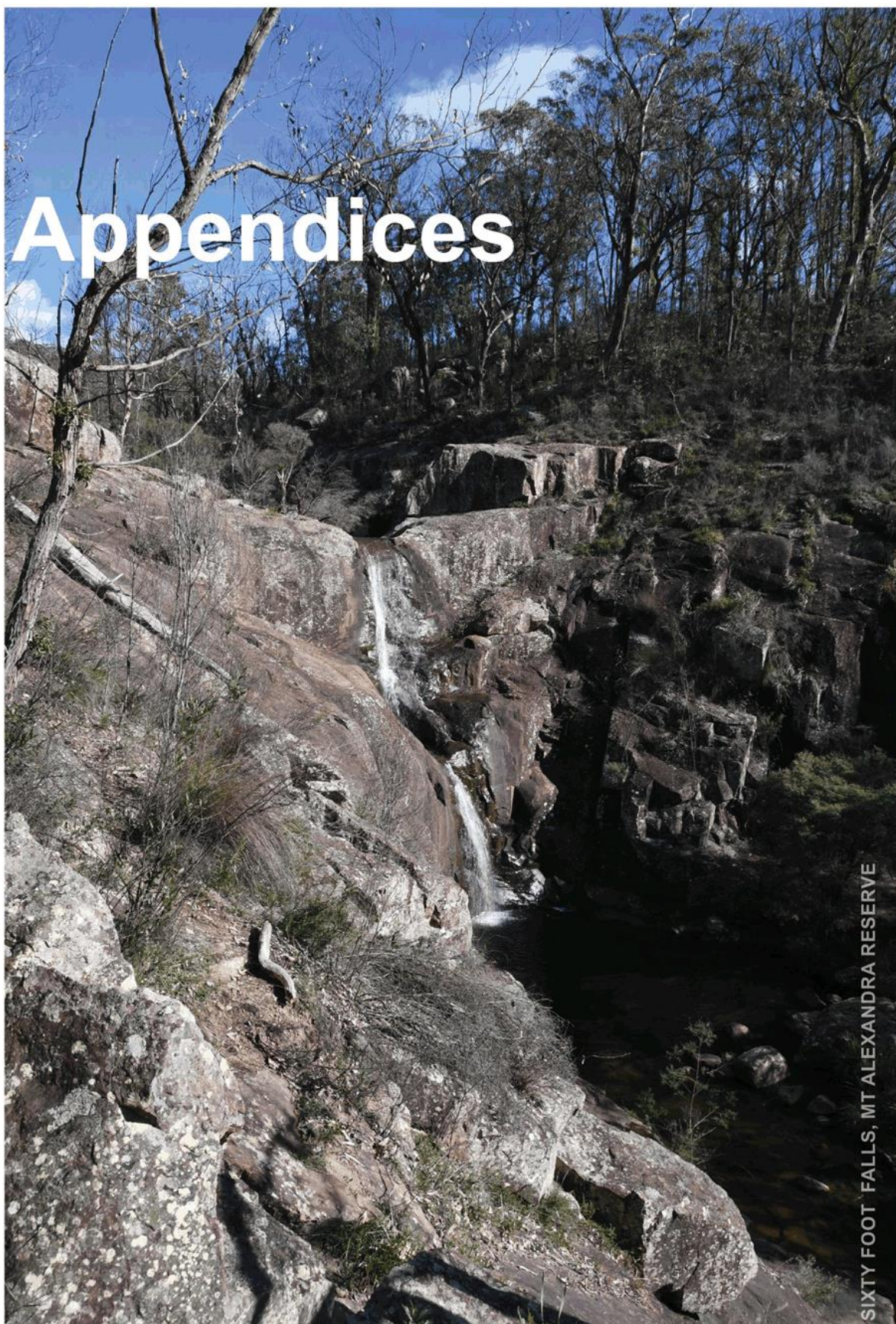
Sustainable and accessible walking tracks are able to bring significant benefits to the region, particularly from health, economic and tourism perspectives.

The Southern Highlands has a wide variety of walking tracks which suit a range of abilities and fitness levels. For example, from the Grade 1 Bowral Lookout Trail (Mt Gibraltar Reserve) and Lake Alexandra Circuit, to the challenging and iconic Grade 5 walks in Mt Alexandra Reserve (Nattai Loop Track and Mountain Circuit). This variety of trails provides experiences for a wide range of people, encouraging active and healthy lifestyles and recreational pursuits.

The development of special events in the region that use the walking tracks as their principle facility should be supported to assist in raising the profile of the trails network and providing economic spinoffs to the communities that host the events. These may include events such as fun runs, orienteering competitions, bushwalking programs and nature-based education programs.

There is an opportunity to establish the Southern Highlands as a key outdoor recreation and nature-based tourism destination which could provide significant economic and tourism benefits to the region.

	Action	Timeframe	Cost
E1.1	Use Indigenous naming and incorporate Indigenous cultural context into walking tracks and their surrounds where appropriate and supported.	Ongoing	Low
E1.2	Support the establishment of regular programs and special events using walking tracks (e.g. walking groups, bird watching events, environmental education events).	Ongoing	Low
E1.3	Encourage trail users to visit towns across the Southern Highlands through installation of directional signage where economic centres are within walking distance. For example, directional signage in Berrima River Reserve outlining 'Historic Town Centre 200m'.	Ongoing	Low
E1.4	Encourage businesses (e.g. tour operators, associated retail outlets, hospitality venues, accommodation providers) to promote and utilise walking tracks, with opportunities to contribute to the delivery of 'tourism packages' targeted at nature-based tourism markets.	Ongoing	Low
E1.5	Encourage trail managers and interest groups to share trail information, such as maps/data, trail and asset management resources.	Ongoing	Low





Appendices

List of Appendices

Appendix 1: Signage Template

Appendix 2: Inspection Intervals

Appendix 3: Funding Opportunities

Appendix 4: Order of Probable Costs



Appendices

Appendix 1: Signage Templates



Trail Network or Reserve Name

Sub-Heading



Trail Network Map to include:

- Scale
- North arrow
- Legend
- Trail alignment (colour coded)
- Key trail features (e.g. lookouts)
- Key support infrastructure (e.g. picnic areas, car parking area)
- Key landscape features (e.g. rivers/creeks, contours if relevant)
- Key reference points (e.g. town centre, road names)

Introduction

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Environmental Sensitivities

Example - Endangered Ecological Communities

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Safety/Management

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Land Manger/emergency contact details:

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Download Map Here

Scan the QR code below for a free map download:



Trail Classification System

Grade 1 No bushwalking experience required. Flat even surface with no steps or steep sections. Suitable for wheelchair use.	Grade 2 No bushwalking experience required. The track is a hardened or compacted surface and may have a gentle hill section or sections and occasional steps.	Grade 3 Some bushwalking experience recommended. Tracks may have short steep hill sections, a rough surface and many steps.	Grade 4 Bushwalking experience recommended. Tracks may be long, rough and very steep.	Grade 5 Very experienced bushwalkers with specialised skills, including navigation and emergency first aid. Tracks are likely to be very rough, very steep and unmarked.
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Trails

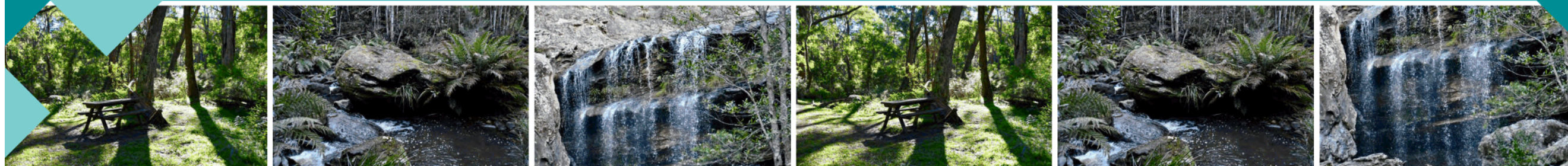
Name of Trail	Name of Trail	Name of Trail	Name of Trail
Distance xxxkm. Time xx hrs / xx mins 	Distance xxxkm. Time xx hrs / xx mins 	Distance xxxkm. Time xx hrs / xx mins 	Distance xxxkm. Time xx hrs / xx mins
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Trail Network or Reserve Name

Sub-Heading



Introduction

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Environmental Sensitivities

Example - Endangered Ecological Communities

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Safety/Management

Advice:

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Land Manger/emergency contact details:

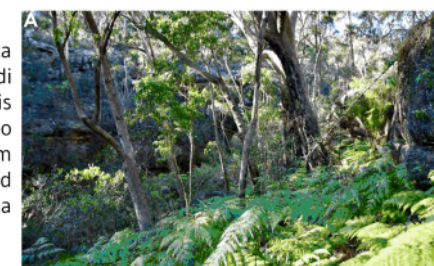
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Native Flora and Fauna

Example - A

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Example - B

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Example - C

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Example - D

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Trail Classification System

Grade 1
 No bushwalking experience required. Flat even surface with no steps or steep sections. Suitable for wheelchair use.

Grade 2
 No bushwalking experience required. The track is a hardened or compacted surface and may have a gentle hill section or sections and occasional steps.

Grade 3
 Some bushwalking experience recommended. Tracks may have short steep hill sections, a rough surface and many steps.

Grade 4
 Bushwalking experience recommended. Tracks may be long, rough and very steep.

Grade 5
 Very experienced bushwalkers with specialised skills, including navigation and emergency first aid. Tracks are likely to be very rough, very steep and unmarked.





Trail Network or Reserve Name

Trail Network Map

Trail Network Map to include:

- Scale
- North arrow
- Legend
- Trail alignment (colour coded)
- Key trail features (e.g. lookouts)
- Key support infrastructure (e.g. picnic areas, car parking area)
- Key landscape features (e.g. rivers/creeks, contours if relevant)
- Key reference points (e.g. town centre, road names)

Trail Network Map to include:

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- Key reference points (e.g. town centre, road names)

Trails

<p>Name of Trail</p> <p>Distance xxxkm.</p> <p>Grade x </p> <p>Time xx hrs / xx mins</p> <p>Trail Description/Overview Description of trail - Description of trail - Description of trail - Description of trail</p>	<p>Name of Trail</p> <p>Distance xxxkm.</p> <p>Grade x </p> <p>Time xx hrs / xx mins</p> <p>Trail Description/Overview Description of trail - Description of trail - Description of trail - Description of trail</p>	<p>Name of Trail</p> <p>Distance xxxkm.</p> <p>Grade x </p> <p>Time xx hrs / xx mins</p> <p>Trail Description/Overview Description of trail - Description of trail - Description of trail - Description of trail</p>	<p>Name of Trail</p> <p>Distance xxxkm.</p> <p>Grade x </p> <p>Time xx hrs / xx mins</p> <p>Trail Description/Overview Description of trail - Description of trail - Description of trail - Description of trail</p>	<p>Name of Trail</p> <p>Distance xxxkm.</p> <p>Grade x </p> <p>Time xx hrs / xx mins</p> <p>Trail Description/Overview Description of trail - Description of trail - Description of trail - Description of trail</p>	<p>Name of Trail</p> <p>Distance xxxkm.</p> <p>Grade x </p> <p>Time xx hrs / xx mins</p> <p>Trail Description/Overview Description of trail - Description of trail - Description of trail - Description of trail</p>	<p>Name of Trail</p> <p>Distance xxxkm.</p> <p>Grade x </p> <p>Time xx hrs / xx mins</p> <p>Trail Description/Overview Description of trail - Description of trail - Description of trail - Description of trail</p>	<p>Name of Trail</p> <p>Distance xxxkm.</p> <p>Grade x </p> <p>Time xx hrs / xx mins</p> <p>Trail Description/Overview Description of trail - Description of trail - Description of trail - Description of trail</p>
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Download Map Here

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Wingecarribee Signage Suite

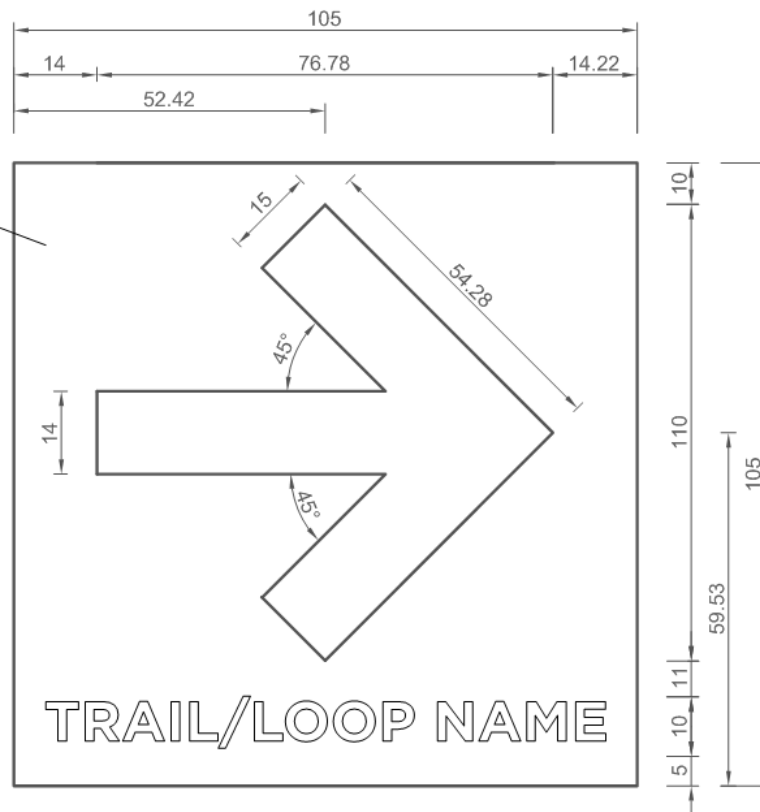
Wayfinding Signage

Waymarker Concept and Dimensions

Scale 1:1 @ A4

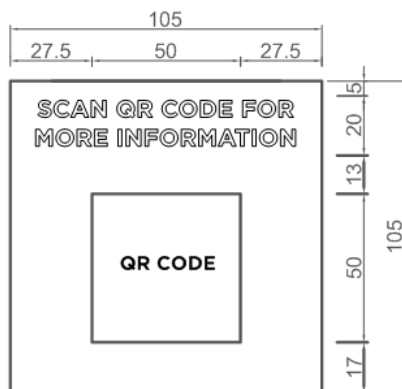
1.6mm aluminium symbol plate with painted arrow and text to be fixed to existing 125mm wide totem poles.

Refer to following pages for Waymarker Placement, Arrow Orientation and Colour Palette.



QR Code Marker Dimensions

Scale 1:2 @ A4



Carpark Distance Marker Dimensions

Scale 1:2 @ A4



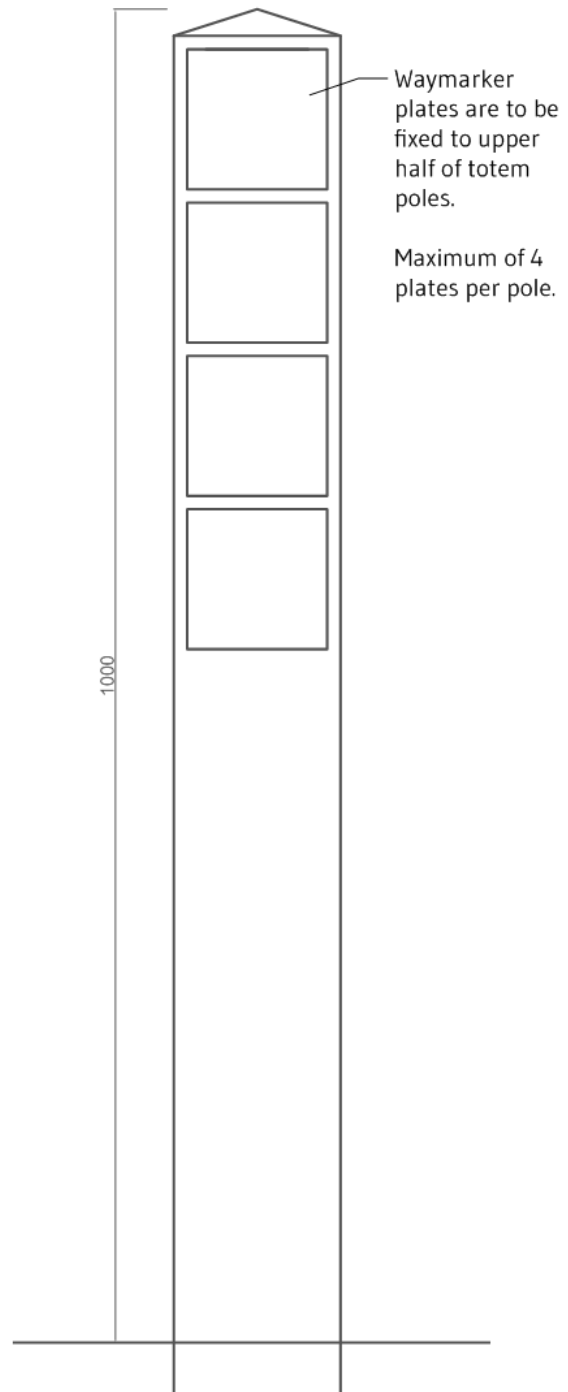
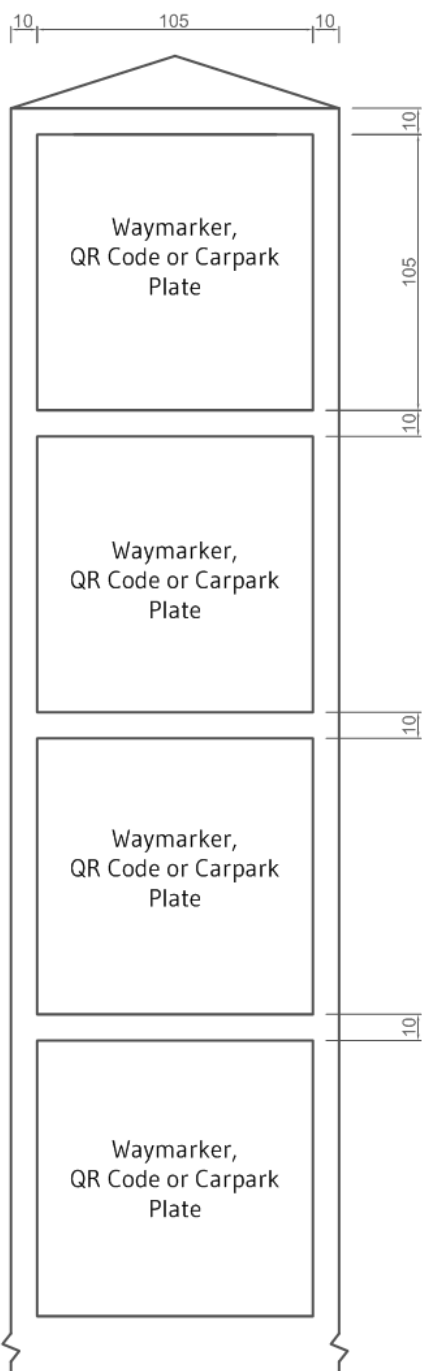


Wingecarribee Signage Suite

Wayfinding Signage

Waymarker Placement

Not to Scale





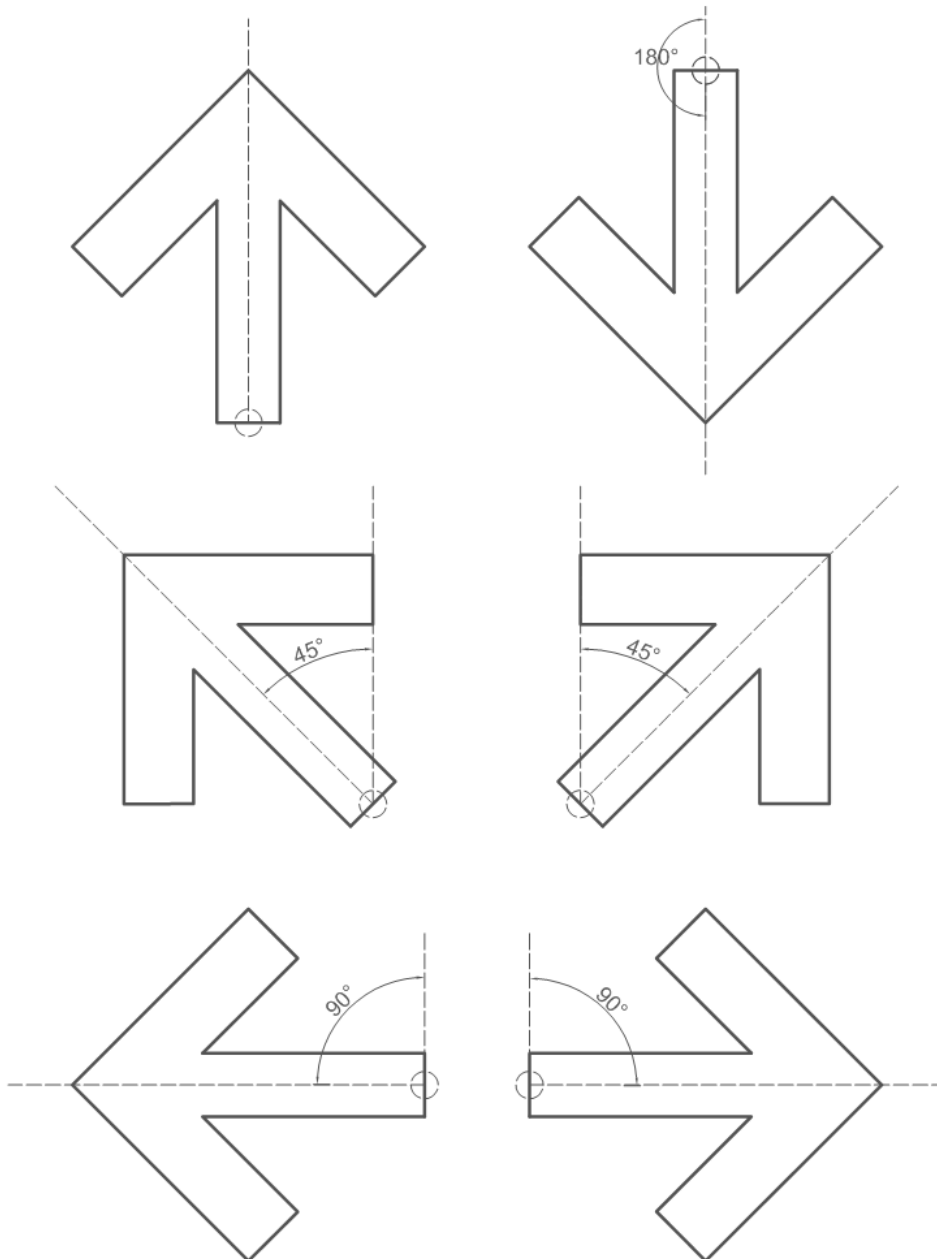
Wingecarribee Signage Suite

Wayfinding Signage

Waymarker Arrow Orientation

Scale 1:2 @ A4

Arrows are to be oriented at 90° and 45° angles only.





Wingecarribee Signage Suite

Wayfinding Signage

Colour Palette

Colour of waymarkers and track identification are to where possible utilise the Shire of Wingecarribee Brand Style Guides Colour Palette.

It is recommended that only one colour from each of the Teal, Red, Navy and Green colour palettes below are used at a single trail network to ensure a suitable contrast of colours between waymarking signs.

Where necessary, for example if there is more than four trails, more colours may be utilised from outside of the Shires identified color palette to ensure a broad spectrum of colours to eliminate confusion between trails.

PMS white arrow and/or text to be painted over selected background colour.



*Not to scale - colour reference only




TEAL

Light		C50 M0 Y22 K0 R121 G205 B205 PMS 630 C
Mid		C67 M0 Y25 K10 R50 G175 B182 PMS 2233 C
Dark		C80 M10 Y30 K20 R0 G142 B152 PMS 321 C




NAVY

Light		C80 M30 Y10 K50 R0 G86 B116 PMS 2161 C
Mid		C95 M55 Y20 K60 R0 G51 B82 PMS 7463 C
Dark		C100 M50 Y35 K75 R0 G37 B54 PMS 546 C

RED

Light		C0 M90 Y75 K0 R239 G64 B68 PMS 1788 C
Mid		C10 M95 Y85 K10 R199 G45 B50 PMS 711 C
Dark		C20 M100 Y90 K20 R167 G27 B40 PMS 187 C

GREEN

Light		C50 M0 Y100 K0 R141 G198 B63 PMS 7488 C
Mid		C55 M0 Y100 K15 R110 G170 B57 PMS 7737 C
Dark		C60 M0 Y100 K30 R81 G144 B50 PMS 363 C



Appendices

Appendix 2: Inspection Intervals



Appendices

The following table provides an indicative guide to assist Council in determining the appropriate intervals for inspections of walking tracks, according to *Australian Standard 2156.1 – 2001: Walking Tracks Part 1- Classification and Signage*. The table provides the identified walking track's name, grade, applicable risk management guidelines, and guide to the frequency and timing of inspections across the calendar year.

Inspection Intervals - Guide only

Trail Name	Grade	AS 2156.1-2001 Risk Management	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Mt Alexandra Reserve (primary access from Box Vale Trailhead)														
Box Vale Track	3	Built elements will be inspected and maintained regularly. Any built facilities will be managed for public risk. Inspection interval: 6 month or less			√						√			
40 Foot Falls Track (Box Vale Trailhead to Falls)	4	Tracks will be inspected on a regular basis and after major natural events such as cyclones or fires. Any built facilities will be managed for public risk. Inspection interval: 6 to 12 months.			√*						√*			
Nattai Loop Track	5	Tracks will not be managed for public risk. Users will be responsible for personal safety and need to exercise appropriate care.									√^			
Mt Alexandra Reserve (primary access from lake Alexandra Trailhead)														
Katoomba Lookout Trail	3	Built elements will be inspected and maintained regularly. Any built facilities will be managed for public risk. Inspection interval: 6 month or less			√						√			
Boulder Valley Track	4	Tracks will be inspected on a regular basis and after major natural events such as cyclones or fires. Any built facilities will be managed for public risk. Inspection interval: 6 to 12 months.			√*						√*			
40 Foot Falls Track (Lake Alexandra to Falls)	4				√*						√*			
60 Foot Falls Track	4				√*						√*			
Big Rock Link Track	4				√*						√*			
Mountain Circuit	5	Tracks will not be managed for public risk. Users will be responsible for personal safety and need to exercise appropriate care.												
Lake Alexandra Reserve														
Lake Alexandra Circuit	1	Tracks and adjacent natural and built elements will be inspected and maintained regularly. Inspection interval: 30 days or less	√	√	√	√	√	√	√	√	√	√	√	√



Appendices

Trail Name	Grade	AS 2156.1-2001 Risk Management	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Mount Gibraltar Reserve														
Bowral Lookout Trail	1	Tracks and adjacent natural and built elements will be inspected and maintained regularly. Inspection interval: 30 days or less	√	√	√	√	√	√	√	√	√	√	√	√
Heritage Quarries Track	3	Built elements will be inspected and maintained regularly. Any built facilities will be managed for public risk. Inspection interval: 6 months or less			√						√			
Rim Track	3				√						√			
Reservoir Ravine Track	4	Tracks will be inspected on a regular basis and after major natural events such as cyclones or fires. Any built facilities will be managed for public risk. Inspection interval: 6 to 12 months.			√*						√*			
Gibbergunyah Reserve														
Geebung Track	3	Built elements will be inspected and maintained regularly. Any built facilities will be managed for public risk. Inspection interval: 6 month or less			√						√			
Gibbergunyah Walk	4	Tracks will be inspected on a regular basis and after major natural events such as cyclones or fires. Any built facilities will be managed for public risk. Inspection interval: 6 to 12 months.			√*						√*			
The Glen Track	4				√*						√*			
Hammock Hill														
Unnamed Trail 1	2	Tracks and adjacent natural and built elements will be inspected and maintained regularly. Inspection interval: 90 days or less		√			√			√			√	
Unnamed Trail 2	3	Built elements will be inspected and maintained regularly. Any built facilities will be managed for public risk. Inspection interval: 6 months or less		√						√				
Mansfield Reserve														
Wallaby Track	2	Tracks and adjacent natural and built elements will be inspected and maintained regularly. Inspection interval: 90 days or less		√			√			√			√	
Wombat Track	2				√			√			√			√
Bundanoon														
Governors Road Walking Track	2	Tracks and adjacent natural and built elements will be inspected and maintained regularly. Inspection interval: 90 days or less		√			√			√			√	



Appendices

Trail Name	Grade	AS 2156.1-2001 Risk Management	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Glow Worm Glen - William St Access	3	Built elements will be inspected and maintained regularly. Any built facilities will be managed for public risk. Inspection interval: 6 month or less		√						√				
Bong Bong Common (Link to Cecil Hoskins Nature Reserve)														
Cecil Hoskins Link Track	2	Tracks and adjacent natural and built elements will be inspected and maintained regularly. Inspection interval: 90 days or less		√			√			√			√	
Berrima														
Berrima River Trail	2	Tracks and adjacent natural and built elements will be inspected and maintained regularly. Inspection interval: 90 days or less		√			√			√			√	
Lambies Well	2			√			√			√			√	
Berrima Weir Walk	2			√			√			√			√	
Stone Quarry Walk	3	Built elements will be inspected and maintained regularly. Any built facilities will be managed for public risk. Inspection interval: 6 month or less					√						√	

√* - Inspection interval has a range (6-12 months), however it is recommended that tracks with high levels of built features and usage are inspected more frequently than 12-monthly.

√^ -Level 5 classification notes that tracks will not be managed for public risk, however because there are built features associated with the track it is recommended that it be inspected once a year.



Appendices

Appendix 3: Funding Opportunities



Appendices

A variety of external funding sources to support the development of recreational facilities, such as trails, are potentially available for the implementation of the Strategy, as outlined below. Funding can be procured from a variety of sources locally and at state and federal levels. These programs change regularly, and it is important to contact the funding agency/organisation to get up to date details on funding guidelines and determine eligibility and a funding strategy eligibility.

Sport NSW Grants Schedule Summary

As part of Sport NSW's commitment to advocating for and strengthening the sports sector - grants information is provided as a Sport NSW Grants Schedule Summary document which is regularly updated to making this information easily accessible and in one place.

This regularly updated Grants Schedule is available online via

<https://www.sportnsw.com.au/resources--reports/grants/>

NSW Government

Current or recent grant programs available through the NSW Government which may be relevant to the implementation of this Strategy include:

- Community Building Partnership Program
- Stronger Country Communities Fund
- Regional Growth – Environment and Tourism Fund
- Emergency Bushfire Response Grants

Federal Government

Current or recent grant programs available through the Australian Government which may be relevant to the implementation of this Strategy include:

- Building Better Regions Fund
- Stronger Communities Programme
- Community Development Grants Programme
- Volunteer Grants

Commercial and Private Sector Funding

Commercial and private sector funding is often used by organisations to assist with facility developments and ongoing operations.

Opportunities such as naming rights and in-kind donations of labour and materials are a potential resource for new facility developments and upgrades.

For example, Jetstar's Flying Start Program – provides grants of up to \$30,000 to support community groups and organisations to fund a project that will enrich the their local community. Refer

<http://www.jetstar.com/au/en/flyingstart>

Not-for-profit organisations

Australian Sports Foundation – The foundation operates the Fundraising4Sport Program to increase opportunities for Australians to participate in sport or excel in sport performance. Refer <https://asf.org.au/>.

Foundation for Rural and Regional Renewal – provides grant funding for charitable purposes that benefits the residents of Australia's rural, regional or remote communities. Refer: http://www.frrr.org.au/cb_pages/grants.php

Trusts and Foundations - There are numerous trusts and foundations established in Australia and a number provide funding for projects such as this. Often, they are established by large corporations. Refer www.philanthropy.org.au

Peak Bodies, Associations and Clubs -

Contributions from clubs and associations developing facilities and other initiatives is common. This may include funds generated through fundraising efforts, loans and savings. Peak bodies and associations may also have funds which could be contributed towards the projects.

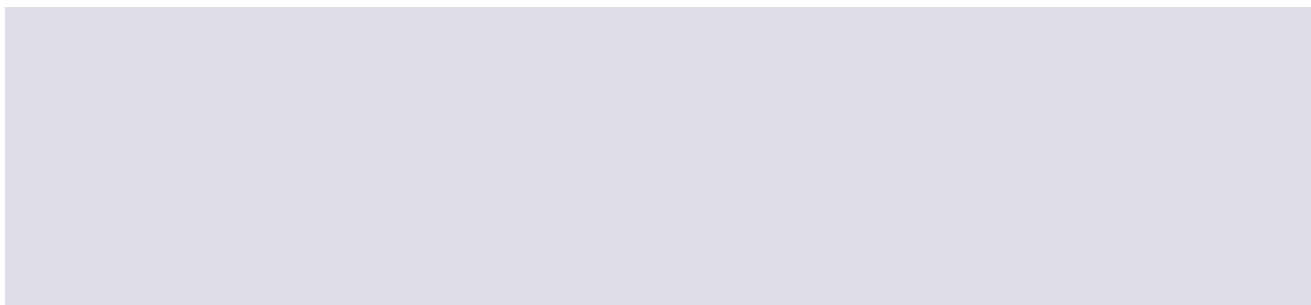
Other

There are other not for profit organisations that provide on the ground support in relation to trail maintenance and development, such as Green Corps, Conservation Volunteers Australia, "Friends of" Groups and Residents associations.



Appendices

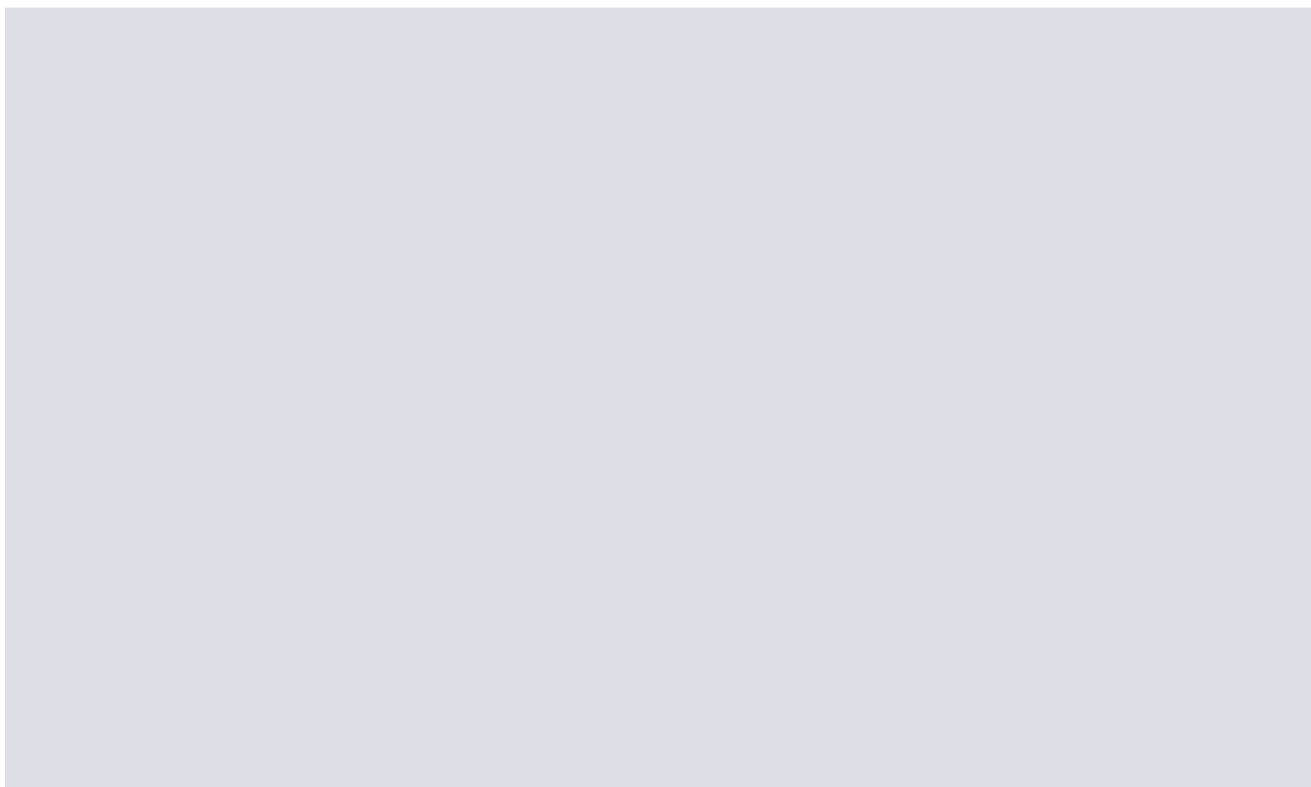
Appendix 4: Order of Probable Cost



ORDER OF COST ESTIMATE

JULY 2020

WINGECARRIBEE RECREATIONAL WALKING TRACKS





WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Project Details

Description
<p>Basis of Estimate</p> <p>This estimate is based upon measured quantities to which we have applied rates and conditions we currently believe applicable as at July 2020. We assumed that the project will be competitively tendered under standard industry conditions and form of contract.</p> <p>This cost estimate is based on the documentation listed under the "Documents" section and does not at this stage provide a direct comparison with tenders received for the work at any future date. To enable monitoring of costs this estimate should be updated regularly during the design and documentation phases of this project.</p> <p>Quantities for this estimate have been provided by Tredwell Management.</p> <p><u>COVID-19 Impact</u></p> <p>Our estimate has been prepared on the basis of normal economic and industry circumstances. The full impact of COVID-19 is unknown at this stage and changing daily. Our estimate makes no provision for the impacts of COVID-19 virus and we advise that an impact on the estimate is probable and could vary considerably depending on the extent of a variety of issues. These may include but are not limited to the following issues, which are intended as a guide as opposed to a comprehensive list:</p> <ul style="list-style-type: none"> ■ Economy, industry and society shut down ■ Exchange rate fluctuations (our estimate reflects pricing as at the US\$0.70 market exchange rate at Q2 2020 and not the current rates). ■ Off shore manufacturing capacity and delivery timing ■ On shore site deliveries of plant, materials and equipment ■ On site staff to manage productivity of the works ■ On site labour to implement the works <p>RLB has observed that, for key construction components, there is an increasing reluctance by contractors to commit to a definitive programme or cost for future projects. This estimate does not consider increased project costs due to potential programme delays, alternative procurement methods of materials and/or labour nor the wider potential impact of COVID-19 on construction activities.</p> <p><u>Potential COVID-19 Actions</u></p> <p>RLB recommends that a project contingency provision is made for COVID-19 impacts dependent of the status of the design and delivery cycle of the project. We would be pleased to discuss suitable provisions.</p> <p>RLB recommends undertaking a risk analysis of this issue and we would be pleased to assist in the preparation of an order of cost assessment and/or sensitivity analysis for the project based on defined criteria. Our new programming capability can also be of assistance in these matters.</p> <p>Please let us know if you would like RLB to assist with a sensitivity analysis on the exchange rate fluctuations to inform on the impact of the current exchange rate and potentially include in any additional COVID-19 project contingency.</p> <p>RLB anticipate that the impact on the estimate may only be in the short to medium term and that long-term impacts may revert to normal circumstances but this will be subject to ongoing monitoring.</p> <p>Items Specifically Included</p> <p>This estimate specifically includes the following:</p>



WINGECARRIBEE RECREATIONAL WALKING TRACKS Order of Cost Estimate

Project Details

Description						
<p><u>Contingencies & Escalation</u></p> <p>The estimate includes the following contingency allowances:</p> <ul style="list-style-type: none"><input type="checkbox"/> Design Development Contingency which allows for issues that will arise during the design and documentation period as the design team develops the design through to 100% documentation<input checked="" type="checkbox"/> Construction Contingency which allows for issues that will arise during the construction period including for latent conditions, design errors and omissions, design changes, client changes, extension of time costs and provisional sum adjustments.						
<p>Items Specifically Excluded</p> <p>The estimate specifically excludes the following which should be considered in an overall project feasibility study:</p> <p><u>Risk Exclusions</u></p> <ul style="list-style-type: none">■ Relocation and upgrade of existing services■ Repair to any damage caused to unidentified services during the performing of the works■ Contaminated ground Removal and Reinstatement■ Removal and Reinstatement of any soft, wet and weak spots in sub-grade■ Asbestos and Hazardous Materials Removal■ Rock excavation■ Retaining walls■ Staging / Phasing costs <p><u>Other Project Cost Exclusions</u></p> <ul style="list-style-type: none">■ Land costs■ Legal fees■ Goods and Services Taxation■ Escalation in costs from June 2020 to future construction period.						
<p>Documents</p> <p>The following documents have been used in preparing this estimate:</p> <table border="0"><thead><tr><th></th><th style="text-align: right;">Date Received</th></tr></thead><tbody><tr><td><u>Documents prepared by Tredwell Management</u></td><td></td></tr><tr><td>■ Wingecarribee Walking Trail Costing 200623</td><td style="text-align: right;">23/06/20</td></tr></tbody></table>		Date Received	<u>Documents prepared by Tredwell Management</u>		■ Wingecarribee Walking Trail Costing 200623	23/06/20
	Date Received					
<u>Documents prepared by Tredwell Management</u>						
■ Wingecarribee Walking Trail Costing 200623	23/06/20					



WINGECARRIBEE RECREATIONAL WALKING TRACKS
 Order of Cost Estimate

Location Summary

Rates Current At July 2020

Location	Total Cost
A HAMMOCK HILL RESERVE	48,140.00
B MANSFIELD RESERVE	146,650.00
C RIVER BEND & BERRIMA RIVER RESERVES	812,950.00
D STONE QUARRY WALK	52,740.00
E BERRIMA WEIR RESERVE	227,550.00
F MOUNT GIBRALTAR RESERVE	1,268,020.00
G GIBBERGUNYAH RESERVE	205,470.00
H MT ALEXANDRA (BOX VALE TRAILHEAD)	755,690.00
I MT ALEXANDRA (LAKE ALEXANDRA TRAILHEAD)	298,100.00
J WELBY WEIR	38,720.00
K BONG BONG COMMON - CECIL HOSKINS NATURE RESERVE	6,100.00
L GLOW WORM GLEN - WILLIAM STREET RESERVE	101,950.00
M GOVERNORS ROAD	680,750.00
ESTIMATED NET COST	\$4,642,830.00
 MARGINS & ADJUSTMENTS	
Escalation	Excl.
ESTIMATED TOTAL COST	\$4,642,830.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

A HAMMOCK HILL RESERVE

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			3,000.00
Preliminaries				\$3,000.00
FT Fitments				
1 Picnic table including concrete slab	No	1	6,500.00	6,500.00
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	1	1,500.00	1,500.00
4 Waymarkers on posts including footing	No	12	550.00	6,600.00
5 Timber bench seat Hammock hill style	No	2	1,600.00	3,200.00
6 Bollard	No	1	1,100.00	1,100.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	3	650.00	1,950.00
Fitments				\$20,850.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	240	5.00	1,200.00
Site Preparation				\$1,200.00
XR Roads, Footpaths and Paved Areas				
2 100mm thick Crushed gravel paving including boxing out, basecourse etc	m ²	240	38.00	9,120.00
Roads, Footpaths and Paved Areas				\$9,120.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
XX Alterations and Renovations to Existing External Works				
41 Demolition of existing waymarkers including removal of debris off site - assumed 30% of new required	No	4	80.00	320.00
42 Demolition of existing bench seating including removal of debris off site	No	2	200.00	400.00
43 Demolition of existing picnic table including removal of debris off site	No	1	250.00	250.00
Alterations and Renovations to Existing External Works				\$970.00
MA Builders Margin				
53 Margin and overheads (10%)	Item			3,500.00
Builders Margin				\$3,500.00
PF Professional Fees				
56 Professional fees (8%)	Item			3,500.00
Professional Fees				\$3,500.00
CO Contingency				
54 Design contingency (10%)	Item			4,000.00
55 Construction contingency (5%)	Item			2,000.00
Contingency				\$6,000.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

A HAMMOCK HILL RESERVE (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			0.00
			<i>Not Allocated to Element</i>	\$0.00
			HAMMOCK HILL RESERVE	\$48,140.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

B MANSFIELD RESERVE

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			9,500.00
Preliminaries				\$9,500.00
FT Fitments				
1 Picnic table including concrete slab	No	1	6,500.00	6,500.00
4 Waymarkers on posts including footing	No	15	550.00	8,250.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	3	650.00	1,950.00
9 New 2 panel trail head sign to existing structure including removal of existing sign	No	1	1,500.00	1,500.00
Fitments				\$18,200.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	1,000	5.00	5,000.00
Site Preparation				\$5,000.00
XR Roads, Footpaths and Paved Areas				
13 50mm Thick asphalt pavement including boxing out, basecourse etc. - assumed 5m wide	m ²	750	85.00	63,750.00
14 Crushed gravel car packing paving including boxing out, basecourse etc. - Assumed 100mm thick	m ²	250	38.00	9,500.00
Roads, Footpaths and Paved Areas				\$73,250.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
XX Alterations and Renovations to Existing External Works				
40 Demolition of existing trail head sign including removal of debris off site	No	1	300.00	300.00
41 Demolition of existing waymarkers including removal of debris off site - assumed 30% of new required	No	5	80.00	400.00
Alterations and Renovations to Existing External Works				\$700.00
MA Builders Margin				
53 Margin and overheads (10%)	Item			10,500.00
Builders Margin				\$10,500.00
PF Professional Fees				
56 Professional fees (8%)	Item			11,000.00
Professional Fees				\$11,000.00
CO Contingency				
54 Design contingency (10%)	Item			11,500.00
55 Construction contingency (5%)	Item			6,500.00
Contingency				\$18,000.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

B MANSFIELD RESERVE (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			500.00
			<i>Not Allocated to Element</i>	<u>\$500.00</u>
			MANSFIELD RESERVE	\$146,650.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

C RIVER BEND & BERRIMA RIVER RESERVES

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			53,500.00
Preliminaries				\$53,500.00
FT Fitments				
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	1	1,500.00	1,500.00
4 Waymarkers on posts including footing	No	15	550.00	8,250.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	1	650.00	650.00
11 Timber bench seat River bend style	No	2	1,100.00	2,200.00
Fitments				\$12,600.00
BW Builders Work In Connection with Specialist Services				
58 Builders work in connection with services	Item			15,500.00
Builders Work In Connection with Specialist Services				\$15,500.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	650	5.00	3,250.00
Site Preparation				\$3,250.00
XR Roads, Footpaths and Paved Areas				
13 50mm Thick asphalt pavement including boxing out, basecourse etc. - assumed 5m wide	m ²	500	85.00	42,500.00
14 Crushed gravel car packing paving including boxing out, basecourse etc. - Assumed 100mm thick	m ²	150	38.00	5,700.00
21 Trail development to natural ground - assumed up to 1m wide	m	1,000	35.00	35,000.00
Roads, Footpaths and Paved Areas				\$83,200.00
XB Outbuildings and Covered Ways				
15 Allowance for Berrima camping park toilet renewal - as budgeted in Capex funding Berrima Camping Park Toilet Block Renewal (SRV) \$420,000 for 2022/23	Item			420,000.00
Outbuildings and Covered Ways				\$420,000.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
XX Alterations and Renovations to Existing External Works				
40 Demolition of existing trail head sign including removal of debris off site	No	2	300.00	600.00
41 Demolition of existing waymarkers including removal of debris off site - assumed 30% of new required	No	5	80.00	400.00
42 Demolition of existing bench seating including removal of debris off site	No	2	200.00	400.00
Alterations and Renovations to Existing External Works				\$1,400.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

C RIVER BEND & BERRIMA RIVER RESERVES (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
MA Builders Margin				
53 Margin and overheads (10%)	Item			59,000.00
Builders Margin				\$59,000.00
PF Professional Fees				
56 Professional fees (8%)	Item			60,000.00
Professional Fees				\$60,000.00
CO Contingency				
54 Design contingency (10%)	Item			65,000.00
55 Construction contingency (5%)	Item			35,500.00
Contingency				\$100,500.00
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			4,000.00
Not Allocated to Element				\$4,000.00
RIVER BEND & BERRIMA RIVER RESERVES				\$812,950.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

D STONE QUARRY WALK

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			3,500.00
Preliminaries				\$3,500.00
FT Fitments				
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	1	1,500.00	1,500.00
4 Waymarkers on posts including footing	No	4	550.00	2,200.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	3	650.00	1,950.00
12 Timber bench seat Stone quarry style	No	2	1,800.00	3,600.00
16 Safety sign 450mm x 600mm	No	2	650.00	1,300.00
Fitments				\$10,550.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	510	5.00	2,550.00
Site Preparation				\$2,550.00
XR Roads, Footpaths and Paved Areas				
2 100mm thick Crushed gravel paving including boxing out, basecourse etc	m ²	360	38.00	13,680.00
14 Crushed gravel car packing paving including boxing out, basecourse etc. - Assumed 100mm thick	m ²	150	38.00	5,700.00
Roads, Footpaths and Paved Areas				\$19,380.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
XX Alterations and Renovations to Existing External Works				
40 Demolition of existing trail head sign including removal of debris off site	No	4	300.00	1,200.00
41 Demolition of existing waymarkers including removal of debris off site - assumed 30% of new required	No	2	80.00	160.00
42 Demolition of existing bench seating including removal of debris off site	No	2	200.00	400.00
Alterations and Renovations to Existing External Works				\$1,760.00
MA Builders Margin				
53 Margin and overheads (10%)	Item			4,000.00
Builders Margin				\$4,000.00
PF Professional Fees				
56 Professional fees (8%)	Item			4,000.00
Professional Fees				\$4,000.00
CO Contingency				
54 Design contingency (10%)	Item			4,000.00
55 Construction contingency (5%)	Item			2,500.00
Contingency				\$6,500.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

D STONE QUARRY WALK (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			500.00
			<i>Not Allocated to Element</i>	\$500.00
			STONE QUARRY WALK	\$52,740.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

E BERRIMA WEIR RESERVE

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			15,000.00
Preliminaries				\$15,000.00
FT Fitments				
1 Picnic table including concrete slab	No	1	6,500.00	6,500.00
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	1	1,500.00	1,500.00
4 Waymarkers on posts including footing	No	10	550.00	5,500.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	3	650.00	1,950.00
17 Bench seat	No	2	1,800.00	3,600.00
Fitments				\$19,050.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	500	5.00	2,500.00
Site Preparation				\$2,500.00
XR Roads, Footpaths and Paved Areas				
14 Crushed gravel car packing paving including boxing out, basecourse etc. - Assumed 100mm thick	m ²	250	38.00	9,500.00
21 Trail development to natural ground - assumed up to 1m wide	m	700	35.00	24,500.00
22 Gravel entrance road paving including boxing out, basecourse etc - assumed 5m wide	m ²	250	38.00	9,500.00
24 Pedestrian boardwalk bridge over Wingecarribee River - assumed 20m long and light weight construction (not a suspension bridge)	Item			85,000.00
Roads, Footpaths and Paved Areas				\$128,500.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
MA Builders Margin				
53 Margin and overheads (10%)	Item			16,500.00
Builders Margin				\$16,500.00
PF Professional Fees				
56 Professional fees (8%)	Item			17,000.00
Professional Fees				\$17,000.00
CO Contingency				
54 Design contingency (10%)	Item			18,000.00
55 Construction contingency (5%)	Item			10,000.00
Contingency				\$28,000.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

E BERRIMA WEIR RESERVE (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			1,000.00
			<i>Not Allocated to Element</i>	\$1,000.00
			BERRIMA WEIR RESERVE	\$227,550.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

F MOUNT GIBRALTAR RESERVE

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			83,500.00
Preliminaries				\$83,500.00
FT Fitments				
1 Picnic table including concrete slab	No	7	6,500.00	45,500.00
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	3	1,500.00	4,500.00
4 Waymarkers on posts including footing	No	25	550.00	13,750.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	6	650.00	3,900.00
16 Safety sign 450mm x 600mm	No	8	650.00	5,200.00
18 Timber bench seat in trachyte shelters	No	4	1,900.00	7,600.00
Fitments				\$80,450.00
BW Builders Work In Connection with Specialist Services				
58 Builders work in connection with services	Item			24,500.00
Builders Work In Connection with Specialist Services				\$24,500.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	2,760	5.00	13,800.00
Site Preparation				\$13,800.00
XR Roads, Footpaths and Paved Areas				
2 100mm thick Crushed gravel paving including boxing out, basecourse etc	m ²	360	38.00	13,680.00
13 50mm Thick asphalt pavement including boxing out, basecourse etc. - assumed 5m wide	m ²	2,000	85.00	170,000.00
14 Crushed gravel car packing paving including boxing out, basecourse etc. - Assumed 100mm thick	m ²	400	38.00	15,200.00
38 New disability parking space including bollard and lining marking	No	1	2,500.00	2,500.00
Roads, Footpaths and Paved Areas				\$201,380.00
XB Outbuildings and Covered Ways				
36 Allowance to upgrade existing public amenities to heritage building consisting of new floor tiling and screed, paint finishes to walls, ceiling finish, amenities, ventilation and lighting - note: \$160,000 budgeted in Capex Funding List for 'Upgrade Public Amenities and Recreational Track' 2024/25	No	2	100,000.00	200,000.00
61 Allowance to for new disability toilet matching existing heritage buildings. Connecting into existing site services consisting of a new envelope, slab, floor tiling and screed, wall tiles, ceiling finish, amenities, ventilation and lighting	Item			90,000.00
37 Allowance to restore derelict inner bowl amenities building for heritage value only not for use	No	2	110,000.00	220,000.00
Outbuildings and Covered Ways				\$510,000.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

F MOUNT GIBRALTAR RESERVE (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
XE External Electric Light and Power				
50 No allowance for new power supply to toilets	Item			Excl.
External Electric Light and Power				Excl.
XX Alterations and Renovations to Existing External Works				
40 Demolition of existing trail head sign including removal of debris off site	No	9	300.00	2,700.00
41 Demolition of existing waymarkers including removal of debris off site - assumed 30% of new required	No	8	80.00	640.00
42 Demolition of existing bench seating including removal of debris off site	No	4	200.00	800.00
43 Demolition of existing picnic table including removal of debris off site	No	7	250.00	1,750.00
Alterations and Renovations to Existing External Works				\$5,890.00
MA Builders Margin				
53 Margin and overheads (10%)	Item			92,000.00
Builders Margin				\$92,000.00
PF Professional Fees				
56 Professional fees (8%)	Item			93,500.00
Professional Fees				\$93,500.00
CO Contingency				
54 Design contingency (10%)	Item			101,000.00
55 Construction contingency (5%)	Item			55,500.00
Contingency				\$156,500.00
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			6,500.00
Not Allocated to Element				\$6,500.00
MOUNT GIBRALTAR RESERVE				\$1,268,020.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

G GIBBERGUNYAH RESERVE

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			13,500.00
Preliminaries				\$13,500.00
FT Fitments				
1 Picnic table including concrete slab	No	2	6,500.00	13,000.00
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	2	1,500.00	3,000.00
4 Waymarkers on posts including footing	No	30	550.00	16,500.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	6	650.00	3,900.00
16 Safety sign 450mm x 600mm	No	2	650.00	1,300.00
17 Bench seat	No	5	1,800.00	9,000.00
Fitments				\$46,700.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	1,000	5.00	5,000.00
Site Preparation				\$5,000.00
XR Roads, Footpaths and Paved Areas				
2 100mm thick Crushed gravel paving including boxing out, basecourse etc	m ²	600	38.00	22,800.00
14 Crushed gravel car packing paving including boxing out, basecourse etc. - Assumed 100mm thick	m ²	400	38.00	15,200.00
Roads, Footpaths and Paved Areas				\$38,000.00
XN Boundary Walls, Fencing and Gates				
28 Lookout fencing/barrier fence - assumed 1500mm high black powdercoated metal fence (8H)	m	20	1,500.00	30,000.00
29 Entrance gate / pedestrian turnstile	No	1	2,200.00	2,200.00
46 Wood post and rail fence	m	10	195.00	1,950.00
Boundary Walls, Fencing and Gates				\$34,150.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
XX Alterations and Renovations to Existing External Works				
40 Demolition of existing trail head sign including removal of debris off site	No	8	300.00	2,400.00
41 Demolition of existing waymarkers including removal of debris off site - assumed 30% of new required	No	9	80.00	720.00
42 Demolition of existing bench seating including removal of debris off site	No	5	200.00	1,000.00
43 Demolition of existing picnic table including removal of debris off site	No	2	250.00	500.00
44 Demolition of existing lookout fencing including removal of debris off site	m	20	250.00	5,000.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

G GIBBERGUNYAH RESERVE (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
45 Demolition of existing pedestrian gate, wood post and rail fence and step over ladder including removal of debris off site	No	1	2,000.00	2,000.00
Alterations and Renovations to Existing External Works				\$11,620.00
MA Builders Margin				
53 Margin and overheads (10%)	Item			15,000.00
Builders Margin				\$15,000.00
PF Professional Fees				
56 Professional fees (8%)	Item			15,000.00
Professional Fees				\$15,000.00
CO Contingency				
54 Design contingency (10%)	Item			16,500.00
55 Construction contingency (5%)	Item			9,000.00
Contingency				\$25,500.00
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			1,000.00
Not Allocated to Element				\$1,000.00
GIBBERGUNYAH RESERVE				\$205,470.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

H MT ALEXANDRA (BOX VALE TRAILHEAD)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			50,000.00
Preliminaries				\$50,000.00
FT Fitments				
1 Picnic table including concrete slab	No	7	6,500.00	45,500.00
4 Waymarkers on posts including footing	No	15	550.00	8,250.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	7	650.00	4,550.00
10 Trail head sign including wooden shelter with metal roof sheeting (custom sign - steel frame with aluminium attached, 841mm x 1189mm)	No	1	4,000.00	4,000.00
16 Safety sign 450mm x 600mm	No	10	650.00	6,500.00
19 Replace current waymaker plaques with new, including the removal of existing plaques	No	65	200.00	13,000.00
20 Directional road sign	No	2	650.00	1,300.00
30 Allowance for metal ladder - assumed to be 3.5m-4.5m high	No	1	8,500.00	8,500.00
31 Allowance for metal staircase including two 10 step flights and one landing	Item			55,000.00
32 Allowance to repair existing pedestrian bridge handrails	Item			15,000.00
Fitments				\$161,600.00
BW Builders Work In Connection with Specialist Services				
58 Builders work in connection with services	Item			14,500.00
Builders Work In Connection with Specialist Services				\$14,500.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	930	5.00	4,650.00
Site Preparation				\$4,650.00
XR Roads, Footpaths and Paved Areas				
13 50mm Thick asphalt pavement including boxing out, basecourse etc. - assumed 5m wide	m ²	750	85.00	63,750.00
14 Crushed gravel car packing paving including boxing out, basecourse etc. - Assumed 100mm thick	m ²	180	38.00	6,840.00
Roads, Footpaths and Paved Areas				\$70,590.00
XN Boundary Walls, Fencing and Gates				
28 Lookout fencing/barrier fence - assumed 1500mm high black powdercoated metal fence (8H)	m	20	1,500.00	30,000.00
Boundary Walls, Fencing and Gates				\$30,000.00
XB Outbuildings and Covered Ways				
34 Allowance for new amenities building	Item			195,000.00
Outbuildings and Covered Ways				\$195,000.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

H MT ALEXANDRA (BOX VALE TRAILHEAD) (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
XX Alterations and Renovations to Existing External Works				
40 Demolition of existing trail head sign including removal of debris off site	No	8	300.00	2,400.00
41 Demolition of existing waymarkers including removal of debris off site - assumed 30% of new required	No	5	80.00	400.00
43 Demolition of existing picnic table including removal of debris off site	No	7	250.00	1,750.00
44 Demolition of existing lookout fencing including removal of debris off site	m	20	250.00	5,000.00
47 Demolition of existing metal ladder including removal of debris off site	No	1	1,800.00	1,800.00
48 Demolition of existing metal staircase including removal of debris off site	No	1	10,000.00	10,000.00
Alterations and Renovations to Existing External Works				\$21,350.00
MA Builders Margin				
53 Margin and overheads (10%)	Item			55,000.00
Builders Margin				\$55,000.00
PF Professional Fees				
56 Professional fees (8%)	Item			55,500.00
Professional Fees				\$55,500.00
CO Contingency				
54 Design contingency (10%)	Item			60,500.00
55 Construction contingency (5%)	Item			33,000.00
Contingency				\$93,500.00
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			4,000.00
Not Allocated to Element				\$4,000.00
MT ALEXANDRA (BOX VALE TRAILHEAD)				\$755,690.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

IMT ALEXANDRA (LAKE ALEXANDRA TRAILHEAD)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			19,500.00
Preliminaries				\$19,500.00
FT Fitments				
1 Picnic table including concrete slab	No	2	6,500.00	13,000.00
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	1	1,500.00	1,500.00
4 Waymarkers on posts including footing	No	30	550.00	16,500.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	3	650.00	1,950.00
10 Trail head sign including wooden shelter with metal roof sheeting (custom sign - steel frame with aluminium attached, 841mm x 1189mm)	No	1	4,000.00	4,000.00
16 Safety sign 450mm x 600mm	No	10	650.00	6,500.00
Fitments				\$43,450.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	200	5.00	1,000.00
Site Preparation				\$1,000.00
XR Roads, Footpaths and Paved Areas				
14 Crushed gravel car packing paving including boxing out, basecourse etc. - Assumed 100mm thick	m ²	200	38.00	7,600.00
26 Wooden boxed out steps including wooden frame, drainage, compacted fill material, etc...	No	10	1,000.00	10,000.00
27 Allowance to repair existing wooden boxed out steps including drainage, compacted fill material, etc...	Item			45,000.00
33 Trail development to natural ground including stripping of dense vegetation and removal from site	m	50	55.00	2,750.00
35 Pedestrian boardwalk bridge to Gibberguyah creek- assumed 15m long and light weight construction (not a suspension bridge)	Item			65,000.00
Roads, Footpaths and Paved Areas				\$130,350.00
XN Boundary Walls, Fencing and Gates				
28 Lookout fencing/barrier fence - assumed 1500mm high black powdercoated metal fence (8H)	m	10	1,500.00	15,000.00
Boundary Walls, Fencing and Gates				\$15,000.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
XX Alterations and Renovations to Existing External Works				
44 Demolition of existing lookout fencing including removal of debris off site	m	10	250.00	2,500.00
49 Demolition of existing wooden box steps including removal of debris off site	No	10	80.00	800.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

MT ALEXANDRA (LAKE ALEXANDRA TRAILHEAD) (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
59 Demolition of existing concrete creek crossover including removal of debris off site	No	1	3,500.00	3,500.00
Alterations and Renovations to Existing External Works				\$6,800.00
MA Builders Margin				
53 Margin and overheads (10%)	Item			21,500.00
Builders Margin				\$21,500.00
PF Professional Fees				
56 Professional fees (8%)	Item			22,000.00
Professional Fees				\$22,000.00
CO Contingency				
54 Design contingency (10%)	Item			24,000.00
55 Construction contingency (5%)	Item			13,000.00
Contingency				\$37,000.00
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			1,500.00
Not Allocated to Element				\$1,500.00
MT ALEXANDRA (LAKE ALEXANDRA TRAILHEAD)				\$298,100.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

J WELBY WEIR

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			2,500.00
Preliminaries				\$2,500.00
FT Fitments				
1 Picnic table including concrete slab	No	1	6,500.00	6,500.00
4 Waymarkers on posts including footing	No	6	550.00	3,300.00
16 Safety sign 450mm x 600mm	No	2	650.00	1,300.00
Fitments				\$11,100.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	340	5.00	1,700.00
Site Preparation				\$1,700.00
XR Roads, Footpaths and Paved Areas				
2 100mm thick Crushed gravel paving including boxing out, basecourse etc	m ²	240	38.00	9,120.00
14 Crushed gravel car packing paving including boxing out, basecourse etc. - Assumed 100mm thick	m ²	100	38.00	3,800.00
Roads, Footpaths and Paved Areas				\$12,920.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
MA Builders Margin				
53 Margin and overheads (10%)	Item			3,000.00
Builders Margin				\$3,000.00
PF Professional Fees				
56 Professional fees (8%)	Item			3,000.00
Professional Fees				\$3,000.00
CO Contingency				
54 Design contingency (10%)	Item			3,000.00
55 Construction contingency (5%)	Item			1,500.00
Contingency				\$4,500.00
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			0.00
Not Allocated to Element				\$0.00
WELBY WEIR				\$38,720.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

K BONG BONG COMMON - CECIL HOSKINS NATURE RESERVE

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			500.00
Preliminaries				\$500.00
FT Fitments				
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	1	1,500.00	1,500.00
17 Bench seat	No	1	1,800.00	1,800.00
Fitments				\$3,300.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
XX Alterations and Renovations to Existing External Works				
40 Demolition of existing trail head sign including removal of debris off site	No	1	300.00	300.00
Alterations and Renovations to Existing External Works				\$300.00
MA Builders Margin				
53 Margin and overheads (10%)	Item			500.00
Builders Margin				\$500.00
PF Professional Fees				
56 Professional fees (8%)	Item			500.00
Professional Fees				\$500.00
CO Contingency				
54 Design contingency (10%)	Item			500.00
55 Construction contingency (5%)	Item			500.00
Contingency				\$1,000.00
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			0.00
Not Allocated to Element				\$0.00
BONG BONG COMMON - CECIL HOSKINS NATURE RESERVE				\$6,100.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

L GLOW WORM GLEN - WILLIAM STREET RESERVE

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			6,500.00
Preliminaries				\$6,500.00
FT Fitments				
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	1	1,500.00	1,500.00
4 Waymarkers on posts including footing	No	4	550.00	2,200.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	1	650.00	650.00
Fitments				\$4,350.00
XP Site Preparation				
51 Allowance to clear existing topsoil and dispose on site	m ²	480	5.00	2,400.00
Site Preparation				\$2,400.00
XR Roads, Footpaths and Paved Areas				
2 100mm thick Crushed gravel paving including boxing out, basecourse etc	m ²	480	38.00	18,240.00
25 Allowance for basic wooden plank bridges excluding handrail over small gullies - assumed 6m - 8m	No	3	10,000.00	30,000.00
26 Wooden boxed out steps including wooden frame, drainage, compacted fill material, etc...	No	12	1,000.00	12,000.00
Roads, Footpaths and Paved Areas				\$60,240.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
XX Alterations and Renovations to Existing External Works				
40 Demolition of existing trail head sign including removal of debris off site	No	1	300.00	300.00
41 Demolition of existing waymarkers including removal of debris off site - assumed 30% of new required	No	2	80.00	160.00
Alterations and Renovations to Existing External Works				\$460.00
MA Builders Margin				
53 Margin and overheads (10%)	Item			7,500.00
Builders Margin				\$7,500.00
PF Professional Fees				
56 Professional fees (8%)	Item			7,500.00
Professional Fees				\$7,500.00
CO Contingency				
54 Design contingency (10%)	Item			8,000.00
55 Construction contingency (5%)	Item			4,500.00
Contingency				\$12,500.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

L GLOW WORM GLEN - WILLIAM STREET RESERVE (continued)

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			500.00
			<i>Not Allocated to Element</i>	\$500.00
GLOW WORM GLEN - WILLIAM STREET RESERVE				\$101,950.00



WINGECARRIBEE RECREATIONAL WALKING TRACKS

Order of Cost Estimate

Location Element Item

M GOVERNORS ROAD

Rates Current At July 2020

Description	Unit	Qty	Rate	Total
PR Preliminaries				
52 Preliminaries and supervision (10%)	Item			45,000.00
Preliminaries				\$45,000.00
FT Fitments				
3 Trail head sign custom sign - steel frame with aluminium attached, 841 x 1189mm	No	1	1,500.00	1,500.00
4 Waymarkers on posts including footing	No	4	550.00	2,200.00
7 Interpretative sign steel frame with aluminium attached 594mm x 841mm	No	2	650.00	1,300.00
Fitments				\$5,000.00
XR Roads, Footpaths and Paved Areas				
21 Trail development to natural ground - assumed up to 1m wide	m	450	35.00	15,750.00
23 Wooden boardwalk trail development - assumed on grade up to 1m wide	m	450	950.00	427,500.00
Roads, Footpaths and Paved Areas				\$443,250.00
XK External Stormwater Drainage				
60 No allowance for stormwater to general pavement types	Item			Excl.
External Stormwater Drainage				Excl.
MA Builders Margin				
53 Margin and overheads (10%)	Item			49,500.00
Builders Margin				\$49,500.00
PF Professional Fees				
56 Professional fees (8%)	Item			50,000.00
Professional Fees				\$50,000.00
CO Contingency				
54 Design contingency (10%)	Item			54,500.00
55 Construction contingency (5%)	Item			30,000.00
Contingency				\$84,500.00
NA Not Allocated to Element				
57 Statutory fees and charges (0.5%)	Item			3,500.00
Not Allocated to Element				\$3,500.00
GOVERNORS ROAD				\$680,750.00



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