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# CAMPBELLTOWN CITY COUNCIL

## Minutes Summary

**Wildlife and Environment Advisory Committee Meeting held at 6.00 on Wednesday, 22 February 2023.**

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**Minutes of the Wildlife and Environment Advisory Committee Meeting held on 22 February 2023**

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**Present****In attendance**

Chairperson - M Stellino - Councillor  
Member - R Munro - Councillor  
Member - M Oates - Councillor  
Member - J Baldwin - Director City Planning and Environment  
Member - M. Ellison - Bushcare Officer  
Member - M Clark - Coordinator Natural Areas  
Member - K Robinson - Committee Secretary

**1. ACKNOWLEDGEMENT OF LAND**

An Acknowledgement of Land was presented by the Chairperson.

**2. APOLOGIES**

Member - M Chowdhury - Councillor  
Member - R Manoto - Councillor  
Member - W Morrison - Councillor  
Member - J Cotter - Councillor  
Member - I Andrews - Executive Manager Open Space  
Member - L Deitz - General Manager  
Member - S Grant - Director City Lifestyles

**3. DECLARATIONS OF INTEREST**

There were no Declarations of Interest made at this meeting.

**4. REPORTS****4.1 Regional Trails – Georges River and Scenic Hills****Report**

At the 30 November 2022 meeting of the Campbelltown Wildlife and Environment Advisory Committee, it was requested by Cr Manoto (referring to a Notice of Motion previously put forward by Cr Oates), that information relating to the status of formal walking trails along Georges River and the Scenic Hills be provided to the Committee, including any funding opportunities.

On further review and consideration of the scope of the request, it is considered appropriate that the Committee formally invite the NSW Department of Planning and Environment (DPE) to brief the Council on the matters raised by Cr Manoto.

It is important to note that since the Council's commitment to a recreational trail along the Georges River, the NSW Government has proposed the Georges River Koala Reserve, which will impact on the Council's desire for a recreational trail in this area.

Notwithstanding the above, a short overview on the Georges River Recreation Trail and Bushwalking Study (2016) and future Georges River Reserve will be provided to the Committee, however it is recommended that the Committee invite the DPE to brief the Council on both the Georges River Koala Reserve and the Scenic Hills Strategic Framework.

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### **Officer's Recommendation**

That the NSW Department of Planning and Environment be invited to brief the Council on the Georges River Koala Reserve and the Scenic Hills Strategic Framework.

### **Committee's Recommendation [Stellino/Munro]**

1. That the NSW Department of Planning and Environment be invited to brief the Council on the Georges River Koala Reserve.
2. That the Scenic Hills Strategic Framework be presented to a future briefing of Council

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## **4.2 Platypus Pals Monitoring Program**

### **Report**

Platypus are a unique Australian animal that is under threat from a range of different human impacts including poor water quality, irresponsible fishing practices and the use of illegal opera house yabby traps. Anecdotally, there were records of Platypus living in the Georges River and its tributaries however data relating to locations, potential numbers and distribution was not available.

The Platypus Pals program aimed to get a better understanding of Platypus and Macquarie Perch (listed as a Threatened Species) distribution and population numbers as well as involve the community in monitoring and education to better enhance their habitat and help conserve these iconic species.

This presentation will provide an overview of the program, including on ground works, community engagement, the many project partners that provided input into the project and the overall outcomes achieved.

A presentation will be provided.

**Officer's Recommendation**

That the information and presentation be noted.

**Committee's Recommendation [Stellino/Munro]**

That the information and presentation be noted.

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**4.3 Campbelltown Community Gardens - Update****Report**

At the 30 November 2022 meeting of the Campbelltown Wildlife and Environment Advisory Committee, it was requested by Cr Stellino that a report or presentation be provided to the Committee.

It was requested that the report/presentation provide information on the 17 community gardens in the Campbelltown LGA, and specifically their location, hours of operation and information on how to gain access to the gardens.

Cr Stellino also requested information and or suggestions on how Council could increase the Campbelltown community's participation in the use of community gardens and any indigenous aspects of such gardens.

A response to the request is currently being developed, with Council staff continuing their investigations around opportunities and/or effective measures that could be employed to increase the wider community's participation in the use of community gardens and that of indigenous gardens.

A complete presentation covering all matters requested and the outcome of the investigation will be provided at the next meeting of the Committee.

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**Officer's Recommendation**

That the status of the report/presentation on the Campbelltown Community Gardens be noted.

**Committee's Recommendation [Stellino/Oates]**

That a presentation outlining the current status of Community Gardens within the Campbelltown LGA and promotional opportunities to increase visitation and community involvement be provided at the next meeting in May.

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## 5. GENERAL BUSINESS

### 5.1 Item taken on Notice

Cr Oates asked the following:

How is the Macarthur Centre for Sustainable Living:

- a) Connected with Council
- b) How many group projects are organised

The Natural Areas Coordinator advised the following:

Most contact is through the local libraries and waste services where workshops such as food to waste are run.

### 5.2 Links to Information

As per the request of the Committee, the following links to the relevant information/items from the meeting are provided.

#### **Platypus Pals**

EnviroDNA – Species list for EDNA testing (native and exotic) – <https://www.envirodna.com/our-services/targeted/species-tests>

Link to LGNSW Award Website – [https://lgnsw.org.au/Public/Public/Members-Services/Environment-Awards/2022-winners/Communication\\_Education\\_Empowerment.aspx](https://lgnsw.org.au/Public/Public/Members-Services/Environment-Awards/2022-winners/Communication_Education_Empowerment.aspx)

Link to Council Website – <https://www.campbelltown.nsw.gov.au/Local-Environment/Environmental-Grant-Programs/Platypus-Pals-Grant-Program>

#### **Community Gardens – Bushtucker Gardens**

Link to Gardening Australia Episode Filmed at Reiby Juvenile Justice Centre – <https://www.abc.net.au/gardening/how-to/lessons-from-the-land/13586812>

### 5.3 Attachments as requested

Please find attached to these minutes copies of document/signs as requested by the Wildlife and Environment Committee at its meeting of 22 February 2023.

**Attachment 1:** City of Campbelltown Review of Bushwalking Tracks and Associated Facilities

**Attachment 2:** City Of Campbelltown Appendix 1 – Georges River Recreational Trail

**Attachment 3:** Platypus sign

**Attachment 4:** Tangler bins sign

**Attachment 5:** Platypus Sign and Tangler bins – photo

The next meeting of the Wildlife and Environment Advisory Committee will be held on 24 May 2023 at the Staff Training Centre.

Councillor M Stellino,

**Chairperson**

Meeting Concluded: 7.37pm





**campbelltown**  
city council

# REVIEW OF BUSHWALKING TRACKS AND ASSOCIATED FACILITIES

FEBRUARY 2017



**TREDWELL**



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# 1. Introduction

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## 1.1 Project background

The Campbelltown Local Government Area (LGA) is situated in the Sydney Basin Bioregion which is one of the most species-diverse regions in NSW. It covers an area of approximately 33,130 hectares and incorporates parts of the Georges and Hawkesbury-Nepean River catchments.

Approximately 17,840 hectares or 57 per cent of the LGA still contains native vegetation. The majority of this vegetation occurs within the eastern portion of the LGA which comprises the Holsworthy Military Area, Woronora Special Area, Dharawal National Park and the Upper Georges River Corridor. Campbelltown has a diverse range of flora and fauna with over 1,500 flora species and over 330 fauna species recorded within the LGA.

The Macarthur region, comprising of Campbelltown, Camden and Wollondilly, is included in the Greater Sydney or Sydney and Surrounds region, as defined by Destination NSW, the lead government agency for NSW tourism and events sectors. To be situated so close to such a large urban catchment area (Sydney), makes Campbelltown a highly accessible tourist destination for not only the local domestic market but also the inbound international market with the majority of international visitors flying into Sydney.

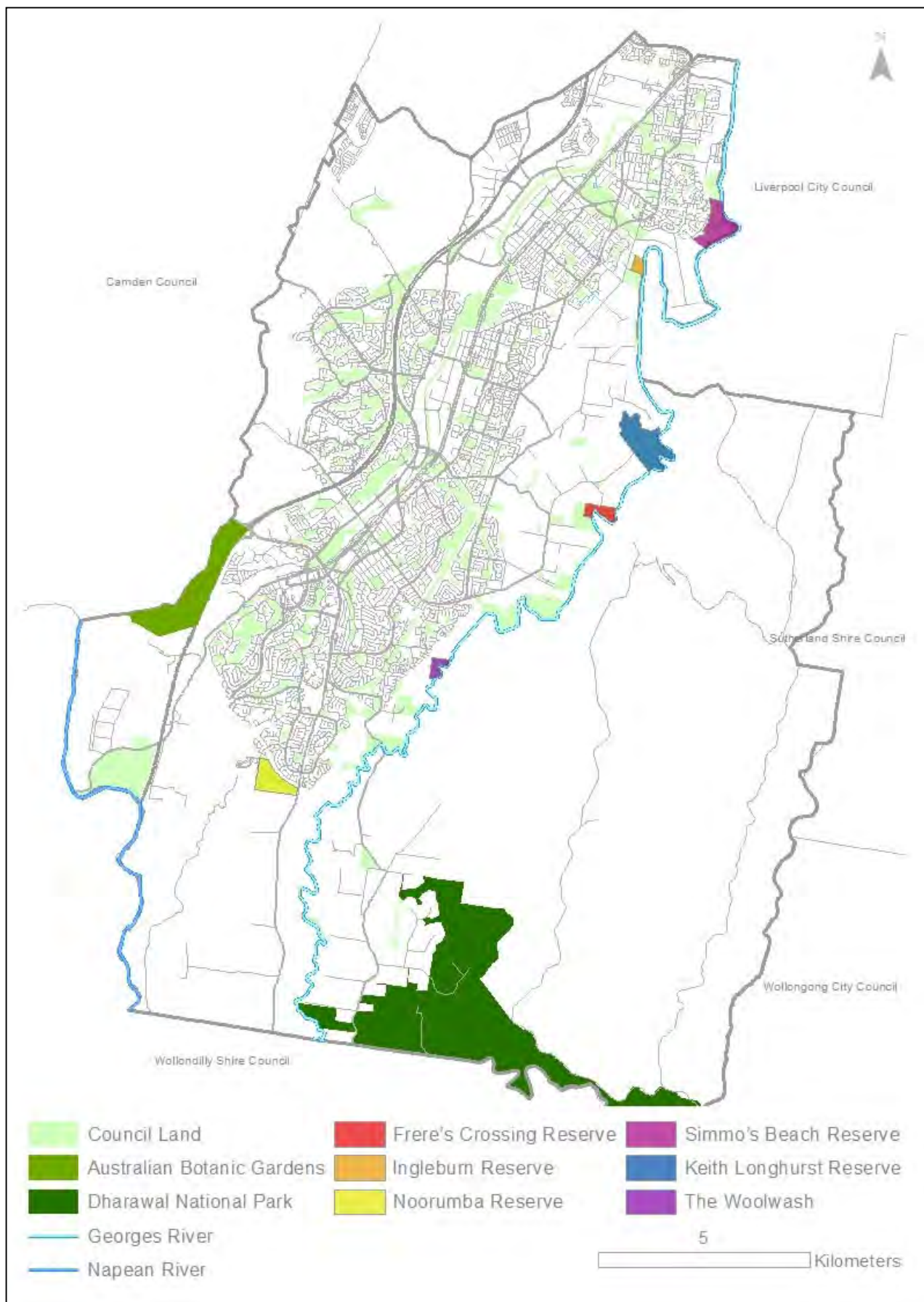
There is a significant increase in urban expansion occurring across Western and South Western Sydney, which brings with it a rising population. Campbelltown alone has a population of over 150,000 people and is predicted to grow to over 180,000 by 2021. The growing population will create a growing need for open space and the demand for day or short break excursions.

It is therefore pertinent that Campbelltown take advantage of its natural environment and its close proximity to the Sydney-wide tourism market and the inbound international market and to solidify itself as an eco-tourism destination for both domestic and international visitors.

The development of an extensive formalised bushwalking track system throughout Campbelltown will serve as an important natural, educational and recreational resource for the Campbelltown Local Government Area. The walking tracks will conserve the significant ecological value of the bushland whilst also developing the area's ability to accommodate the recreational and educational needs of the domestic and international tourism market.



**Figure 1: View over the Georges River from Frere's Crossing Reserve**



**Figure 2: Campbelltown City Council area map and reserves for review**

## 1.2 Project Deliverables & Approach

The project will deliver the following:

- Mapping of all bushwalking tracks at key Council reserves/identified recreational locations:
  - Simmo's Beach Reserve
  - Ingleburn Reserve
  - Keith Longhurst Reserve
  - Frere's Crossing Reserve
  - The Woolwash
  - Noorumba Reserve
- Distinguish between types of tracks (i.e. fire trails, walking tracks, mountain bike trails)
- Prepare a comprehensive database of tracks to address:
  - Location
  - Ownership
  - Potential barriers to use
  - Grade / Classification
  - Requirements for upgrade/enhancement/maintenance
  - Opportunities to extend existing tracks
  - Identification of main features/attractions/points of interest/key destinations
  - Opportunities to promote tracks as wheelchair accessible
- Recommend locations for the creation of new paths together with its associated main attraction/purpose
- Identify locations for complementary opportunities for tourism (e.g. lookouts, orienteering, mountain biking, zip lining, high ropes course, bird watching, kayaking/paddle boarding/river access, camping/glamping)
- Identify need and locations for potential facilities (e.g. public toilets, picnic tables, BBQ facilities)
- Create an interactive mapping layer of walking tracks that can be used on Council's website and in promotional material



An objective review and documentation of existing relevant information will be an important component of the project. This review will aid the identification of opportunities and constraints and will be important in terms of building a rationale that appropriately justifies the decision-making process throughout the project.

Another significant component of the project will be the on-ground assessment of the area. This process will allow us to verify opportunities and constraints and identify both trail development opportunities and any additional issues that may require addressing. This assessment will also allow a greater understanding of the area and its inherent environmental, landscape character and visual amenity values, together with its relationship with the surroundings.

Key principles which will inform our project approach include:

- Considering the existing environmental values of the area and maximising and protecting the biodiversity principles embedded in the region
- Maximise recreation, tourism and economic development opportunities
- Ensure options for trail alignment comply with sustainable and accessible trail design principles
- Compliance with Australian Standards for walking trails (AS 2156.1&2)
- Regular, co-ordinated collaboration with the consultant team to ensure a cohesive approach
- Functional, attractive and sought-after trail experiences

## 2. Methodology

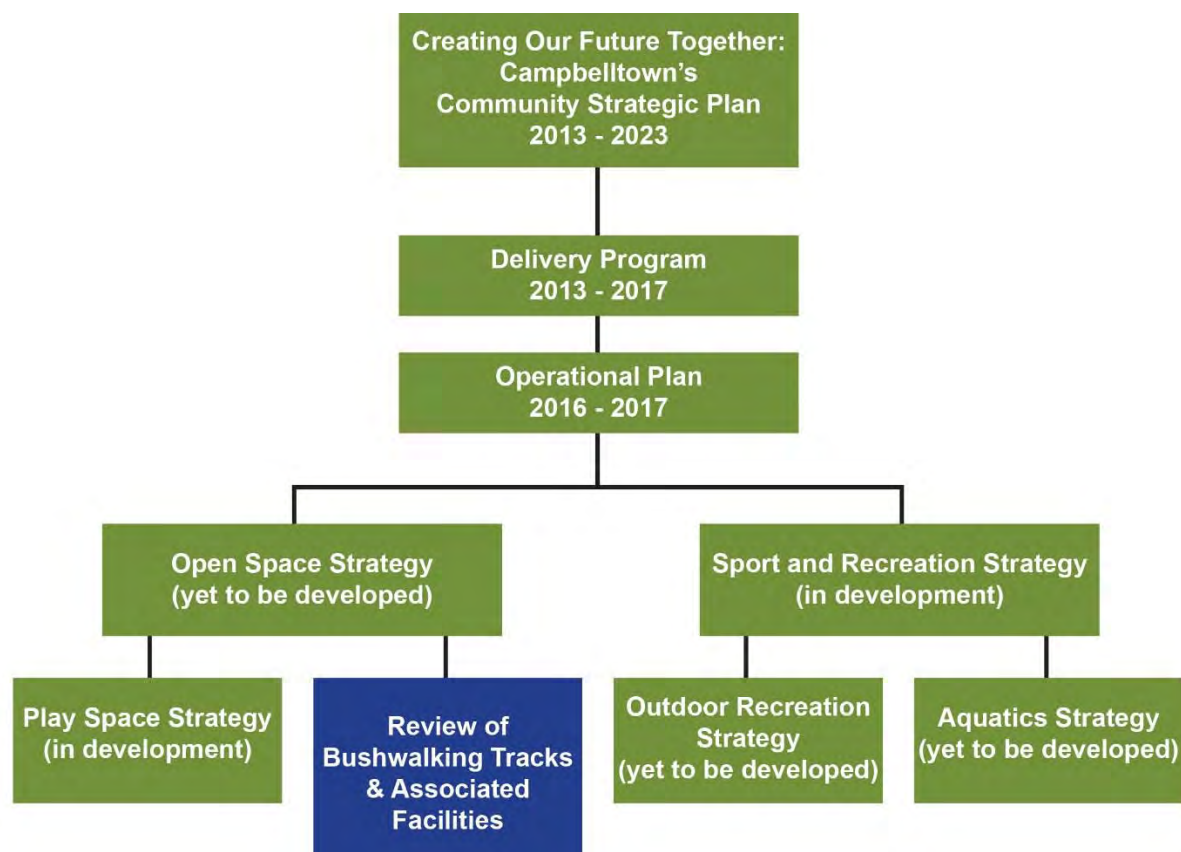
The project methodology is summarised in Table 1 below. This table outlines the key stages utilised to conduct a review of the bushwalking tracks and associated facilities within the Campbelltown Local Government Area and the key outputs delivered at the completion of each stage.

**Table 1: Project methodology**

Stages of methodology	Key outputs
1. Stage 1: Project Start-up and Research	<ul style="list-style-type: none"><li>➤ Confirmation of project objectives, methodology &amp; timeframes</li><li>➤ Project start-up meeting minutes</li><li>➤ Collation of all existing data, including maps and interpretation material</li><li>➤ Understanding emerging trends and themes</li><li>➤ Benchmarking analysis</li><li>➤ Agreed trail assessment methodology</li></ul>
2. Stage 2: Trail Network Audit	<ul style="list-style-type: none"><li>➤ Trails Audit including<ul style="list-style-type: none"><li>○ Trail database and assessment matrix</li><li>○ GIS Mapping (trail alignments, features, and key infrastructure)</li><li>○ Summary of key issues and opportunities</li></ul></li></ul>
3. Stage 3: Gap Analysis and Opportunities	<ul style="list-style-type: none"><li>➤ Gap and need analysis for new tracks, complementary tourism opportunities and associated track facilities</li><li>➤ GIS mapping highlighting new track linkages</li><li>➤ GIS mapping identifying locations for complementary tourism opportunities</li><li>➤ GIS mapping identifying location for potential track facilities</li></ul>

### 3. Strategic Context

This Review of Bushwalking Tracks and Associated Facilities forms part of a network of Council's planning strategies incorporating Council's corporate, open space, sport and recreation related strategies. The figure below depicts the relationship between these strategies.



**Figure 3 Council's Planning Strategies Diagram**

Specifically in relation to this project, the following background documents have been reviewed:

State and regional documents:

- Draft South West District Plan (2016)
- A Plan for Growing Sydney (2014)
- Sydney Metropolitan - Regional Recreational Trails Framework (2005), and update (2010)
- Macarthur Destination Management Plan 2016-2020
- Macarthur Region Recreational Trail Concept Report (2008)
- Great Kai' Mia Way Feasibility Study (2004)<sup>1</sup>

Campbelltown City Council documents:

- Community Strategic Plan 2013-2023
- Open Space Plan Draft (November 2016)
- Sport and Recreation Strategy Draft Summary Report 2016 – 2036 and Supporting Research Document (June 2016)
- Environmental Education Plan (2016)
- Campbelltown Walking Track Network Options Review Report (April 2003)

## 3.1 State and Regional Documents

### ***Draft South West District Plan (2016)<sup>2</sup>***

This draft District Plan sets out a vision, priorities and actions for the development of the South West District of Greater Sydney which incorporates the areas of Campbelltown, Camden, Fairfield, Liverpool and Wollondilly. The following points outlined in the plan are of particular relevance to bushwalking tracks in the City of Campbelltown:

- this district is home to one of the most diverse communities in Australia and is one of the fastest growing areas in Greater Sydney.
- one of the district's key issues is transport in all its forms
- a key challenge is to ensure that the provision of jobs, transport and social infrastructure keep pace with population growth
- opportunity lies in the potential to strengthen the area's identity as "Sydney's urban parkland" and protect and enhance the natural assets, and access and connections to them.

The following actions are relevant to this *Review of Bushwalking Tracks and Associated Facilities*:

Reference	Action
P21	Leverage the South West District's potential as a visitor destination
L12	Develop guidelines for safe and healthy built environments
L13	Conserve and enhance environmental heritage including Aboriginal, European and natural
L14	Develop a South West District sport & recreation participation strategy and a facility plan
S1	Protect the qualities of the Scenic Hills landscape
S6	Develop a Strategic Conservation Plan for Western Sydney
S7	Update information on areas of high environmental value
S8	Use funding priorities to deliver the South West District Green Grid priorities
S9	Develop support tools and methodologies for local open space planning

### ***A Plan for Growing Sydney (2014)<sup>3</sup>***

This is the NSW Government's plan for the future of the Sydney Metropolitan Area over the next 20 years. The Plan provides key directions and actions to guide Sydney's productivity, environmental management, and liveability – including the delivery of housing, employment, infrastructure and open space.

An identified priority for Campbelltown-Macarthur is to work with Council to improve walking and cycling connections.

### ***Sydney Metropolitan Regional Recreational Trails Framework (2005)***

This report identifies general corridors for trails to deliver a strategically linked trails network in Sydney which transcends local government boundaries.

The George's River Trail/Great Kai' Mia Way is identified as a "Framework Trail" which links the Western Parklands and Eastern Creek Corridor to Coastal Trails. A link is required from Campbelltown via Mt Annan to The Great River Walk (Hawkesbury-Nepean River) to provide connectivity between framework trails. Both of these trail projects were identified as short-term priorities (0-5 years) for the Western Sydney region.

### ***Macarthur Destination Management Plan 2016-2020 (2015)***

This report outlines the region's opportunities for development as a tourism destination, with an associated Marketing Action Plan. The following opportunities identified in the plan broadly relate to bushwalking and complementary activities:

- Link Mount Annan to Western Sydney Parklands
- Boutique Glamping
- Riverside Activation
- Bush corridors for leisure tourism
- Greater Profiling of Bird Watching
- Strengthening Brand Identity
- Coordinated Signage Program

### ***Macarthur Region Recreational Trail Concept Report (2008)***

This report provides a concept for an off-road cycleway and pedestrian shared pathway providing connectivity throughout the region. The report outlines a concept for a trail linking Macarthur Garden, the University of Western Sydney, Mt Annan Botanic Garden, the Nepean River and Camden, as well as links with other trails and growth areas.

### ***Great Kai' Mia Way Feasibility Study (2004)<sup>4</sup>***

This report was prepared to assess the feasibility of a pedestrian and cycle route along the Georges River. Prepared more than 12 years ago, this study provides valuable insights into the viability of a trail along the river. The feasibility study concludes that the concept of the Great Kai' Mia Way was deemed possible and a range of recommended actions were made to progress the trail's development.

In 2000, Planning NSW commissioned a feasibility study for a pedestrian and cycle route along the Georges River. This study also concluded that such a route was possible.

### ***Recovering Bushland on the Cumberland Plain: Best practice guidelines for the management and restoration of bushland (2005)<sup>5</sup>***

This document provides guidance to land managers for the conservation, management and restoration of endangered Cumberland Plain ecological communities on private and public land. Trail bikes, off-road vehicles and rubbish dumping are identified among the threats to ecological communities, while passive recreation (i.e. walking, nature observation) is considered to be a low-impact use. Trail development in ecologically sensitive areas should consider the management guidance provided through this document.

## 3.2 Campbelltown City Council Documents

### ***Community Strategic Plan 2013 – 2023***

This is a high level strategic documents providing a framework for the Campbelltown City Council to work with over the ten-year period. The community vision statement: *a connected community with opportunities to grow in a safe and sustainable environment*. High quality walking tracks and associated facilities will contribute toward the achievement of the community vision statement and each of the Community Strategic Plan's five objectives:

- a sustainable environment,
- a strong local community,
- an accessible City,
- a safe, healthy and connected community,
- responsible leadership

### ***Open Space Plan Draft (November 2016)***

This document assists in developing an integrated and balanced response to the demands of existing and future Public Open Space needs, in order to best meet the needs of the community now and into the future.

Action 2.2.11: Review and update the Walking Tracks Concept Plans adopted in March 2004. Develop a Walking Trails Plan. Utilise the existing fire trails linking local reserves and public recreation areas with the scenic natural areas along the Georges River south from The Basin.

### ***Sport and Recreation Strategy 2016 – 2036 Draft Summary Report and Supporting Research Document (June 2016)***

This document delivers a comprehensive and prioritised plan for the future development and management of sport and recreation facilities.

The strategy identifies the need for a Walk/Cycle Strategy as a medium-term (6-10 years) priority. The strategy is aimed at maximising opportunities for walking/cycling and improving connectivity of the network (preferably integrated with an Active Transport Strategy).

### ***Environmental Education Plan (2016)***

The Environmental Education Plan provides a framework to guide the development and delivery of future environmental education programs that will empower the community to undertake behavioural change, live more sustainably and reduce their impact on the local and broader environment. The plan identifies the key areas of concern with regard to the State of Environment (SoE) reporting. These key areas of concern are land, biodiversity, waste, water, sustainability, community, heritage and air. Providing high-quality bushwalking tracks will support the objectives of the Environmental Education Plan, facilitating people to have a healthy relationship with, and respect for, the natural environment.

### ***Campbelltown Walking Track Network Options Review Report (2003)***

This report was prepared as phase 1 of a larger project to design a walking track network along the Georges River, in response to Council's allocation of \$25,000 in 2002/03 towards the project. Research provided insight into the economic gain expected from such a trail, and case study comparisons were made. Through a master planning process, three options for an integrated trails network between bushwalking locations were identified.

## 4. Trail Benefits, Trends and Demand

### 4.1 Benefits

Recreational trails offer a diverse range of benefits to our communities and the environment. The main benefits promoted by peak recreation bodies and organisations are outlined below.

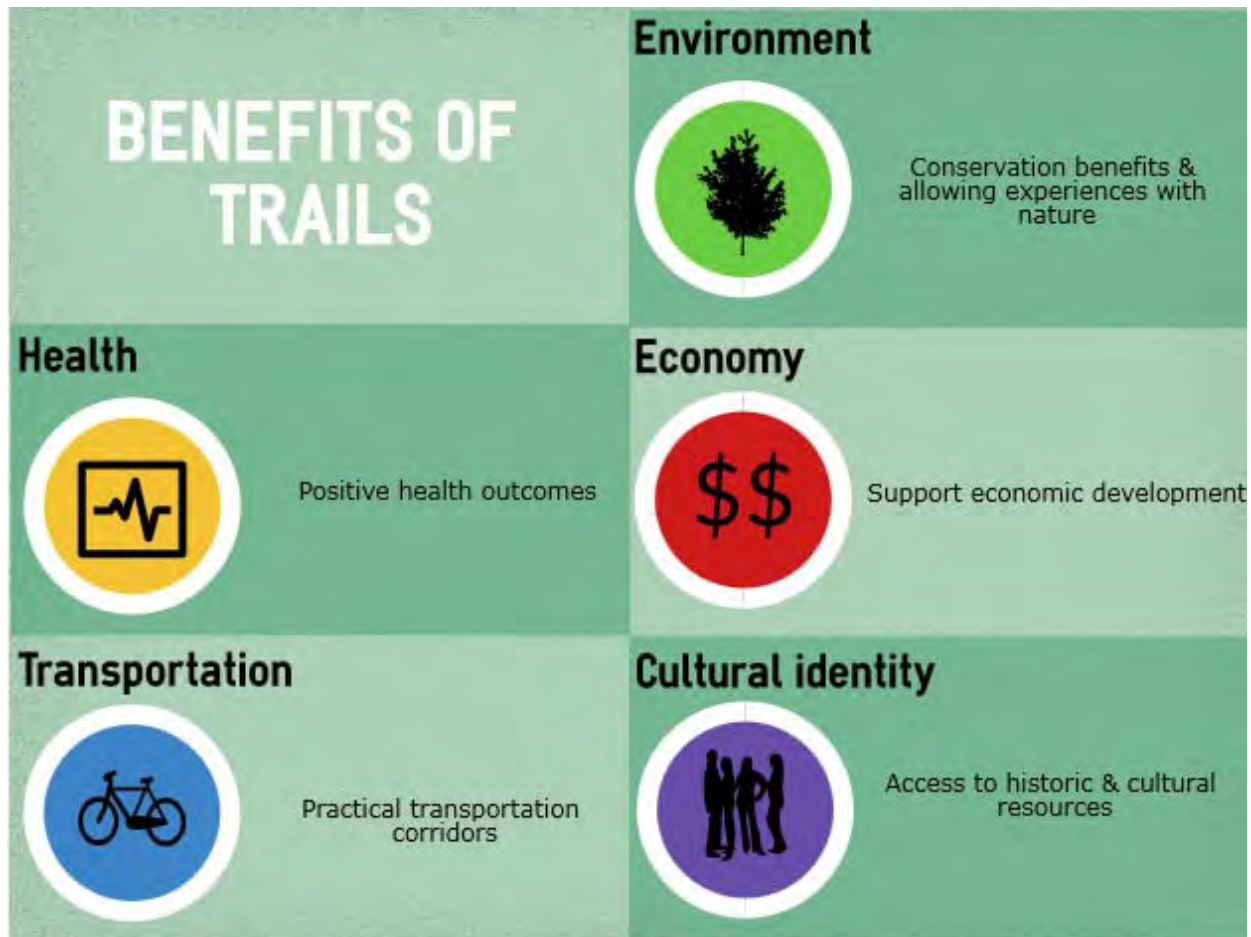







Figure 4 Benefits of trails

- **Health**  
Physical activity on trails can have positive health outcomes with regard to the nine National Health Priority Areas (NHPA) as outlined by the Australian Institute of Health & Welfare.<sup>6</sup>
- **Transportation**  
Trails offer practical transportation corridors to move people around a city or township through natural areas. This contributes to a region's "liveability".
- **Environment**  
Conservation benefits of preserving important natural landscapes while allowing humans to experience nature with minimal environmental impact.
- **Economy**  
Trails are important community amenities that support economic development including attracting visitors to the region.
- **Cultural identity**  
Trails highlight and provide access to historic and cultural resources.

**Table 2: Trail benefits in the local context**

Category	Example of benefit	Local context
Health 	Trails provide free opportunities for physical activity in a natural setting which contributes to mental and physical health outcomes.	The City of Campbelltown has relatively high levels of diabetes, mental health issues and overweight/obese people relative to the average for NSW <sup>7</sup> .
Transportation 	Trails can provide strategic links between destinations, particularly when integrated with transport networks.	Local public transport in the City of Campbelltown includes train and bus services. 13.2% of the City's population rely on public transport as their only method of travel <sup>8</sup>
Environment 	Defined and linking trails reduce the likelihood of people deviating into bushland or sensitive areas which assists with conservation. Trails in natural settings also facilitate a connection with nature and can inspire conservation efforts.	Decommissioning informal/unauthorised trails within reserves of high ecological value, such as Simmo's Beach Reserve, can contribute to conservation efforts and promote native flora and fauna habitats.  Promoting bushland reserves as places for environmental education can encourage residents to value the local environment and stimulate environmental stewardship.
Economy 	Local businesses benefit from the attraction of trail users to the region as visitors are likely to spend money on their visit.	Nature-based tourism presents an economic opportunity for the region. With marketing and promotion, high quality trails with unique recreational opportunities will attract visitors, such as The Basin in Keith Longhurst Reserve.
Cultural identity 	Trails contribute to sense of belonging and community pride for local people, with access to nature and historic sites.	The City's population is becoming increasingly culturally diverse. The region's Indigenous population makes up 3.2% of residents which is relatively high compared with the Greater Sydney (1.2%) and NSW (2.5%) <sup>9</sup> .



## 4.2 Nature/Adventure-based Activities

A recent report undertaken by the Adventure Travel Trade Association and The George Washington University<sup>10</sup> defines 'adventure travel' as a trip that:

- must take an individual outside of his or her regular environment for more than 24 hours (and no longer than one consecutive year)
- includes at least two of the following three aspects:
  - Participation in a physical activity
  - A visit to a natural environment
  - A culturally immersive experience

The report ranks 191 developed and developing countries (as recognised and classified by the United Nations) against 10 categories in terms of their respective adventure tourism potential for the year 2016.

Australia is ranked at number seven of developed countries (worldwide), performing particularly well in the following categories:

- Natural resources (well-managed, not overwhelmingly crowded natural environments)
- Entrepreneurship (a vibrant free market democracy conducive to cutting edge businesses, innovative ideas, young start-ups)
- Tourism 'soft' infrastructure (e.g. accessible information on heritage and culture, trail maps, interpreters, eco-lodges)
- Brand (the extent to which a country is perceived as an adventure destination)

Within the East Asia and the Pacific region, Australia ranked second for 2016.

Amongst the 34 activities identified by the report as meeting this definition, many of these activities could conceivably be accommodated within the City of Campbelltown's natural environment, to a greater or lesser extent.



**Figure 5: Adventure travel activities graphic from the ATDI 2016 report**

At a regional level, the purpose of the Macarthur Destination Management Plan 2016-2020 was to develop a clear understanding of key visitor markets and segments, major preferences for experiences, forecasted visitor growth and existing/potential experiential strengths of the region.

The Plan identified the following potential opportunities for the Macarthur region (that are considered to broadly relate to bushwalking and associated complementary activities):

- Bush corridors for leisure tourism (boardwalks, adventure parks, high ropes courses, zip lines)
- Riverside activation (including walking/cycling/mountain bike trails, boardwalks, canoe/kayak access)
- Greater profiling of bird watching
- Link Mount Annan to Western Sydney Parklands
- Boutique glamping
- Creation of/strengthening brand identity
- Coordinated signage program

Within this Review, the Strategy & Action Plan (Section 9.3) outlines several location-specific potential opportunities suitable for further investigation:

Strategy B1: Explore the potential for developing and formalising facilities for other recreational trail activities

Strategy B2: Further investigate opportunities to accommodate additional complementary activities at Council's bushland reserves

## 4.3 Return on investment in trails

High quality trails and associated activities support public health priorities and the development of nature/adventure-based tourism, having a positive economic impact. A number of studies have strived to quantify the return on investment in trails. Through various quantitative methods, the following case studies have identified the potential for high quality trails to bring significant tourism and public health benefits.

### **The Bibbulman Track, Western Australia**

The Bibbulman Track User Survey Report<sup>11</sup> (2015) estimated that the average user daily expenditure per person per day is \$38.71, with overnight walkers spending more than day walkers. The average total direct expenditure was estimated at \$13.1 million per year.

### **The Riesling Trail, Clare Valley, South Australia**

A *Trails Research Report*<sup>12</sup> (2004) determined that the Riesling Trail (a 35km rail trail) contributed an estimated \$1.08 million per year to the local economy, with an average of \$216 per person per visit to the region. The majority of this economic activity was generated through shopping, accommodation and food/drink expenditure.

### **Murray to Mountains Rail Trail, north eastern Victoria**

A *Longitudinal Study of the Murray to Mountains Rail Trail*<sup>13</sup> (2009) found that average direct expenditure was \$244 per person per day on the trail over the Easter period. The majority of this expenditure is on food and beverages at venues such as the café shown in the figure below. These research findings demonstrate that cycle tourists are high yield visitors, regularly exceeding expenditure in regional areas of other visitors



**Figure 6: Rail Trail Café along the Murray to Mountains Rail Trail, Porepunkah, north east Victoria**

### **Bike/Pedestrian Trails, Nebraska, United States**

A *Cost-Benefit Analysis of Physical Activity Using Bike/Pedestrian Trails*<sup>14</sup> (2004) from the United States concluded that trail development is an effective investment to reduce health care costs associated with inactivity. The study found that every US\$1 investment in trails for physical activity led to US\$2.94 in direct public health benefit.

## 4.4 Demand for Bushwalking Tracks

### National Participation Rates

The December 2016 release of AusPlay Participation Data outlines that walking (recreational) is the most popular sport/physical activity among Australian adults with an estimated 8,397,408 people (42.6% of the population) participating at least once between October 2015 and September 2016. Athletics (including jogging and running), cycling, bush walking and canoeing/kayaking also featured among the 20 most popular sports/physical activities. The table below displays this data with the corresponding participation rates.

**Table 3 Adult participation in sport and physical activity in Australia 2015-16 (AusPlay Data)**

Activity	Population estimate	Participation Rate (%)
Walking (recreational)	8,397,408	42.6
Athletics (including jogging and running)	3,115,027	15.8
Cycling	2,302,614	11.7
Bush walking	1,058,061	5.4
Canoeing/Kayaking	312,664	1.6

Australasian Leisure Management Journal<sup>15</sup> has reported that the proportion of Australians who go hiking and bushwalking has skyrocketed over the last five years. The research shows that between October 2010 and September 2015, the proportion of Australians aged 14 years or over who reported going hiking/bushwalking on a regular basis grew from 2.9% to 5.2%, while those who participated either regularly or occasionally increased from 15.6% to 27.3% (or more than 5.3 million Australians). This study notes that destinations offering scenic wilderness hold greater appeal which is in line with a report *The Future of Australian Sport*<sup>16</sup>. This report identifies six sporting megatrends that may redefine the Australian sport sector over the next 30 years.

1. A Perfect Fit
2. From Extreme to Mainstream
3. More than Sport
4. Everybody's Game
5. New Wealth, New Talent
6. Tracksuit to Business Suit

Of particular relevance to bushwalking tracks in the City of Campbelltown are:

**A Perfect Fit** refers to the trend of increasing popularity amongst individualised sport and fitness activities. People are increasingly becoming involved in individualised activities as they are generally living busier lifestyles and have less time for structured/organised sports. Bushwalking and jogging are examples activities that can occur at any time, individually or in groups.

**From Extreme to Mainstream** refers to the trend of *Adventure, Lifestyle, Extreme* and *Alternative* sports increasing in popularity. These sports are often characterised by a strong lifestyle element and participants often obtain cultural self-identity and self-expression through participation in these sports/activities. For example, long distance/overnight walking tracks provide this opportunity for adventure.

**More than Sport** refers to the trend of governments (federal, state and local level) and companies increasing their utilisation of sport to achieve their policy objectives. Organisations are increasingly incorporating sport and recreation into various policies to tackle a range of issues from childhood

obesity through to social inclusion. For example, the heart foundation walking program helps governments at all levels to achieve numerous policy objectives.

**Everybody's Game** refers to the trend of sports/recreational activities becoming more and more geared towards the ageing and more culturally diverse Australian population. This is particularly important for the City of Campbelltown with the population becoming increasingly culturally diverse<sup>17</sup>.

### New South Wales Participation Rates

The top ten physical activities in New South Wales are detailed in the table below. Of particular interest to this project are walking for exercise, jogging/running and bushwalking. Walking for exercise is the activity with the highest level of participation in the state, with a high participation rate of 23.6%. An estimated 1,206,500 people aged 15 years and over participated at least once in walking for exercise in the 2011-12 period. Running/jogging is identified as the 4<sup>th</sup> most popular activity among the state's population with participation rates of 8.1% and 6.1%, respectively. Bushwalking is ranked as the 9<sup>th</sup> most popular activity, with a participation rate of 2.8%.

**Table 4 Persons participating in sport and recreation in New South Wales 2011-12<sup>18</sup> (ABS Data)**

No.	Activity	ESTIMATE ('000)			PARTICIPATION RATE (%)		
		2005-06	2009-10	2011-12	2005-06	2009-10	2011-12
1	<b>Walking for exercise</b>	<b>1,206.5</b>	<b>1,213.1</b>	<b>1,384.1</b>	<b>22.5</b>	<b>21.2</b>	<b>23.6</b>
2	Fitness/Gym	659.6	754.7	969.7	12.3	13.2	16.6
3	Swimming/Diving	556.4	485.1	506.0	10.4	8.5	8.6
4	<b>Jogging/Running</b>	<b>244.5</b>	<b>388.9</b>	<b>474.9</b>	<b>4.6</b>	<b>6.8</b>	<b>8.1</b>
5	Cycling/BMXing	298.3	305.6	358.2	5.6	5.3	6.1
6	Golf	277.0	241.2	309.3	5.2	4.2	5.3
7	Tennis	309.0	235.1	275.3	5.8	4.1	4.7
8	Soccer	219.8	192.9	206.4	4.1	3.4	3.5
9	<b>Bush walking</b>	<b>195.4</b>	<b>154.3</b>	<b>165.9</b>	<b>3.6</b>	<b>2.7</b>	<b>2.8</b>
10	Football sports	N/A	N/A	155.6	N/A	N/A	2.7

# 5. Trail Planning and Design

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## 5.1 Sustainable Recreation Trails Guidelines

The publication *Sustainable Recreation Trails Guidelines*<sup>19</sup> provides guidelines for the planning, design, construction and maintenance of recreational trails. These guidelines currently represent industry best practice in Australia, with information derived from various national and international publications. Key information derived from these guidelines is outlined below.

### **Sustainable Trails**

It is fundamentally important that recreational trails are socially, economically and environmentally sustainable. Recreation activities that diminish natural values (biodiversity and landscape amenity) are generally inappropriate and not acceptable to the community or other stakeholders. It is vital, therefore, that high quality recreational trail experiences are developed in landscapes that are capable of supporting such activities.

The enhancement of natural areas through the protection of biodiversity and raising environmental awareness are key to the development of an environmentally sustainable trail network. This can be achieved through appropriate trail design, location selection and ongoing management.

Trails must also be economically and socially sustainable. There is a growing body of evidence which identifies the economic benefits that well-developed trails can bring to a local community and/or a region through increased visitation, including tourism. However, the development of recreation trails must also take into account the sensitivities and desires of local communities. While well designed and managed recreation trails can enhance the well-being of local communities by improving access and increasing physical activity, recreation trails development must take into consideration the views of local residents and adjoining property owners.

### **Accessible Trails**

Intertwined with the objective of sustainability is the need for trails to be accessible. One of the main roles of trails is to link communities to a variety of high quality experiences and interesting natural and rural landscapes. In addition, trails can improve mobility and connectivity within and between urban areas. Trails which are readily accessible and provide links between communities and landscapes can enhance lifestyles through the promotion of physical activity, reducing the reliance on motorised vehicles and improving health and fitness.

Accessibility is determined by:

- proximity to the metropolitan area, population centres or tourist attractions.
- proximity to transportation facilities such as railway lines or road network providing access to the site.
- existing or proposed linkages to other trails and the wider trails network.
- proximity to natural attractions such as scenic views, native vegetation, waterfalls, lakes and coastline.
- presence of existing facilities that may support or facilitate use of the trail such as car parks, toilets, picnic facilities, camping sites, tourist information centres, cafes and tour operators.
- the nature of the terrain and landform.
- access for emergency vehicles.

Proposals for new trails, or upgrades to existing trails, should clearly demonstrate that they meet at least half of the accessibility determinants expressed above. This will assist in the promotion of the



trail to prospective user groups and ensure that any associated economic and social benefits are shared amongst nearby communities.

## **Design**

Key guidance includes the following:

- Generally, it is preferable to design a trail system with loops and stacked loops that offer a number of options and a variety of experiences, while preventing the need to back track.
- The planning and design phase should clearly determine whether the trail is intended for single or shared-use; shared-use will encourage greater usage; however they need to be carefully designed to avoid conflict between users.
- Identification of 'control points' (places of interest) will dictate where the trail should commence and finish, the location of parking areas, structures, road and water crossings.
- The most sustainable trails tend to have a low overall grade (less than 10% change in elevation) thereby minimising the potential for water erosion. They also tend to follow existing contour lines.
- Design should respond to 'trail flow'; mountain bike riders tend to travel faster than walkers and horse riders and require a certain tempo/rhythm. Types of flow might be described as 'open and flowing', 'tight and technical', or a combination of both.
- Once a preferred route alignment is identified consideration will need to be given to items such as trail dimensions (corridor/path width & height clearance), construction timelines, logistics of the build and responsibilities for associated infrastructure (such as signage, parking, stiles, crossings).
- Conservation values of the area need to be considered in terms of protecting habitat and areas of cultural significance through control and management of access.

## **Construction**

Key guidance includes the following:

- There may be a need to clear obstacles from the chosen route. Tree and vegetation removal may require prior approval from relevant planning authorities such as local Council or from State Government.
- Trails are usually built on sloping ground therefore some excavation may be required. When tree roots or impenetrable rock make it difficult to establish a full bench a retaining wall can be built to support the downslope side.
- Natural surfaces will be suitable in many circumstances, whilst an artificial trail surface (such as bitumen, crushed rock, sand) may be required if anticipated user numbers are high. Types of surface are also dependent on the type of user.
- Running water will erode the trail so diverting surface water off the trail is a high priority, achieved through the use of cross slopes, grade or drain dips and waterbars.
- Water crossings are sites that may have the greatest impact on water quality and also the greatest potential to damage the trail.
- Where possible, low lying and boggy terrain should be avoided, otherwise a raised boardwalk or reinforced tread may need to be considered.

## **Management & Maintenance**

A Trail Management Plan should be prepared that is both flexible and responsive to change whilst setting firm guidelines for future directions and priorities. A Trail Management Plan should include:

- philosophical background to trail development
- statement of guiding principles
- trail construction standards
- target user groups and user experiences
- risk management policy
- hazard inspection policy
- promotional and interpretation policy
- group usage policy and guidelines
- annual trail maintenance program
- clarification of management roles and responsibilities
- promotional mapping and brochures
- fire management and emergency evacuation procedures

Trail projects will inevitably involve a range of partners and it is crucial to clearly establish roles and responsibilities for all those involved. Ongoing trail maintenance is also essential and a clear and concise management plan including a regular maintenance program will assist in managing ongoing resource demands.

Maintenance can generally be divided between regular inspections and simple repairs, potentially undertaken by a variety of individuals ranging from land manager's staff and contractors to volunteers under skilled supervision. Maintenance activities are most likely to address issues of regrowth vegetation, damage to signage and accumulation of litter/debris.



## 5.2 Potential Environmental & Heritage Impacts

A trail network that is well designed, constructed, maintained and managed is not likely to have significant adverse impacts on the natural environment and local cultural heritage. Trails can in fact have beneficial impacts on these features through facilitating responsible and low-impact experiences with natural and cultural heritage features and subsequently promoting conservation and preservation efforts from the local community.

Of particular relevance to Campbelltown City Council bushland reserves is the need to protect vegetation listed as Ecologically Endangered Communities (EEC). These include the Shale/Sandstone Transition Forests and Coastal Upland Swamps, Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forests.

Impacts of each trail project will vary and should be identified and mitigated during the trail detail design stage, as explored above in section 5.1 *Sustainable Recreation Trails Guidelines*. The table below outlines potential impacts from trails and provides examples of possible mitigation measures.

**Table 5: Potential environmental/heritage impacts of recreation trails**

Example potential environmental/heritage impact <sup>20</sup>		Detail	Example of possible mitigation measure
<b>Soils</b>	Erosion	Destabilisation of soils from construction and trail use	<ul style="list-style-type: none"> <li>• Use of stabilisation infrastructure (e.g. rock armouring)</li> <li>• Trail design follows contours where possible</li> </ul>
	Soil degradation	Compaction of soils from construction and trail use	<ul style="list-style-type: none"> <li>• Trail located on suitable surface types (e.g. horse riding most suited to sandy terrain)</li> </ul>
<b>Flora and fauna</b>	Habitat fragmentation	Reduced connectivity within habitats & native vegetation corridors	<ul style="list-style-type: none"> <li>• Trails designed with narrow widths</li> </ul>
	Habitat disturbance	Disturbance of nesting areas from human activity	<ul style="list-style-type: none"> <li>• Trail location determined in line with ecological site values</li> <li>• Interpretation signage</li> </ul>
	Invasive plants	Increased entryways for invasive plant introduction	<ul style="list-style-type: none"> <li>• Increase management/removal of invasive plant species</li> </ul>
<b>Water resources</b>	Riparian buffers	Disturbance to floodplain vegetation	<ul style="list-style-type: none"> <li>• Trail location and design to choose a path of least impact to vegetation</li> </ul>
	Watershed imperviousness	Reduced natural flood capacity with impermeable trail surfaces	<ul style="list-style-type: none"> <li>• Trail design to use a permeable trail tread where possible and include drainage infrastructure</li> </ul>
	Runoff	Increased soil runoff potentially a source of pollution to water resources	<ul style="list-style-type: none"> <li>• Trail design to reduce erosion and runoff and to include drainage infrastructure</li> </ul>
<b>Cultural resources</b>	Indigenous and European heritage	Exposure of culturally significant features to vandalism, littering and other unauthorised activities	<ul style="list-style-type: none"> <li>• Trail infrastructure restricting access to sensitive sites</li> <li>• Interpretive signage encouraging site preservation</li> <li>• Use of crime prevention through environmental design (CPTED)</li> </ul>

## 5.3 Trail Classifications

Trail classifications allow land managers to develop trails that are appropriately designed for the anticipated trail users and to provide suitable levels of facilities and management. A number of attempts have been made to classify different types of trails for different user groups. There is no single grading system that is applicable to all types of trail. Trails for walking are classified on a difficulty scale from grades one to five, while the mountain biking trail classification ranges from very *easy* to *extreme* and horse riding trail classification ranges from *easy* to *advanced*.

### Australian Walking Track Grading System

Pre-2010, the grading systems applied to walking trails and the information conveyed to walkers varied considerably between states and territories and even between different land managers within states. The lack of consistent standards for walking trail grading makes it difficult for the public to choose walking trails that are suitable to their skills and level of fitness. Where grades vary, are confusing or are poorly understood, it can act as a deterrent to people undertaking walks, particularly to less confident and able walkers.

### Australian Standard 2156.1-2001 Walking Tracks - Classification and Signage<sup>1</sup>

In 2010 a proposed Australian Walking Track Grading System was developed and this system was endorsed by Parks Forum (the former peak body for park management organisations) as a voluntary industry standard. The aim of the Australian Walking Track Grading System is to encourage people who are not regular or confident bushwalkers to get out there and give it a go. It is specifically designed to reassure entry level walkers, particularly persons with a disability or people walking with children, that a particular trail is suitable for their skill level. Victoria's Department of Sustainability and Environment (DSE) is currently re-grading its State Forest walking trail network to be consistent with the new grading system.

Under the new system, walking trails are graded on a difficulty scale from grades one to five, as follows:

- Grade One is suitable for persons with a disability with assistance
- Grade Two is suitable for families with young children
- Grade Three is recommended for people with some bushwalking experience
- Grade Four is recommended for experienced bushwalkers
- Grade Five is recommended for very experienced bushwalkers



Figure 7: Walking track grading system icons

The Australian Walking Track Grading System was developed by the Walking Tracks Grading and Improvement Project and funded by 'Go for your life' – a Victorian Government Initiative. The first walking track to have been re-graded was the Whipstick Loop Walk. Below is an image of the newly installed sign which includes the symbol showing the walk's grade as well as information on its distance, time to complete, gradient and quality of path.



#### Whipstick Loop Walk

Grade of Walk <sup>1</sup> :	Grade 3
Distance:	Circuit 5.0km
Time:	2 hours return
Gradient:	Short steep hills
Quality of Path:	Formed track, some obstacles
Quality of Markings:	Sign posted
Steps:	Occasional steps
Experience required:	Some bushwalking experience recommended

**Figure 8: Whipstick Loop Walk, Victoria**

Refer [www.dse.vic.gov.au](http://www.dse.vic.gov.au) for more information.

## 5.4 Naming Conventions

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:

**Table 6: Considerations for naming trails**

Consideration	Detail	Example
Consistency	Trail naming should be consistently approached throughout the region. A trail's name needs to be clearly determined to prevent confusion for management and users.	The walking trail to "The Basin" in Keith Longhurst Reserve is well recognised by a consistent name. This helps users recommend the trail and assists with safety and maintenance processes.
Relevancy	A trail's name should reflect the trail's natural and/or cultural features. Interpretive signage may be used to reinforce the relevance of the trail's name whilst educating users.	Frere's Crossing is an historical feature in Frere's Crossing Reserve. Interpretive signage would enhance the trail experience through educating users on the site's historical context.
Representative	Trail names can be used to represent basic information about the trail such as location, key features and characteristics. A trail name can be misleading if it is not appropriately determined.	Trails which are a loop can convey trail information through incorporating the "loop" into the name. For example, a loop through Frere's Crossing Reserve to the historical site could be named "Frere's Crossing Loop Trail"

The following definitions will assist in determining names of trails which are representative of trail features and characteristics and in the promotion of trails:

Term	Definition
Circuit/loop trail	 A trail which starts and ends at the same location. This can be communicated through the trail name and/or a corresponding symbol
One-way trail	 A trail which starts and ends at different locations. This can be communicated through a corresponding symbol
Walk trail	A trail which permits the use of people walking / running
Bridle/horse trail	A trail which permits the use horse riders
Mountain bike trail	A trail which permits the use of mountain bike riders
Universal access trail	A trail which is accessible for persons with a disability with assistance. (i.e. Grade One in the Australian Walking Track Grading System)
Shared-use trail	A trail which permits the use of two user groups (e.g. bikes and walking)
Multi-use trail	A trail which permits the use of three or more user groups (e.g. bikes, walking and horse riding)

**Table 7: Trail naming descriptors**

## 5.5 Signage

### Signage Guidelines/Standards

Key elements for consideration when developing signage for recreational trails are outlined in the table below.

**Table 8: Trail signage considerations**

Signage consideration	Detail
Adherence to recognised standards	Trail construction, signage and trail markers, and trail classification will comply with recognised Australian standards, thereby ensuring a high quality and safe experience for all trail users.
Consistency and uniformity of signage	Signage is recognised as an essential element of a quality trail, and all signage erected at trailheads, along nearby and adjoining roads conform to accepted standards, and will maintain a consistent theme along the entire trail.
Quality information	As well as brochures and mapping, quality on-trail information needs to be provided. Quality information needs to be distributed widely through a range of methods.
Location of signage	Signs should be designed and placed with consideration of approach speed, impact on the scenic amenity and ability to be seen without obstruction of trees etc.
Visually attractive and simple	Signs need to be visually attractive, easy to comprehend and suitable to the natural surroundings.
Signage material	Signs need to be built to be resistant to factors such as vandalism and extreme weather events.

There are a range of different classifications for recreational trail signage. These can be classified by the following:

1. Trailhead
2. Waymarking
3. Directional
4. Interpretive
5. Management/warning

## 1. Trailhead signage

A trailhead sign is the primary sign at the location where a user can access a trail. A trailhead is an important point of reference and is usually the appropriate location for associated trail infrastructure such as amenities, car parking and picnic facilities. Trailhead signage should provide the following information:

- Trail name
- Permitted user type/s
- Trail classification (in line with the Australian Walking Track Grading System)
- Trail length, type (loop or one-way) and estimated completion time
- Safety and management information, including environmental sensitivities, code of conduct, opening/closing times, land manager contact details & emergency information
- Facilities associated with the trail (toilets and amenities, picnic facilities, drinking water etc.)
- Navigation map and information. Where the trailhead is at the beginning of a trail network it is necessary to have information regarding all associated trails

Maps on trailhead signage need to be displayed at an appropriate scale to show where trails intersect with a clear legend, north arrow pointing upwards and labels of significant landmarks/features. In this day and age, many trail users take digital photographs of the trailhead sign to refer to whilst using the trail. Examples of best practice trailhead signage are shown in the figures below.



**Figure 9: Trailhead for Perth Hills Heritage Trails, Western Australia**



Trail classification system (generic)

Safety/management information, advice, trail user conduct, bushfire safety, land manager/emergency contact details

Environmental sensitivities (e.g. Phytophthora)

Interpretation/photography



Trail network name

Introduction to the area, including interpretation

Navigation mapping including trail alignments, key trail support infrastructure (e.g. toilets, water supply, car park, picnic facilities)

Individual trails & key information (distance, time, classification, permitted user types)

Land manager identification / branding

Figure 10: Trailhead signage requirements

As outlined in the figure above, it is important that all trailhead signs are professionally displayed, simple to comprehend and include all of the following information.

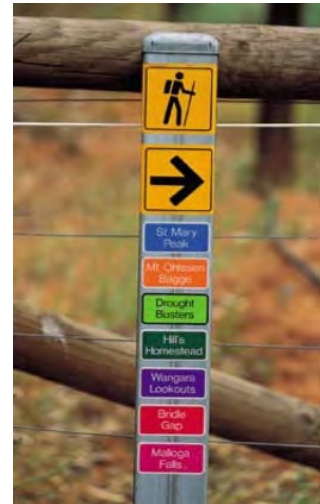
- ✓ Trail network name
- ✓ Information about the area
- ✓ Navigation mapping
  - Trail alignment
  - Key trail features & support infrastructure
  - North arrow (facing upwards)
  - Scale bar
  - Legend
- ✓ Trail classification system (e.g. Australian Walking Track Classification System)
- ✓ Individual trail information
  - Trail name
  - Trail distance and estimated time
  - Trail system type (e.g. loop, return, one way)
  - Permitted trail user/s (e.g. mountain bikers, walkers, horse riders)
  - Trail difficulty classification to relevant system
- ✓ Safety/management information
  - Advice
  - Permitted trail use
  - Trail user conduct
  - Emergency contact details and procedures
- ✓ Website and/or QR code providing further details

In addition, trailhead signs can be used to enhance the trail experience through providing specific historical, cultural, geological and/or environmental features that can be found along a trail as well as to promote other recreational trails in the region.



## 2. Waymarking signage

Waymarking signs provide trail users with reassurance that they are following the correct alignment. The amount of waymarking necessary is dependent on the type 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, as shown in the following figure.



**Figure 11: Waymarking sign in the Ikara-Flinders Ranges National Park, South Australia**

## 3. Directional signage

Directional signage is for directing users to or from the trailhead and other features, such as a nearby town, road or car park facility. 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 the town if they are aware of its close proximity.



**Figure 12: Directional signage on the Brisbane Valley Rail Trail, Queensland**

#### 4. Interpretive signage

Interpretive 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.



**Figure 13: Interpretive signage, Perth Hills, Western Australia**

#### 5. Management/warning signage

Management/warning signage is used to advise trail users of dangers, risks or management policies such as trail user conduct, the temporary closure of a trail, bushfire threats or change of land management. The sign should clearly inform users of the risk and advise a precautionary action. These signs play an important role for both users and land managers in the risk and safety management of a recreational trail.



**Figure 14: Management/warning sign on the Great Blue Mountain Trail, New South Wales**

## 5.6 Marketing & Promotion

### Trail Marketing and Promotion Guidelines/Standards<sup>24</sup>

Promotional material is often the primary point of contact with trail users and it should provide potential users with motivation to use the trail, confidence to find the trailhead/correct route and encouragement to appreciate the features of the trail. Key elements for consideration when developing marketing and promotional material for recreational trails are outlined below.

#### Targeted trail user market

It is important to target the correct audience (e.g. locals and/or visitors, experienced trail users/novice trail users) by ensuring that materials are appealing to the target market and by distributing information accordingly.

#### Trail brochure design

Formal trails should be featured in a professionally developed trail brochure with an associated map and trail information. These should be produced at either A4 or A3, printed both sides, and folded to DL (standard envelope) size. They should be produced in at least two colours and professionally printed. Per item printing costs reduce dramatically as print runs grow larger but trails do change and brochures need to be updated, so it is important not to print too many. A printable and smart phone compatible version should also be uploaded to the appropriate website.

#### Trail brochure information

A trail brochure should generally have most, if not all, of the following features:

- Clear, concise map/s with distances, trail features, scale bar, north arrow, legend and contours
- trail notes, describing key points along the way, relating these to distances and directions
- background information about the trail, and the history of the area
- trail code of practice
- interpretive information about culture, history, geography and environmental values
- information about management and maintenance, including phone numbers for reporting any trail related matters
- emergency contact details
- clear indication of routes to and from the trail head and parking areas
- Clear, concise map/s with distances, trail features, scale bar, north arrow, legend and contours

#### Trail marketing and promotion methods

Trails can be marketed and promoted through a range of methods including the following:

- Printed material at Visitor Information Centres, community centres and retail shops
- Websites featuring promotional trail brochures and, where appropriate, videos
- Traditional media such as featured newspaper/magazine articles (this can be encouraged through the provision of media releases relating to trail updates/events)
- Social media such as Facebook, Instagram
- User-generated sites such as blogs, Mapmyrun.com
- Local community involvement in trails, stimulating word-of-mouth marketing

An example of a best practise trail brochure and associated marketing and promotion is the Riesling Trail in the Clare Valley, South Australia (see <http://rieslingtrail.com.au/>).

## 5.7 Trail Planning Principles

The following trail planning principles have been developed to inform the recommendations of this Review:

- Ensure socially, economically and environmentally sustainable trail development and management
- Provide trails which are readily accessible and provide links between communities and landscapes
- Provide a diverse range of trail opportunities relevant to the needs and demands of the community
- Maximise use of existing trails where they are appropriately located and have the capacity to sustain additional use
- Manage trails professionally, effectively and equitably
- Provide safe trails through adherence to relevant legislative and activity safety requirements
- Encourage community involvement in the planning and design of trails
- Trails that have identified Aboriginal heritage values should involve local Indigenous People in their planning, design and interpretation
- Support, promote and advocate for trail users in relation to relevant issues within the region
- Partnerships with the private sector, the community, local businesses, tourism providers and other tiers of government to provide trails and associated facilities will be pursued where possible

## 6. Existing Trail Audit

An audit of recognised/authorised bushwalking tracks involved walking each track with a handheld Global Positioning System (GPS) device to collect spatial information. The audit information collected allows for review and assessment of the existing trails with consideration of key issues. The data collected during the audit relates to the identification of the following trail characteristics

- Trail type
- Trail location
- Trail length
- Classification
- GIS/GPS information
- General condition
- Trail infrastructure (including photograph and attributes)

Bushwalking trails in the following six Council reserves were audited in detail:

- Keith Longhurst Reserve, Georges River Road, Kentlyn
- Frere's Crossing Reserve, Frere's Road, Kentlyn
- Ingleburn Reserve, Picnic Grove, Ingleburn
- Simmo's Beach Reserve, Fifth Avenue, Macquarie Fields
- The Woolwash, Woolwash Place, Airds
- Noorumba Reserve, Appin Road, Gilead



**Figure 15: GPS trail auditing device**

Although not formally audited during these processes, there exists a network of informal/unauthorised tracks and trails on land adjacent to each of these reserves, and often linked in with the existing trail networks within the reserves.

Where resources allowed, these alignments were investigated further and partially mapped to provide context to the existing trails network and enable the identification of potential future opportunities where the existing trails network on Council managed reserves might be extended to diversify the range of recreational trail options (subject to future detailed investigations).

In addition to the above identified Council reserves, there exist other Council reserves that offer networks of informal tracks and trails suitable for walking (and cycling). The following Council reserves were visited to inform the potential of establishing key linkages to develop a wider strategic network of connected trails utilising Council reserves:

- Smiths Creek Reserve/Flynn Reserve, Leumeah / Ruse / Bradbury
- Fisher's Ghost Park, Bradbury
- Kanbyugal Reserve, Woodbine

The table on the following page provides a snapshot of existing formally recognised trail provision on Council reserves within the City of Campbelltown.

**Table 9 Existing trail provision overview**

Reserve/Park	Bushwalking Trail	Length (m)
Keith Longhurst Reserve	The Basin Walking Trail	1,054
	Old Ford Road Walking Trail	1,391
	(Plus network of existing firebreaks and informal tracks within the reserve)	
Frere's Crossing Reserve	Frere's Reserve Walking Trail	1,002
	(Plus network of existing firebreaks and informal tracks within the reserve)	
Ingleburn Reserve	Ingleburn Reserve Walking Trail	154
	(Plus network of existing firebreaks and informal tracks within the reserve)	
Simmo's Beach Reserve	Simmo's Beach Walking Trail	1,968
	(Plus network of existing firebreaks and informal tracks within the reserve)	
The Woolwash	Network of existing firebreaks and informal tracks within the reserve	
Noorumba Reserve	Network of existing firebreaks and informal tracks within the reserve	
<b>Total length of formal bushwalking trails on council land</b>		<b>5,569</b>

As noted in the table above, there are extensive networks of firebreaks and informal trails within and adjacent to each Council reserve. The audit process has captured both formal and informal alignments and further details are available in audit data files and on the following series of maps. There is a total of 5,569 meters of formally recognised bushwalking trails within the six identified Council reserves.

In addition to the bushwalking trails provided by the City of Campbelltown, the following State government managed parks provide bushwalking opportunities within the local government boundary:

- **Australian Botanic Gardens**

The southern and western extents of the Australian Botanic Gardens are located within the Campbelltown City Council area and the park is managed by the Botanic Gardens Trust on behalf of the State government. The Gardens host a network of walking, cycle and mountain bike tracks of varying difficulty which are accessible to the public.

- **Dharawal National Park**

The northern extent of Dharawal National Park lies within the Campbelltown City Council boundary and promotes three relatively short bushwalking tracks and a 15 kilometre cycling route<sup>22</sup>.



## 6.1 Simmo's Beach Reserve

**Table 10: Simmo's Beach audit summary**

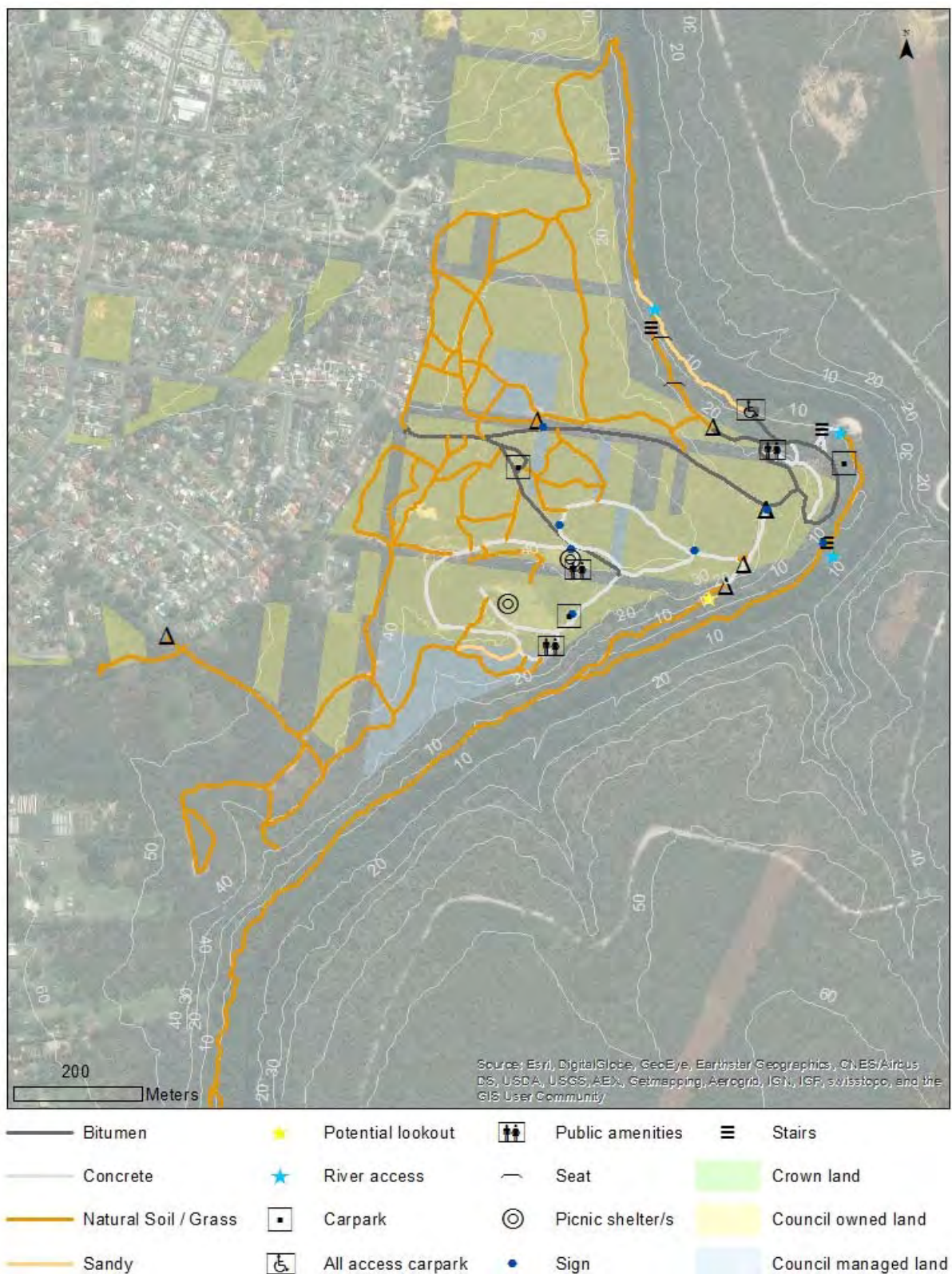
Description		
This reserve is known for Simmo’s Beach, a unique feature providing a sandy bank and access to the Georges River. The beach is easily accessible from the carpark and access is provided through disabled carparking spaces. A concrete path leads to the quarry and wetlands from Simmo’s Beach. This reserve hosts a range of reserve infrastructure and the gated entrance is actively managed. A range of Endangered Ecological Communities exist within this reserve.		
Location		Tenure
Fifth Avenue, Macquarie Fields		Council owned and managed land
Accessibility		
Located 14.6km (22-minute drive) from Campbelltown City Centre, this reserve is within 700m of public transport routes.		
Formal marketing and promotion		
<ul style="list-style-type: none"><li>City of Campbelltown Parks and Recreation Website</li><li>Georges River Bushwalking Guide</li><li>Campbelltown Experience Guide</li></ul>		
Formal bushwalking trails within reserve		
Trail	Length (m)	Classification
Simmo’s Beach Walking Trail	1,968	Grade 2
Informal tracks within reserve		
12,005 metres of informal tracks audited		
Reserve infrastructure and facilities		
<div><ul style="list-style-type: none"><li>Picnic areas</li><li>Public amenities</li><li>Carpark (including all access car park)</li><li>Children’s playground facility</li></ul><ul style="list-style-type: none"><li>Seating</li><li>Signage</li><li>Stairs</li></ul></div>		
Distinct reserve features		
<u>Environment</u>	<ul style="list-style-type: none"><li>Protected vegetation: Shale/Sandstone Transition Forest, Hinterland Sandstone Gully Forest, Sandstone Riparian Scrub, Coastal Sandstone Ridgetop Woodland, Castlereagh Scribbly Gum Woodland</li></ul>	
<u>History</u>	<ul style="list-style-type: none"><li>The reserve was officially opened in 1986 and was named after Bob “Simmo” Simmonds, a past resident who mined sand adjacent to the Georges River</li><li>The sandstone quarry is now a feature of the reserve</li><li>In the 1970s sand-mining was stopped and the areas was designated as a passive recreation reserve for the growing population of Campbelltown.</li></ul>	



**Figure 16: Simmo's Beach**



**Figure 17: Trail along river**



**Figure 18: Simmo's Beach audit map**



## 6.2 Ingleburn Reserve

Table 11: Ingleburn Reserve audit summary

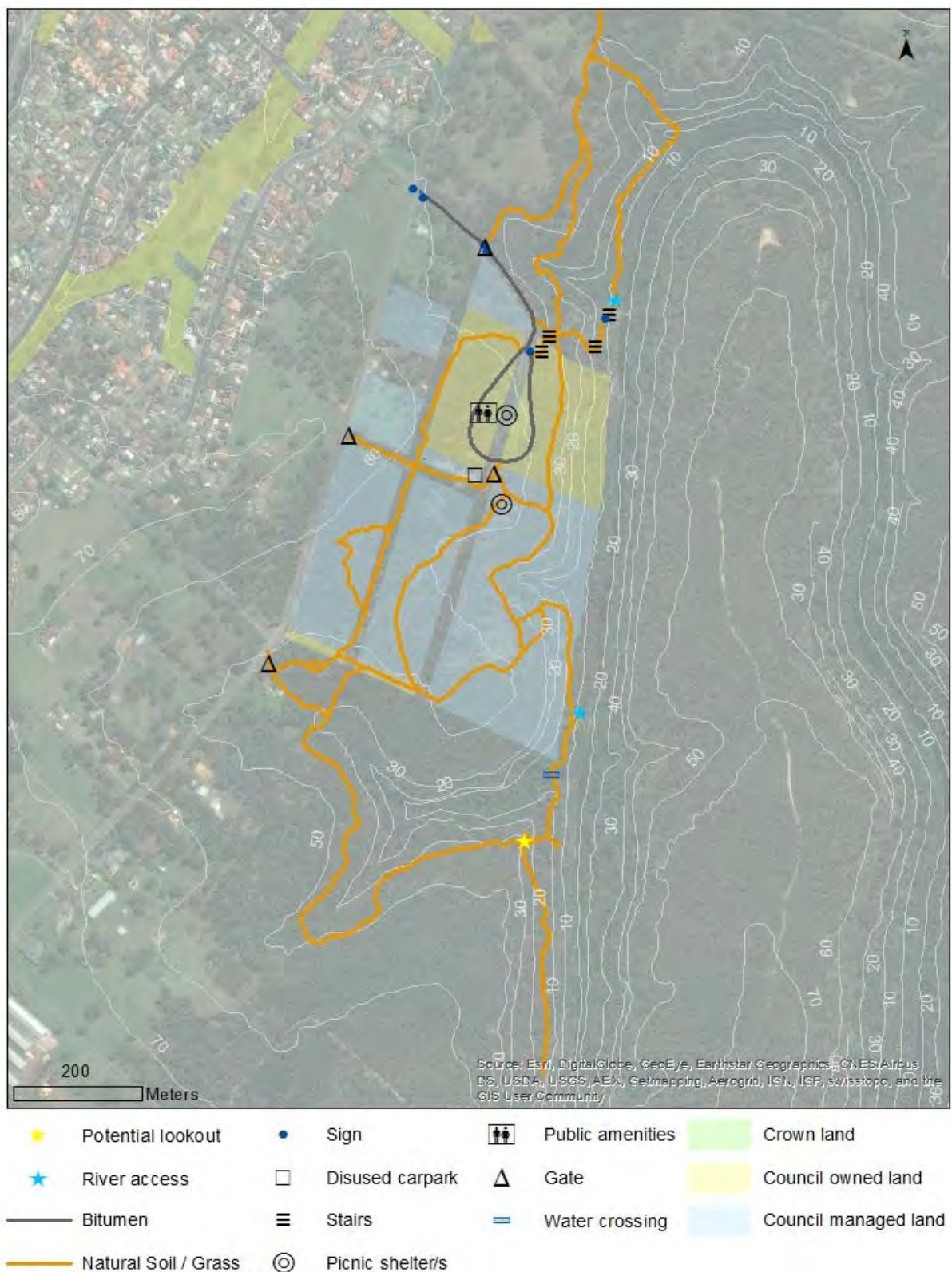
Description		
This reserve is known for the Ingleburn Weir which is a scenic location providing access to the along the Georges River. A range of Endangered Ecological Communities exist within Ingleburn Reserve. Reserve infrastructure has recently been upgraded infrastructure and the entrance is actively managed.		
Location		Tenure
Ingleburn Reserve, Picnic Grove, Ingleburn		Council owned and managed land
Accessibility		
Located 12.2km (18-minute drive) from Campbelltown City Centre, this reserve is within 250m of public transport routes.		
Formal marketing and promotion		
<ul style="list-style-type: none"><li>• City of Campbelltown Parks and Recreation Website</li><li>• Georges River Bushwalking Guide</li><li>• Campbelltown Experience Guide</li></ul>		
Formal bushwalking trails within reserve		
Trail	Length (m)	Classification
Ingleburn Reserve Walking Trail	154	Grade 3
Informal tracks within reserve		
7,356 metres of informal tracks audited		
Reserve infrastructure and facilities		
<div><ul style="list-style-type: none"><li>• Picnic areas</li><li>• Public amenities (all access)</li><li>• Children's playground facility</li></ul><ul style="list-style-type: none"><li>• Carpark</li><li>• Signage</li><li>• Stairs</li></ul></div>		
Distinct reserve features		
<u>Environment</u> <ul style="list-style-type: none"><li>• Protected vegetation: Cumberland Plain Woodland in the Sydney Basin Bioregion, Shale/Sandstone Transition Forest,</li></ul>		
<u>History</u> <ul style="list-style-type: none"><li>• The historic Ingleburn Weir was constructed in the late 1930s to provide a swimming area for the local community. The weir has a high heritage significance due to its sandstone structure and form. Works were conducted in 2009 to enhance fish passage in the river system and maintain the heritage value of the weir.</li></ul>		



Figure 19: Ingleburn Weir



Figure 20: Vegetation at Ingleburn Reserve



**Figure 21: Ingleburn Reserve audit map**

## 6.3 Keith Longhurst Reserve

Table 12: Keith Longhurst Reserve audit summary

Description		
Known locally as “The Basin”, this reserve provides a scenic example of a typical Georges River landscape, and offers striking views. The reserve’s main sites are “the basin” and the “old ford” which both provide access to the river.		
Location	Size (m <sup>2</sup> )	Tenure
Georges River Road, Kentlyn	872,793	Primarily Crown Land Small section of Council owned land
Accessibility		
Located approximately 10km (15-minute drive) from Campbelltown City Centre, this reserve is directly accessible via public transport.		
Formal marketing and promotion		
<ul style="list-style-type: none"> <li>• City of Campbelltown Parks and Recreation Website</li> <li>• Georges River Bushwalking Guide</li> <li>• Campbelltown Experience Guide</li> </ul>		
Formal bushwalking trails within reserve		
Trail	Length (m)	Classification
The Basin Walking Trail	1,054	Grade 3
Old Ford Road Walking Trail	1,391	Grade 3
Informal tracks within reserve		
1,310 metres of informal tracks audited		
Reserve infrastructure and facilities		
<ul style="list-style-type: none"> <li>• Informal carpark</li> <li>• Signage</li> <li>• Stairs</li> </ul>		
Distinct reserve features		
<u>Environment</u>	<ul style="list-style-type: none"> <li>• Protected vegetation: Small pocket of Coastal Upland Swamp in the Sydney Basin Bioregion</li> </ul>	
<u>History</u>	<ul style="list-style-type: none"> <li>• Ancient sites once inhabited by the local Dharawal people, including the renowned “Bull Cave”<sup>23</sup>.</li> <li>• Old Ford Road, one of the historical main roads leading across the river</li> <li>• In 2007 the reserve was renamed Keith Longhurst Reserve (formerly known as The Basin) in honour of the late Campbelltown Council ranger, who was a descendent of Kentlyn's 'first family' and did much to protect the Aboriginal history and natural heritage of the area<sup>24</sup></li> </ul>	

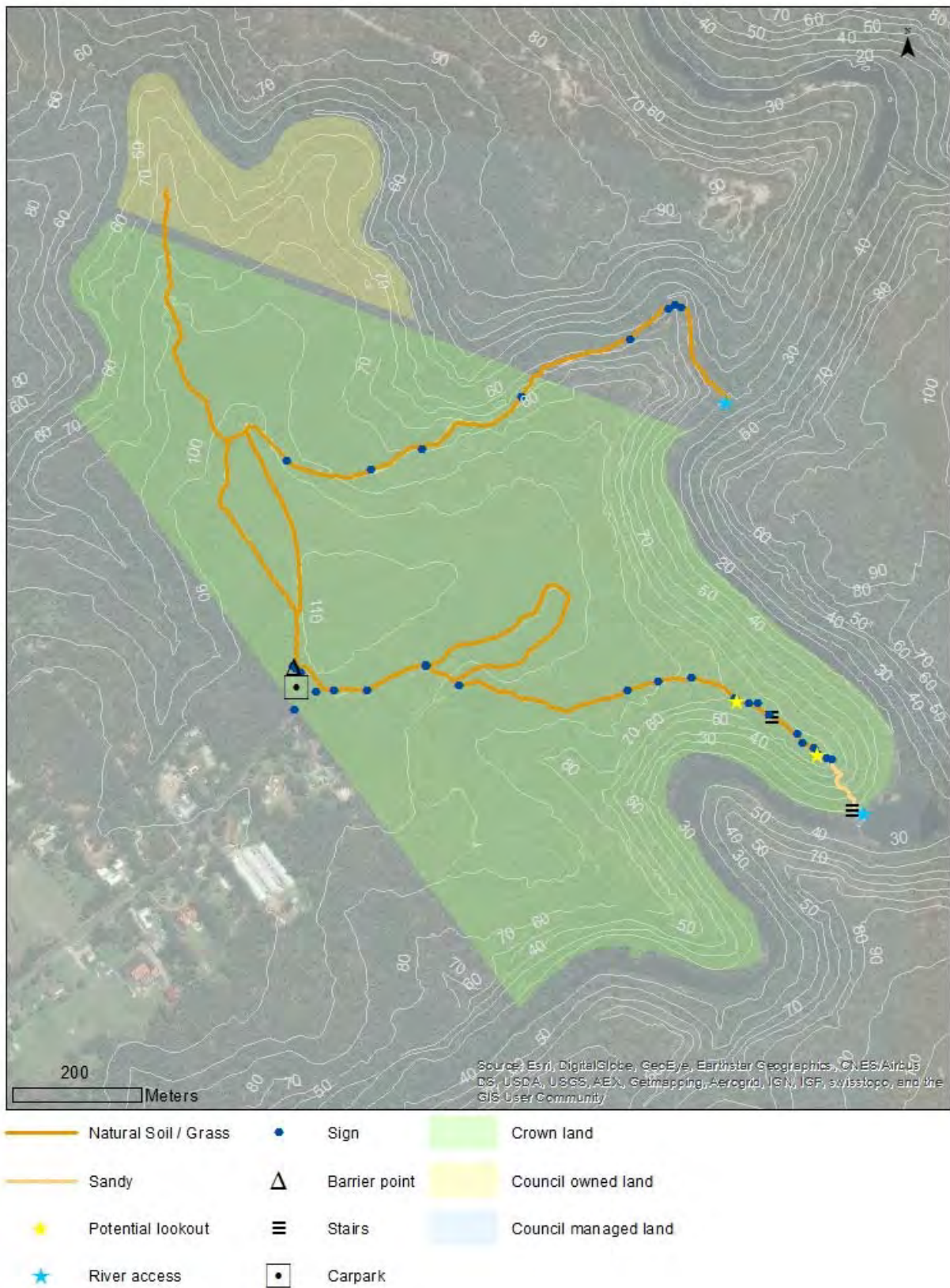


Figure 22: The Basin



Figure 23: Old Ford Road





**Figure 24: Keith Longhurst Reserve audit map**

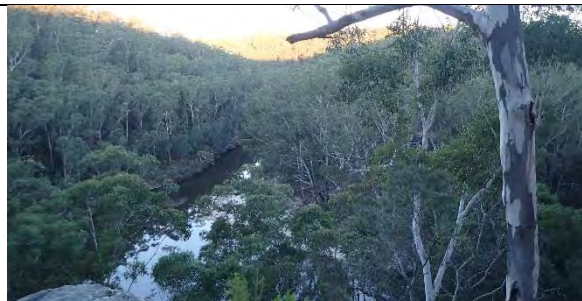
## 6.4 Frere's Crossing Reserve

**Table 13: Frere's Crossing audit summary**

Description		
This reserve is known for its historical value and the natural beauty. Providing access to the Georges River from the northern access point, the southern access point is not formalised and is a designated fire track leading to a stunning viewpoint over the Georges River and the reserve's vegetation.		
Location		Tenure
Frere's Road, Kentlyn		Crown land and unknown land tenure
Accessibility		
Located 9.4km (15-minute drive) from Campbelltown City Centre, this reserve is within 500m of public transport routes.		
Formal marketing and promotion		
<ul style="list-style-type: none"><li>City of Campbelltown Parks and Recreation Website</li><li>Georges River Bushwalking Guide</li><li>Campbelltown Experience Guide</li></ul>		
Formal bushwalking trails within reserve		
Trail	Length (m)	Classification
Frere's Reserve Walking Trail	1,002	Grade 3
Informal tracks within reserve		
2,748 metres of informal tracks audited		
Reserve infrastructure and facilities		
<ul style="list-style-type: none"><li>Entry signage</li></ul>	<ul style="list-style-type: none"><li>Stairs</li></ul>	
Distinct reserve features		
<u>History</u> <ul style="list-style-type: none"><li>The reserve is named after Georges Pierre Frere who migrated from France with his parents as a nine-year-old boy in 1875<sup>25</sup>. Georges owned a boat that he hooked to a tree by the river's edge. The boat was used to cross the river when the river was high, before the bridge was built at Frere's Crossing. The crossing formed part of the 1917 highway connecting Campbelltown and Newcastle<sup>26</sup>.</li></ul>		
<u>Environment</u> <ul style="list-style-type: none"><li>Native flora including gynea lilies, fuchsia heath and grevilleas, scribbly gums and grey gums</li></ul>		

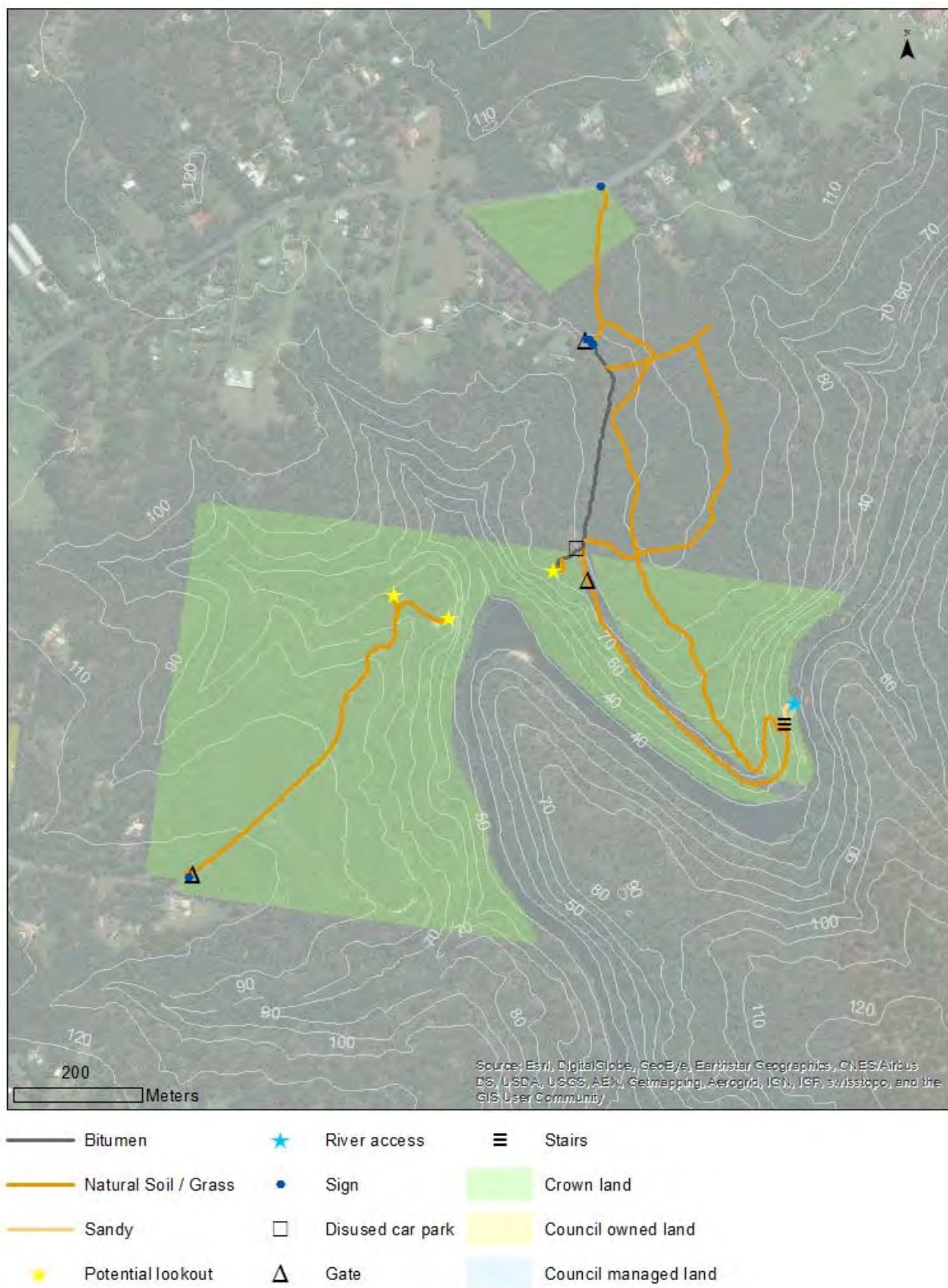


**Figure 25: Frere's Crossing**



**Figure 26: Views from southern potential lookout**





**Figure 27: Frere's Crossing Reserve audit map**

## 6.5 The Woolwash

**Table 14: The Woolwash audit summary**

Description	
This reserve provides access to the junction of the Georges River and O'Hares Creek and views of sandstone rock formations overlooking the site.	
Location	Tenure
Woolwash Place, Airds	Crown land and unknown land tenure
Accessibility	
Located 4.7km (10-minute drive) from Campbelltown City Centre, this reserve is within 500m of public transport routes.	
Formal marketing and promotion	
<ul style="list-style-type: none"> <li>City of Campbelltown Parks and Recreation Website</li> </ul>	
Formal bushwalking trails within reserve	
N/A	
Informal tracks within reserve	
873 metres of informal tracks audited	
Reserve infrastructure and facilities	
<ul style="list-style-type: none"> <li>Entry signage</li> </ul>	
Distinct reserve features	
<u>Environment</u>	<ul style="list-style-type: none"> <li>Protected vegetation: Shade/Sandstone Transition Forest</li> </ul>
<u>History</u>	<ul style="list-style-type: none"> <li>The Woolwash Reserve is one of Campbelltown's older bushland parks, and was used as a source of water, mainly for cattle. By the 1930's, it was a popular swimming and picnic area. It has often been claimed The Woolwash got its name because it was where the local wool clip was scoured to lighten it on its overland journey to the Sydney market. This is widely accepted, but has aroused some suspicion<sup>27</sup>.</li> <li>A number of caves can be found in this reserve and may be sites of Aboriginal cultural heritage significance.</li> </ul>



**Figure 28: Sandstone rock formations**



**Figure 29: Views of river/creek junction**





- |   |   |  |
|---|---|--|
|  Natural Soil / Grass  |  Sign            |  Crown land           |
|  Potential lookout     |  Disused carpark |  Council owned land   |
|  River/creek intersect |  Gate            |  Council managed land |

**Figure 30: The Woolwash audit map**



## 6.6 Noorumba Reserve

**Table 15: Noorumba Reserve audit table**

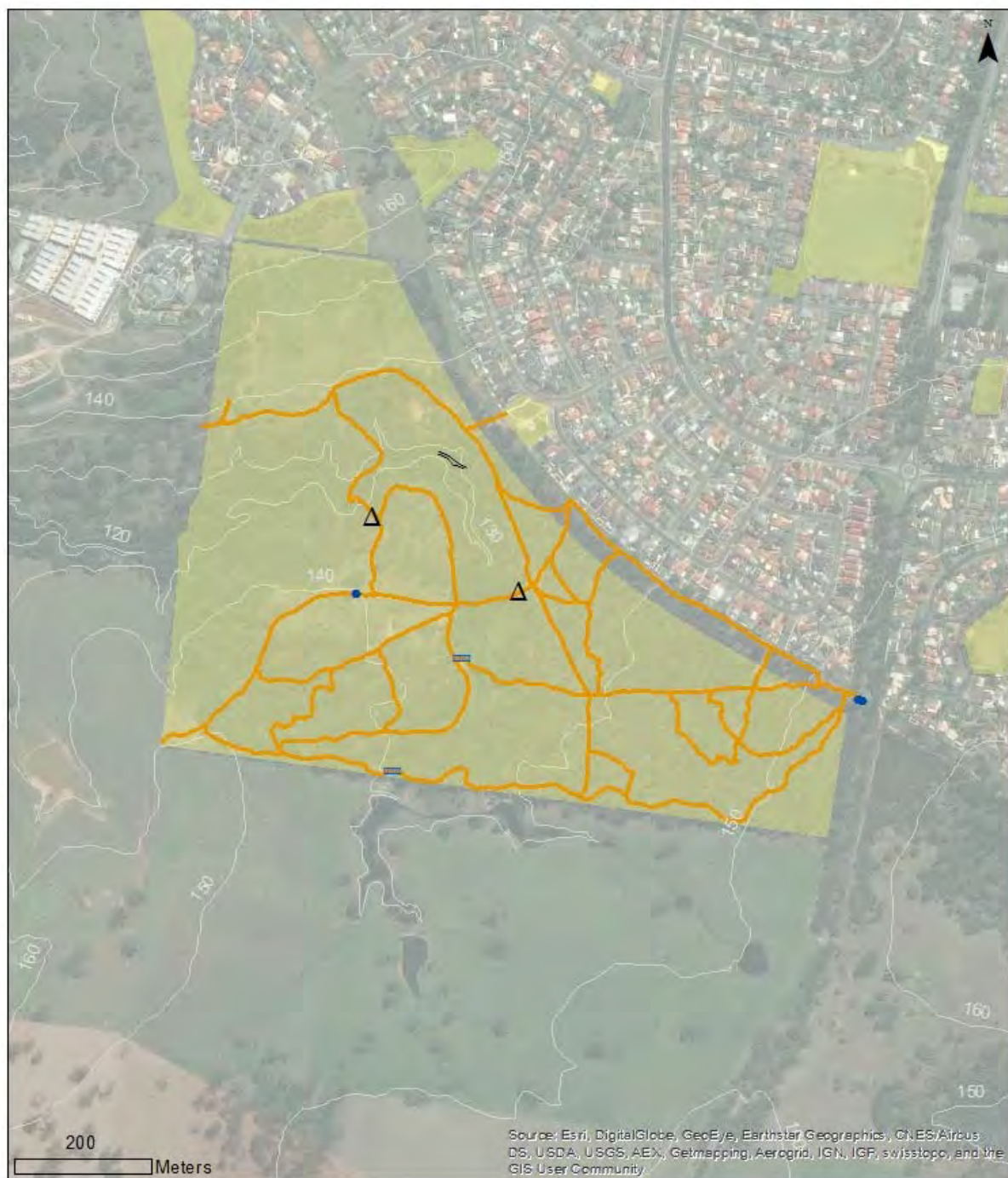
Description	
This reserve is currently subject to an upgrade of infrastructure and formalising as a biobanking site. With cultural and environmental value, this site features a wetland and offers bushwalking and birdwatching experiences.	
Location	Tenure
Appin Rd, Gilead (New entry via Gabun Gajaaja Reserve on Lysander Ave).	Council owned land
Accessibility	
Located approximately 6.8km (11-minute drive) from Campbelltown City Centre, this reserve is within 1km of public transport routes.	
Formal marketing and promotion	
<ul style="list-style-type: none"> <li>City of Campbelltown Parks and Recreation Website</li> </ul>	
Formal bushwalking trails within reserve	
N/A	
Informal tracks within reserve	
7,749 metres of informal tracks audited	
Reserve infrastructure and facilities	
<ul style="list-style-type: none"> <li>Signage (existing and planned)</li> <li>Carpark (planned)</li> <li>Boardwalk (planned)</li> </ul>	<ul style="list-style-type: none"> <li>Picnic facilities (planned)</li> <li>Children's playground facility (planned)</li> <li>Public amenities (planned)</li> </ul>
Distinct reserve features	
Environment	<ul style="list-style-type: none"> <li>Protected vegetation: Cumberland Plain Woodland in the Sydney Basin Bioregion</li> </ul>
History	<ul style="list-style-type: none"> <li>The reserve is an incredibly important Aboriginal site. Many artefacts unearthed here tell of ancient foraging and hunting in the area. The neighbouring Gajun Gajaaja Reserve (meaning 'very good children') gives more information about the local Aboriginal heritage<sup>28</sup>.</li> </ul>



**Figure 31: Noorumba Reserve Wetland**



**Figure 32: Vegetation and informal trail**



	Natural Soil / Grass		Gate		Crown land
	Sign		Steep gully		Council owned land
	Water crossing				Council managed land

**Figure 33: Noorumba Reserve audit map**



# 7. Trail Marketing & Promotion

## Georges River Bushwalking Guide

This guidebook showcases a simple map and details of bushwalking locations within Campbelltown City Council including the trails accessible from the northern end of Dharawal National Park.

An example of the information included in the George's River Bushwalking Guide is displayed below.



Figure 34: Georges River Bushwalking Guide

## Campbelltown Experience Guide (2016)

This Guide showcases Campbelltown's *Top Experiences*, with the primary feature being *Bushwalking in Campbelltown's Natural Areas*. The *Campbelltown Nature Discovery Trail* is marketed, promoting Dharawal National Park, Keith Longhurst Reserve and The Australian Botanic Garden Mount Annan as the premier locations.

*Bordered by scenic hills, nature reserves and waterways, Campbelltown's natural bushland surrounds offer a scenic escape just moments from the city centre, and are the perfect haven for nature lovers. Follow meandering trails through the serene beauty of the Australian bush to reveal scenic lookouts, secluded waterholes and stunning landscapes, where daily life seems to fade away.*

*Discover spectacular flowing streams, dramatic natural rock escarpments, as well as native flora and fauna, including our very own local koala colony. With breathtaking views and stunning horizons, the untamed splendour of the area will leave you in awe.*

An overview of the *Key Experiences of the Georges River* is included with information about Frere's Crossing, Ingleburn Reserve, Keith Longhurst Reserve and Simmo's Beach Reserve.

Other *Top Experiences* in the *Campbelltown Experience Guide* include adventure activities such as hot air ballooning, laser skirmish, paint balling, go karting, mountain biking, moto cross and horse riding.

The George's River Bushwalking Guide and the Campbelltown Experience Guide are both available to download online through the Macarthur website, or as printed booklets at the Campbelltown Visitor Information Centre.

**Macarthur website** (<http://www.macarthur.com.au/the-georges-river>)

This website provides details of bushwalking opportunities in the area with information relating to the location (embedded google map), distance and grade (easy, medium, hard) of bushwalking tracks as well as activities available (bushwalking, mountain biking). This website is referenced on other tourism websites including the official tourism site for *Destination NSW* ([www.visitnsw.com](http://www.visitnsw.com)).

The Macarthur website presents information on the following locations:

- Frere's Crossing
- Ingleburn Reserve
- Keith Longhurst Reserve
- Simmo's Beach Reserve

### City of Campbelltown– Parks & Recreation website

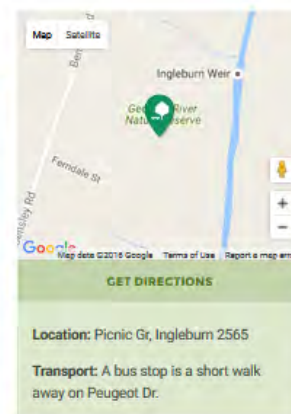
Council's Website provides details of all parks and reserves within the Campbelltown City Council boundary area, this includes brief information relating to bushwalking opportunities and an embedded google map to help users locate the reserve. The following twenty-one reserves are promoted as bushwalking locations:

- Frere's Crossing
- Ingleburn Reserve
- Keith Longhurst Reserve
- Noorumba Reserve
- Simmo's Beach
- Smiths Creek Reserve
- The Woolwash
- Abercrombie Reserve
- Canally Reserve
- Colong Reserve
- Creigan Reserve
- Cronulla Reserve
- Dharawal National Park
- Dorchester Reserve
- Fifth Avenue Reserve
- George's River Parkway Reserve
- Hagan Reserve
- Hasting Reserve
- Kanbyugal Reserve
- Pembroke Park
- Warrung Road Reserve

An example of Council's Parks and Recreation website information is displayed below.

## Ingleburn Reserve

The combination of neighbourhood park and stunning bushland makes Ingleburn Reserve a popular spot with families.



Park your car to find a spacious park surrounded by native forest. There are plenty of tables and barbecues for a great family meal. A new playground installed in 2015 has the latest equipment for big and small kids. The toilets have also been recently updated to provide more comfort and safety.

Follow a short trail to the gorge through endangered bushland. Don't forget to bring your camera to snap native wildlife along the way!

At the end of the trail you'll find the picturesque Georges River Gorge and Ingleburn Weir, a relic from the 1930s built to provide a swimming hole for locals. Relax and soak up the beauty of the bushland, or try your luck fishing from the Gorge.

### Things to do

- Bird Watching
- Canoeing
- Picnics
- Swimming
- Bushwalking
- Fishing
- Playground activities

### Key Features

- BBQ
- Parking
- Play equipment
- Seats
- Bushwalk trails
- Picnic tables / huts
- Public toilets

### Additional Features

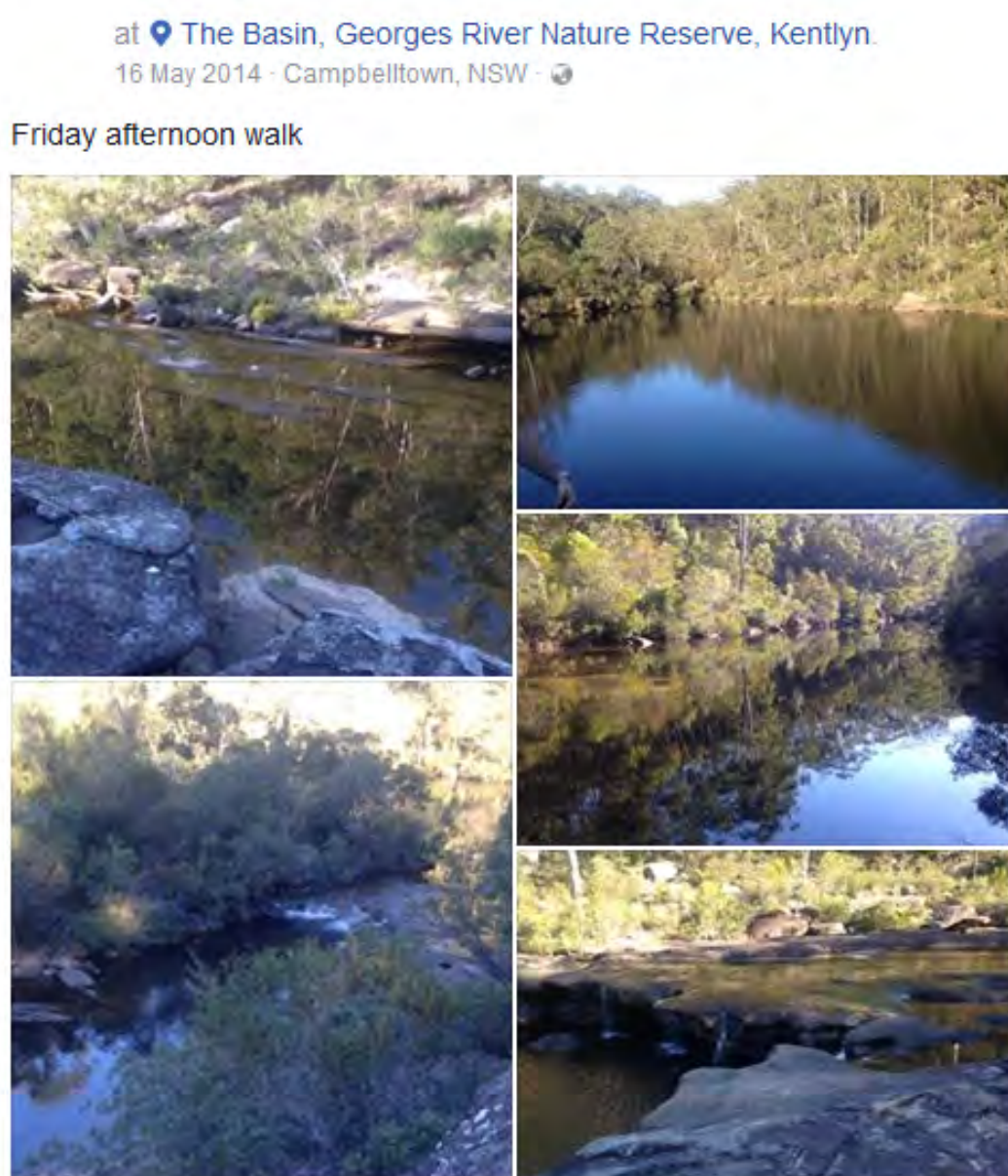
- Walking trail: 400 m. The path is made of sandstone and is a loose, rocky, unsealed surface.

Figure 35: City of Campbelltown Parks and Recreation website



## Media and social media

Campbelltown's trails and natural landscapes are frequently promoted through media and social media. For example, in 2016 Simmo's Beach Reserve featured as number seven out of ten in The Daily Telegraph's article *The Best Bushwalks in and Around Sydney*<sup>29</sup> and in 2013 the Campbelltown Macarthur Advertiser published an article entitled *Paddlers spot platypus in Georges River at Kentlyn*<sup>30</sup>. Through social media sites such as YouTube, Facebook and Instagram, visitors to the area share their experiences, promoting the location to others. Examples of social media promotion of bushwalking trails are provided below.



**Figure 36: Facebook check-in at The Basin**

Blogging sites provide another avenue for promotion of bushwalking trails. For example, trail users log their use of trails via sites such as *mapmywalk.com*<sup>31</sup> and report on the region's beauty through blog articles such as *Free Hidden Gems Around Campbelltown*<sup>32</sup>. Bushcare groups, such as Bushcare Noorumba<sup>33</sup>, also use blogging sites to update their progress, provide a forum for discussion and encourage community involvement.

## 8. Trail Provision Analysis

The following table provides an overview of the respective strengths, weaknesses, opportunities and areas of concern relating to the provision of trails across the City of Campbelltown.

**Table 16 Strengths, Weaknesses, Opportunities and Areas of Concern**

<b>Strengths</b>	<b>Opportunities</b>
Varied and diverse landscape setting	Trails offer low cost easily accessible recreation opportunities
Distinctive landscape features (e.g. bushland reserves, Georges River Nature Reserve)	Increasing participation in individualised sport and fitness activities (walking, running, mountain biking, horse riding); high participation rates of bushwalking/hiking
Proximity to State capital & transport links	Links to tourism businesses
Coordinated planning approach to the provision of open space, outdoor recreation and tourism	Showcasing of the region's landscape and cultural heritage (where appropriate)
Mountain bike presence (botanic gardens, Boronia Reserve & surrounds)	Links to adjoining areas (e.g. Western Sydney Parklands, Dharawal National Park)
Proximity to National Parks	Enhanced connectivity between open spaces across the city and links to the wider region
River-based recreation	Cross administration boundary cooperation
Large population base; easy access to reserves from residential areas	Development of strategic trail links (e.g. escarpment trail) and improved connectivity between existing trail networks
	Health benefits - improving the community's physical and psychological wellbeing
	Develop and encourage environmental, land care and friends of groups
	More diverse range of themed trail experiences (e.g. heritage, environmental, bird watching)
	Improved interpretive signage
	Trails offer low cost easily accessible recreation opportunities
	Showcasing of the region's landscape and cultural heritage (where appropriate)
<b>Weaknesses</b>	<b>Areas of Concern</b>
Fragmented trails network	Ongoing sustainability of existing and proposed trails
No Universal Access trails (Grade 1)	Inconsistent provision of key trail attributes on signage
Limited loop trail systems within existing trail network	Limited/dispersed availability of trail related information (online or printed brochures/booklets)
Limited trail support infrastructure (e.g. car parking, trail signage, toilets)	Limited availability of trail information at Visitor Information Centres
Varied range of signage styles and condition (often relating to the age of the sign)	Limited promotion and marketing of trails
Limited signage and mapping	Potential impacts upon environmental and cultural heritage values
No single source providing comprehensive information on trails within the region	
Varied and unknown land tenure	

## 9. Vision, Strategy & Action Plan

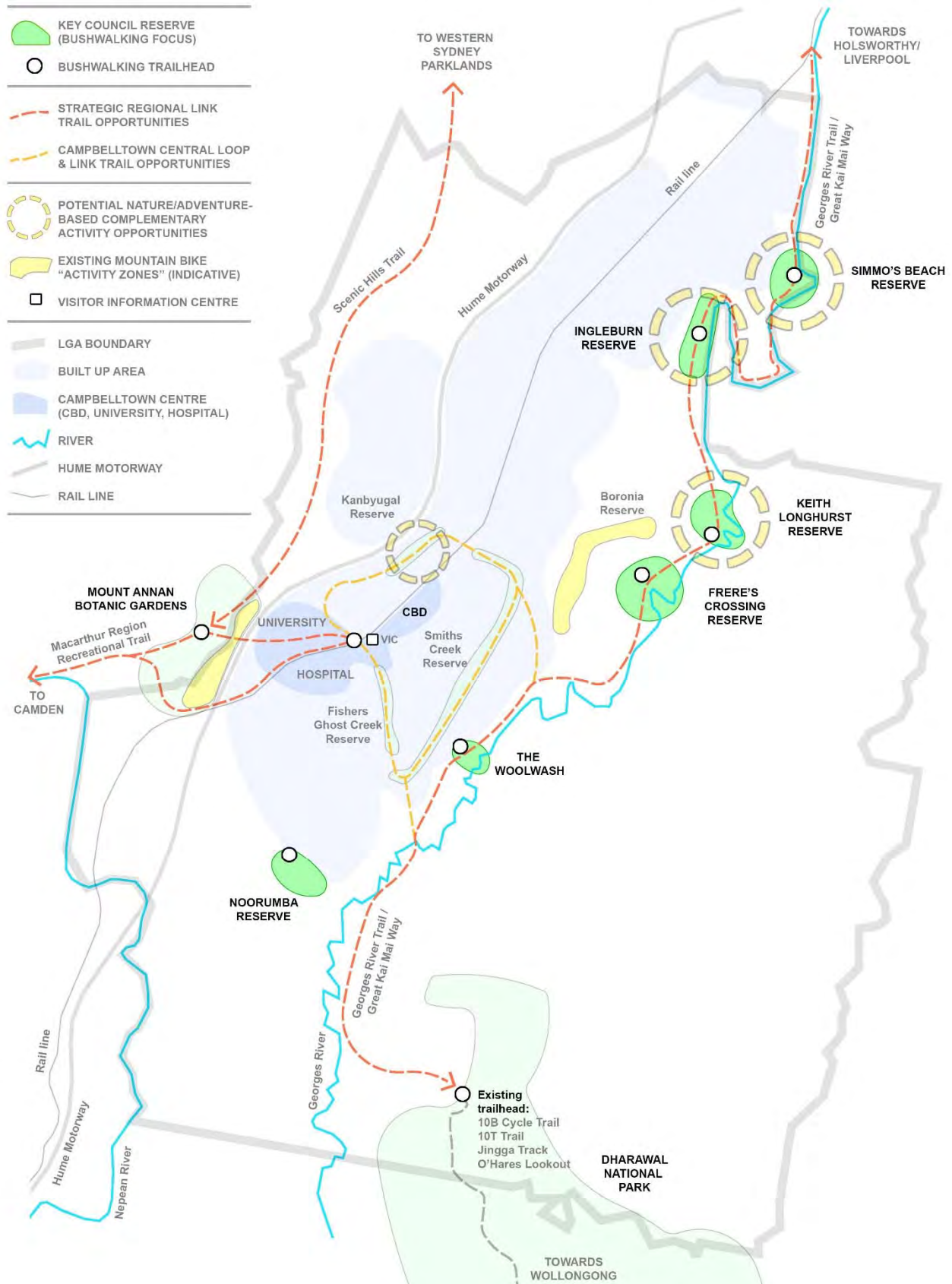


Figure 37: Trail Network Vision

## 9.1 Trail Network Vision

A diagrammatic trail network vision (refer previous page) articulates a future sustainable, accessible and integrated trails network for the City of Campbelltown, informed by the issues and opportunities that emerged during the background research and on-ground assessment processes undertaken, together with discussions with the project team (A3 copy of this map included at Section 11).

## 9.2 Strategic Outcomes

In order to deliver the Trail Network Vision the following Strategic Outcomes have been developed:

**Strategic Outcome A: Key Council Reserves (bushwalking focus)**

*Initial focus on upgrading the existing trails network at Key Council Reserves to offer a variety of sustainable and accessible bushwalking trail experiences and deliver health, environmental, cultural, economic and liveability benefits for the community and visitors to the region*

**Strategic Outcome B: Complementary Opportunities: Nature/Adventure-based Activities**

*Capitalise on the opportunities presented by a well-designed trails network, supported by complementary activities, to attract increased visitation to the region and encourage tourism and economic development*

**Strategic Outcome C: Strategic Regional Link & Loop Trail Network**

*Consider the City of Campbelltown's existing trail network in the context of the Macarthur and Western Sydney region's current and planned trail network and pursue trail development projects that complement and support the overall vision for the region*

**Strategic Outcome D: Promotion, Marketing & Participation**

*Encourage local community and visitor participation in recreational trail activities through effective promotion and marketing of the region's trails*

**Strategic Outcome E: Development, Management & Maintenance**

*Underpinning a sustainable, integrated and accessible trails network is a strategic and coordinated approach to trail development, management and maintenance*

## 9.3 Strategy & Action Plan

A series of aligned Strategies and specific Actions detail the recommended approach to address each of the identified Strategic Outcomes and fulfil the Trail Network Vision.

Each identified action is assigned a priority of High, Medium or Low; together with a suggested timeframe and the estimated resources required to fulfil the action.

### Trail Project Prioritisation

In order to effectively focus available funding (private, local, state, federal) to deliver a network of trails a phasing and prioritisation strategy is required.

Potential trail projects have been identified and broadly prioritised based on:

- **Need/Demand:** field observation, professional judgement and input from Council staff
- **Feasibility:** project size, corresponding broad resource estimates and those projects offering best opportunities for implementation



The following evaluation criteria were also broadly utilised to refine the prioritisation process:

- Proximity to existing trails networks
- Gaps in the current trail network
- Connectivity between key destinations
- Proximity to significant visitor/tourist attractions
- Relative ease of project implementation (resources required, environmental issues, land tenure, complexity)
- Overall benefit to the region and community (social, environmental, economic)

The Strategy & Action Plan recommends that the next steps for each of the identified projects include some level of community consultation. Levels of interest in a project shown from the community should inform the prioritisation process. 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 requiring substantial funding, and the address of multiple significant constraints, whilst generating limited public interest.

### Timeframes

The timeframe identified for completion of each action is an indicative timeframe only, and should be reviewed periodically. Key projects requiring initial feasibility studies, design development and requiring cross agency collaboration will likely take multiple years before the project is delivered on the ground. Some identified projects are reliant on the successful completion of other trail projects, securing of land or other major infrastructure projects. It needs to be recognised that it is not feasible to deliver all the identified projects at the same time.

**Table 17: Timeframes**

Term	Year Range
Ongoing	2017 onwards
Short	2017 – 2019
Medium	2019 – 2021
Longer	2021 onwards

### Estimated Resources

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

**Table 18: Estimated Resources**

Level	Resource Range
Lowest (LW)	0 - \$5,000
Low (L)	\$5,000 - \$10,000
Low - Medium (L/M)	\$10,000 - \$20,000
Medium (M)	\$20,000 - \$50,000
Medium-High (M/H)	\$50,000 - \$100,000
High (H)	\$100,000 - \$200,000
Very High (VH)	\$200,000 - \$500,000
Major Project (MP)	\$500,000 +

### Partners

There are various complexities surrounding trail planning and development, including multiple land tenure, cross government boundary/regional projects involving multiple government departments, and the diverse, and sometimes conflicting, aspirations of community stakeholders (e.g. environmental groups, trail user groups). Recognising this, Council will need to identify and work with a variety of partners, noting that some of the identified actions may not be deliverable without the support of these partners.



## Directions for Key Council reserves (Strategic Outcome A)

Key Council reserves for this review have been identified as:

- Simmo's Beach Reserve
- Ingleburn Reserve
- Keith Longhurst Reserve
- Frere's Crossing Reserve
- The Woolwash
- Noorumba Reserve

Each of the key reserves have been profiled below, with written and visual details of the recommended strategic approach to enhance the trail experiences available. Current and future potential opportunities for each reserve have been identified, as well as other access paths. These can be defined by the following:

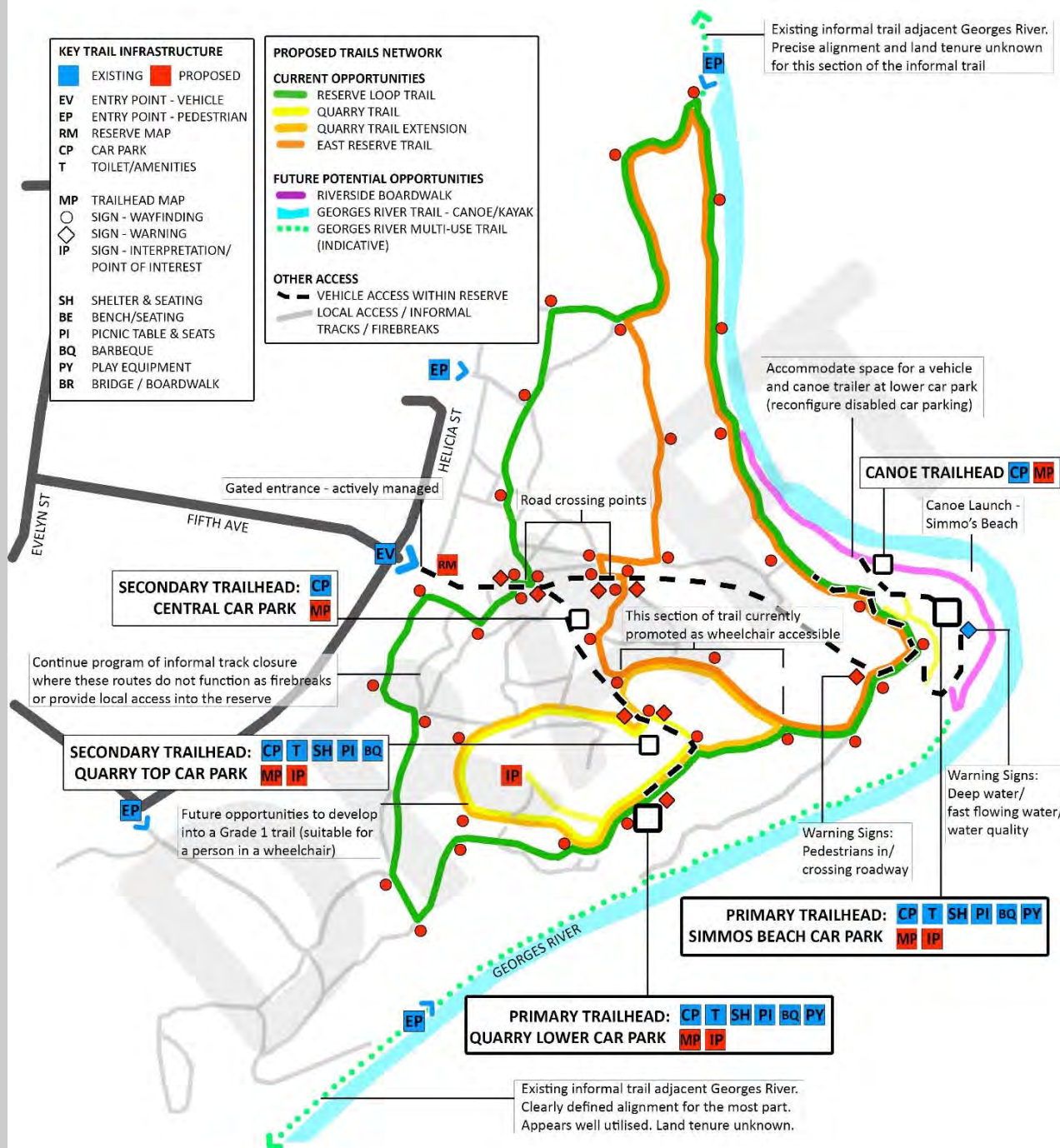
- **Current opportunities:** Trails which are located on Council managed land with an existing defined route. These trails present opportunities for formalisation (e.g. trail name, clearly defined route), improved trail infrastructure (e.g. signage, lookouts) and eventual promotion/marketing.
- **Future potential opportunities:** Trail concepts which are not located on Council managed land and/or require formalisation defined route. These trails will require further planning and design processes to implement as authorised trails which can be promoted and marketed.
- **Other access:** Paths, roads or tracks for which the primary function is not recreational use. Where these routes do not provide another necessary function (e.g. fire break, vehicular access, local reserve access) the track may require decommissioning.

## Strategic Outcome A: Key Council Reserves (bushwalking focus)

Table 19: Strategy A1 Simmo's Beach Reserve

### Simmo's Beach Reserve

**Strategy A1:** Upgrade and enhance the existing trail network at Simmo's Beach Reserve, including new support infrastructure



Refer Section 11 for an A3 copy of the above map.

## Simmo's Beach Reserve

Key Features/Attractions	Key Current Issues
Simmo's Beach Natural environment – high environmental values Georges River / river access Quarry Cultural heritage – Indigenous Existing amenities (playground, shelter, toilets)	Limited signage / poor wayfinding Unauthorised trail bike use Localised rubbish dumping (north west areas) Amenities for the disabled / less mobile are limited (missed opportunity) Extensive network of informal/unauthorised trails Limited passive surveillance

### Overview & Rationale:

There is one formally recognised and promoted walk trail within the reserve (Simmo's Beach Walking Trail), alongside an extensive network of firebreaks and informal/unauthorised trails. There is a relatively high level of support infrastructure across the reserve (e.g. car parks, toilets, shelters/seating, play equipment) however there is no mapping or wayfinding signage, and limited interpretation material. Whilst members of the local community may be able to navigate their way around the reserve, and are aware of all the key features and attractions of the reserve, a visitor to the area would likely not venture too far from the main car park areas, the beach or the quarry. There is also relatively limited information available in relation to this reserve either online or at the Visitor Information Centre. The current Georges River Bushwalking Guide does promote the walk trail, however, without wayfinding signage on the ground it might be difficult to identify the precise alignment for visitors to the area. There are also other trail experiences available at this reserve, but not currently promoted.

There currently exists the potential to establish 4 distinct loop trails, offering a variety of experiences, utilising the existing network of trails and firebreaks within the reserve (on Council managed land). Additional support infrastructure is proposed, including trailhead maps, wayfinding and warning signage, and additional interpretation signage (refer map). It is suggested that additional signage is installed to warn vehicle traffic using the access roads/car park areas of the presence of pedestrian either crossing a roadway, or utilising short sections of a roadway.

Future potential opportunities relate to the development of a riverside boardwalk, and the conversion of the existing trails around the quarry (concrete trail tread) into a Grade 1 Universal Access trail, suitable for wheelchair access. Both projects will require further detailed investigations to confirm viability and stakeholder support.

In terms of more strategic trail opportunities, there is the potential to develop a Georges River Canoe/Kayak Trail and on-land Multi-Use Trail (these are considered separately, refer Strategic Outcome C Strategic Loop and Link Trails).

The current program of informal/unauthorised track closures should continue to restrict access, minimise disturbance and isolate/protect pockets of native vegetation wherever feasible.

### Trails – Current Opportunities

Trail Identifier	User Type	Classification	Distance	Focus/theme
Reserve Loop Trail	Walk	Grade 3	3.3km	All reserve features
Quarry Trail	Walk	Grade 2	1km	Quarry Natural environment
Quarry Trail Extension	Walk	Grade 2	1.2km	Quarry Natural environment
East Reserve Trail	Walk	Grade 3	2.4km	Natural environment

## Simmo's Beach Reserve

### Trails – Future Potential Opportunities

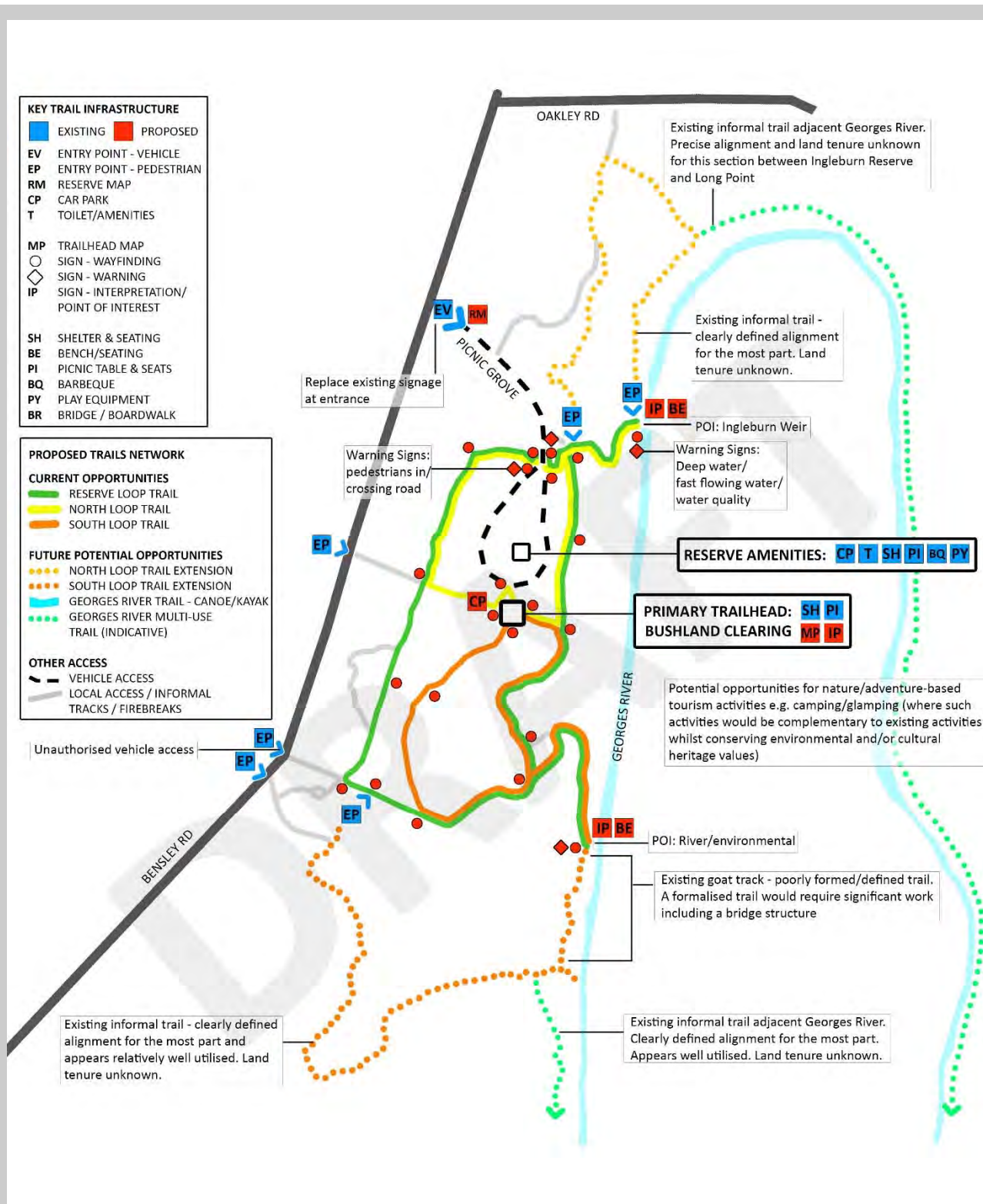
Trail Identifier	User Type	Anticipated Classification	Anticipated Distance	Focus/theme	
Riverside Boardwalk	Walk	Grade 1	1.6km	River access / Simmo's Beach	
Georges River Trail – Canoe/Kayak	Canoe/ Kayak	Grade 1-3	50km	River Natural environment	
Georges River Multi-Use Trail	Walk Cycle/Mtb	Grade 3-4 Easy - More Difficult	35-40km	River Natural environment	
Universal Access Trail (Quarry Trail Extension)	Walk Wheelchair	Grade 1	1.2km	Quarry Natural environment	
Actions				Priority / Timeframe	Estimated Resources
A1.1 Undertake consultation with key stakeholders (e.g local community, Indigenous community, friends of groups, environmental care groups, trail user groups) to confirm approach and, if appropriate, assign names to each of the trails, discuss interpretation material etc				High / 2017	LW
A1.2 Prepare content and finalise graphic design of all signage				High / 2017	L/M
A1.3 Manufacture & install reserve map (1no.), warning signage (8no.), trailhead signs (4no.), interpretation signage (4no.) & waymarkers (39no.)				High / 2017/18	M
A1.4 Formalise road crossing points along access road (for the Reserve Loop Trail and East Reserve Trail) by localised clearing of roadside vegetation and repositioning of rocks/rails where necessary				High / 2017/18	L
A1.5 Reconfigure disabled car parking at lower Simmo's Beach car park to accommodate vehicle and canoe trailer access to the beach				High / 2017/18	LW
A1.6 Continue program of informal / unauthorised / unsustainable track closures through re-vegetation and brushing (laying of cut branches / vegetation across trails to deter/block use)				High / Ongoing	L/M
A1.7 Continue program of rubbish removal across the Reserve				High / Ongoing	-
A1.8 Assess the feasibility of modifying the Quarry Trail and Quarry Trail Extension trail alignments into Grade 1 walk trails, suitable for wheelchair access, including assessment of potential impacts upon environmental and cultural heritage values and detail design processes				Medium / 2018	M/H
A1.9 Investigate the feasibility of delivering a boardwalk (Grade 1) adjacent to the river, including assessment of potential impacts upon environmental and cultural heritage values and detail design processes				Medium - Low / 2018/19	VH
A1.10 Undertake phased replacement of amenity blocks on the Reserve, including consideration of decommissioning one block at the Quarry				Low / 2020/21	H - VH
Refer to Strategic Outcome C Strategic Link & Loop Trail Concepts for actions relating to the Georges River Canoe/Kayak Trail and Multi-Use Trail (future potential opportunities)					



**Table 20: Strategy A2 Ingleburn Reserve**

## Ingleburn Reserve

**Strategy A2:** Upgrade and enhance the existing trail network at Ingleburn Reserve, including new support infrastructure



Refer Section 11 for an A3 copy of the above map.



## Ingleburn Reserve

### Key Features/Attractions

Natural environment – high environmental values  
 Cumberland Plain Woodland  
 Shale/sandstone transition forest  
 Georges River / river access  
 Ingleburn Weir  
 Cultural heritage – Indigenous / European  
 Existing amenities (playground, shelters, BBQ, toilet)

### Key Current Issues

Limited signage / poor wayfinding  
 Localised rubbish dumping (south end)  
 Unauthorised vehicle access (south end)  
 Limited passive surveillance

### Overview & Rationale:

There is one formally recognised and promoted walk trail within the reserve (Ingleburn Reserve Walking Trail), alongside an extensive network of firebreaks and informal/unauthorised trails. There is a relatively high level of support infrastructure across the reserve (e.g. car park, toilet, shelters/seating, play equipment) however there is no mapping or wayfinding signage, and limited interpretation material. Whilst members of the local community may be able to navigate their way around the reserve, and are aware of all the key features and attractions of the reserve, a visitor to the area would likely not venture too far from the main car park area, and amenity grass area. There is also relatively limited information available in relation to this reserve either online or at the Visitor Information Centre. The current Georges River Bushwalking Guide does promote the walk trail, however, there are other trail experiences available at this reserve, but not currently promoted.

There currently exists the potential to establish 3 distinct loop trails, offering a variety of experiences, utilising the existing network of trails and firebreaks within the reserve (on Council managed land). Additional support infrastructure is proposed, including trailhead maps, wayfinding and warning signage, and additional interpretation signage (refer map). It is suggested that additional signage is installed to warn vehicle traffic using the access roads/car park areas of the presence of pedestrians either crossing a roadway, or utilising sections of a roadway/car park.

Future potential opportunities relate to the extension of loop trails to the north and south of the reserve. Land tenure at these locations has not been established and these proposals will need to be considered in further detail to confirm viability and stakeholder support.

In terms of more strategic trail opportunities, there is the potential to develop a Georges River Canoe/Kayak Trail and on-land Multi-Use Trail (these are considered separately, refer Strategic Outcome C Strategic Loop and Link Trails).

This reserve may offer the potential for additional nature/adventure-based activities (these are considered separately, refer Strategic Outcome B Complementary Opportunities: Nature/Adventure-based Activities).

### Trails – Current Opportunities

Trail Identifier	User Type	Classification	Distance	Focus/theme
Reserve Loop Trail	Walk	Grade 3	2.2km	All reserve features
North Loop Trail	Walk	Grade 3	1.4km	Natural environment Ingleburn Weir Georges River
South Loop Trail	Walk	Grade 3	1.3km	Natural environment Georges River

### Trails – Future Potential Opportunities

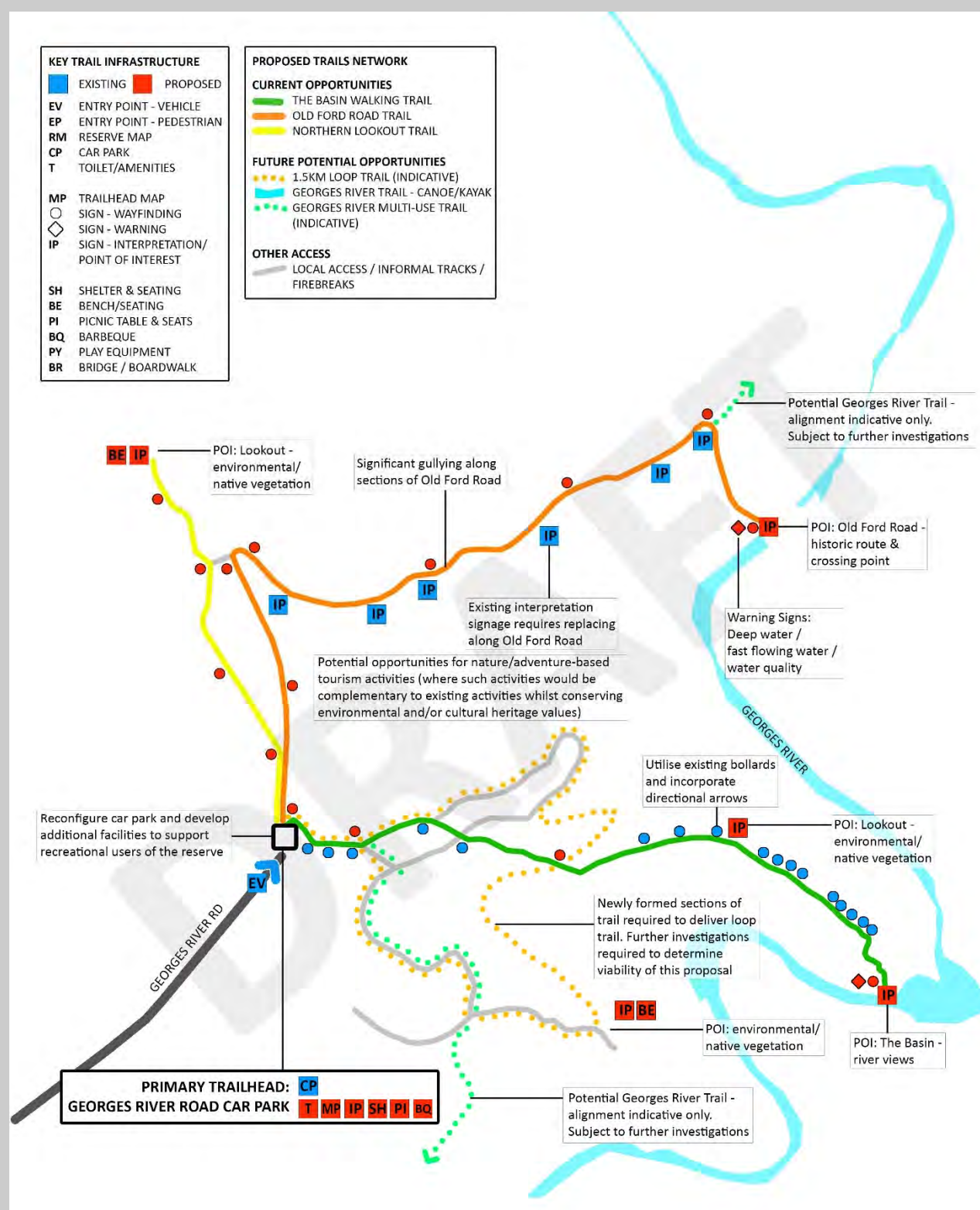
Trail Identifier	User Type	Anticipated Classification	Anticipated Distance	Focus/theme
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Ingleburn Reserve				
North Loop Extension Trail	Walk	Grade 3	1.1km	As North Loop Trail
South Loop Extension Trail	Walk	Grade 3	1.4km	As South Loop Trail
Georges River Trail – Canoe/Kayak	Canoe/Kayak	Grade 1-3	50km	River Natural environment
Georges River Multi-Use Trail	Walk Cycle/Mtb	Grade 3-4 Easy (green) - More Difficult (blue)	35-40km	River Natural environment
Actions			Priority / Timeframe	Estimated Resources
<b>A2.1</b> Undertake consultation with key stakeholders (e.g local community, Indigenous community, friends of groups, environmental care groups, trail user groups) to confirm approach and, if appropriate, assign names to each of the trails, discuss interpretation material etc			High / 2017	LW
<b>A2.2</b> Prepare content and finalise graphic design of all signage			High / 2017	L/M
<b>A2.3</b> Manufacture & install reserve map (1no.), warning signage (4no.), trailhead signs (1no.), interpretation signage (3no.) & waymarkers (22no.)			High / 2017/18	M
<b>A2.4</b> Reinstate overflow car park to the south of the access road (with localised repairs to existing surface as necessary)			High / 2017/18	L
<b>A2.5</b> Formalise road crossing point access road (for the Reserve Loop Trail and North Loop Trail) by localised clearing of roadside vegetation and repositioning of rocks/rails where necessary			High / 2017/18	L
<b>A2.6</b> Continue program of informal / unauthorised / unsustainable track closures through re-vegetation and brushing (laying of cut branches / vegetation across trails to deter/block use)			High / Ongoing	L/M
<b>A2.7</b> Continue program of rubbish removal across the Reserve			High / Ongoing	-
<b>A2.8</b> Assess the feasibility of extending loop trails to the north and south of the Reserve, including the address of land tenure issues, assessment of potential impacts upon environmental and cultural heritage values, and detail design processes			Low / 2021+	VH
Refer to Strategic Outcome B Complementary Opportunities: Nature/Adventure-based Tourism for actions relating to other potential opportunities for complementary activities				
Refer to Strategic Outcome C Strategic Link & Loop Trail Concepts for actions relating to the Georges River Canoe/Kayak Trail and Multi-Use Trail (future potential opportunities)				

**Table 21: Strategy A3 Keith Longhurst Reserve**

## Keith Longhurst Reserve

**Strategy A3:** Upgrade and enhance the existing trail network at Keith Longhurst Reserve, including new support infrastructure



Refer Section 11 for an A3 copy of the above map.

## Keith Longhurst Reserve

Key Features/Attractions	Key Current Issues
Natural environment Georges River / river access The Basin Old Ford Road Cultural heritage – Indigenous / European	Limited signage / poor wayfinding Existing trail infrastructure vandalised – graffiti Old Ford Road – significant gullying & interpretation signage requires replacement Limited passive surveillance Lack of existing amenities/facilities Inefficient car park layout

### Overview & Rationale:

There are two formally recognised and promoted walk/cycle trails within the reserve (The Basin Walking Trail and Old Ford Road Trail), alongside a network of firebreaks. There exists some support infrastructure at the reserve, including car parking, wayfinding posts and interpretation signage, however most of this infrastructure requires updating/replacing.

Enhanced mapping, wayfinding and interpretation signage is required to enable anyone who is not familiar with the reserve to navigate around the reserve, and highlight the key features and attractions of the reserve.

The current Georges River Bushwalking Guide promotes the two trails, although promoting Old Ford Road as a cycle trail should be reviewed as the return journey (uphill) would be a challenge for the average recreational cyclists, and the experience probably wouldn't appeal to many mountain bikers.

There currently exists the potential to improve signage on the ground for the two existing trails (including refreshing waymarking and interpretation signage), plus establishing a third trail (with an environmental focus) that utilises an existing informal trail alignment, heading north-west, and terminating at a rocky outcrop/lookout.

The car park should be reconfigured to optimise use of space and provide additional facilities to serve all users of the reserve, with an adjoining space offering toilets, shelters/picnic tables and BBQs.

In terms of future potential opportunities, developing a relatively short loop trail on flatter terrain would provide an alternative to the out-and-back experiences of the other trails and provide a less challenging trail experience that avoids relatively steep ascents/descents. This proposal would require the development of new sections of trail, including vegetation clearance, and will need to be considered in further detail to confirm viability and stakeholder support.

In terms of more strategic trail opportunities, there is the potential to develop a Georges River Canoe/Kayak Trail and on-land Multi-Use Trail (these are considered separately, refer Strategic Outcome C Strategic Loop and Link Trails).

This reserve may offer the potential for additional nature/adventure-based activities (these are considered separately, refer Strategic Outcome B Complementary Opportunities: Nature/Adventure-based Activities).

### Trails – Current Opportunities

Trail Identifier	User Type	Classification	Distance	Focus/theme
The Basin Walking Trail	Walk	Grade 3	2.2km	Natural environment The Basin Georges River
Old Ford Road Trail	Walk Cycle/Mtb	Grade 3 Easy (green) - More Difficult	2.8km	Natural environment Georges River Cultural heritage - European

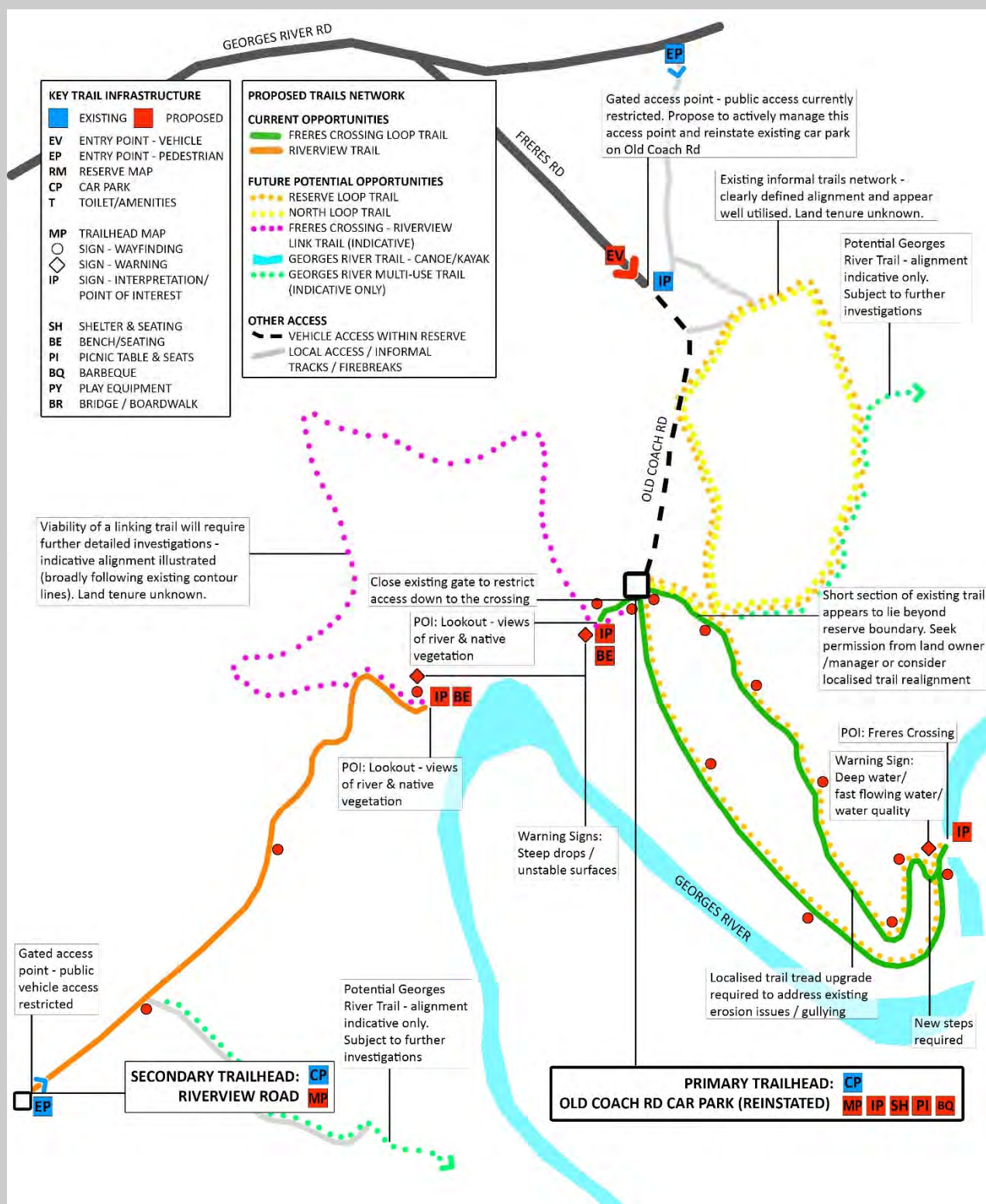
Keith Longhurst Reserve				
		(blue)		
Northern Lookout Trail	Walk	Grade 2	1.8km	Natural environment Georges River
Trails – Future Potential Opportunities				
Trail Identifier	User Type	Anticipated Classification	Anticipated Distance	Focus/theme
1.5km Loop Trail	Walk	Grade 2	1.5km	Recreational walker No steep ascents / descents Natural environment
Georges River Trail – Canoe/Kayak	Canoe/ Kayak	Grade 1-3	50km	River Natural environment
Georges River Multi-Use Trail	Walk Cycle/Mtb	Grade 3-4 Easy (green) - More Difficult (blue)	35-40km	River Natural environment
Actions			Priority / Timeframe	Estimated Resources
<b>A3.1</b> Undertake consultation with key stakeholders (e.g local community, Indigenous community, friends of groups, environmental care groups, trail user groups) to confirm approach and, if appropriate, assign names to each of the trails, discuss interpretation material etc			High / 2017-19	LW
<b>A3.2</b> Prepare content and finalise graphic design of all signage			Medium / 2019-21	L/M
<b>A3.3</b> Manufacture & install warning signage (2no.), trailhead signs (1no.), interpretation signage (6no.), new waymarkers (26no.) & directional arrows on existing posts (17no)			Medium / 2019-21	M
<b>A3.4</b> Install shelters with picnic table/bench seating (2no.), bench seating (2no.), BBQs (2no.)			Medium / 2019-21	M/H
<b>A3.5</b> Reconfigure car parking at entrance / new trailhead to formalise the layout and optimise use of space			Medium / 2019-21	VH
<b>A3.6</b> Investigate the feasibility of developing a 1.5km loop trail broadly following contour lines to link up existing firebreaks, giving consideration to potential impacts upon environmental and cultural heritage values and detail design processes			Low / 2021+	H
<b>A3.7</b> Review/re-write existing interpretation material associated with Old Ford Road, and replace existing damaged signage (allowance for 4no. new signs)			Medium / 2019-21	M
<b>A3.8</b> Localised 'trail tread' upgrades on Old Ford Rd			High / 2017	M
Refer to Strategic Outcome B Complementary Opportunities: Nature/Adventure-based Tourism for actions relating to other potential opportunities for complementary activities				
Refer to Strategic Outcome C Strategic Link & Loop Trail Concepts for actions relating to the Georges River Canoe/Kayak Trail and Multi-Use Trail (future potential opportunities)				



**Table 22: Strategy A4 Frere's Crossing Reserve**

## Frere's Crossing Reserve

**Strategy A4:** Upgrade and enhance the existing trail network at Frere's Crossing Reserve, including new support infrastructure



Refer Section 11 for an A3 copy of the above map.

## Frere's Crossing Reserve

Key Features/Attractions	Key Current Issues
Natural environment Georges River / river access Frere's Crossing Cultural heritage – European Viewpoint (accessed from Riverview Road)	Lack of existing amenities/facilities Lack of appropriate access point Limited signage / poor wayfinding Unauthorised trail bike use Limited passive surveillance Sections of existing informal trail in poor condition

### Overview & Rationale:

There is one formally recognised and promoted walk trail within the reserve (Frere's Crossing Walking Trail), alongside a network of firebreaks and informal/unauthorised trails. There is limited support infrastructure within the reserve, although there is a basic map and interpretation sign at the current entrance to the reserve. There is also a former car park that is no longer accessible due to a locked management gate. Car parking is limited to parking on the road, and access into the reserve is currently restricted with no formal pedestrian access provided to the side of the locked management gate. There is no mapping or wayfinding signage, and limited interpretation material. There is also relatively limited information available in relation to this reserve either online or at the Visitor Information Centre. The current Georges River Bushwalking Guide does promote the walk trail, however, there are other trail experiences available at this reserve, but not currently promoted.

Accessed separately via Riverview Road there is another trail, utilising a firebreak, and terminating at an impressive lookout point, however this is currently not promoted anywhere, and is relatively isolated from other trails in the reserve. Car parking at the end of Riverview Road is also limited.

There currently exists the potential to develop a loop trail, expanding on the currently promoted trail, and promote the Riverview Road trail, both utilising the existing network of trails and firebreaks (on Council managed land). There is a short section of existing informal trail that lies beyond the reserve boundary and provides the link back to the trailhead; either permission will need to be sought from the relevant land manager to utilise this section of trail or an alternative alignment found that remains on Council managed land.

Additional support infrastructure is proposed, including trailhead maps, wayfinding and warning signage, and additional interpretation signage (refer map). It is also proposed that the management gate on Freres Road be actively managed (opened during daylight hours) and the former car park on Old Coach Road reinstated (forming a new trailhead for the reserve).

Future potential opportunities relate to the extension of the loop trail to the north of the reserve, utilising existing informal trail alignments. A longer-term proposal would involve linking the Freres Crossing Walking Trail with the Riverview Road trail, via a new section of trail that would ideally broadly follow existing contours. Land tenure at these locations has not been established and these proposals will need to be considered in further detail to confirm viability and stakeholder support.

In terms of more strategic trail opportunities, there is the potential to develop a Georges River Canoe/Kayak Trail and on-land Multi-Use Trail (these are considered separately, refer Strategic Outcome C Strategic Loop and Link Trails).

This reserve may offer the potential for additional nature/adventure-based activities (these are considered separately, refer Strategic Outcome B Complementary Opportunities: Nature/Adventure-based Activities).

### Trails – Current Opportunities

Trail Identifier	User Type	Classification	Distance	Focus/theme
Frere's Crossing Loop Trail	Walk	Grade 3	1.3km	Natural environment Georges River Cultural heritage - European

Frere's Crossing Reserve				
Riverview Trail	Walk	Grade 3	1.4km	Natural environment Georges River Viewpoint
Trails – Future Potential Opportunities				
Trail Identifier	User Type	Anticipated Classification	Anticipated Distance	Focus/theme
Reserve Loop Trail	Walk	Grade 3	2.2km	All Reserve features
North Loop Trail	Walk	Grade 2	0.9km	Short walk on relatively flat terrain Natural environment
Frere's Crossing – Riverview Link Trail	Walk	Grade 3	5.0km	Strategic link to viewpoint Natural environment
Georges River Trail – Canoe/Kayak	Canoe/ Kayak	Grade 1-3	50km	River Natural environment
Georges River Multi-Use Trail	Walk Cycle/Mtb	Grade 3-4 Easy (green) - More Difficult (blue)	35-40km	River Natural environment
Actions			Priority / Timeframe	Estimated Resources
<b>A4.1</b> Undertake consultation with key stakeholders (e.g local community, Indigenous community, friends of groups, environmental care groups, trail user groups) to confirm approach and, if appropriate, assign names to each of the trails, discuss interpretation material etc			Medium / 2019-21	LW
<b>A4.2</b> Prepare content and finalise graphic design of all signage			Medium / 2019-21	L/M
<b>A4.3</b> Manufacture & install warning signage (3no.), trailhead signs (2no.), interpretation signage (4no.) & waymarkers (14no.)			Medium / 2019-21	M
<b>A4.4</b> Install shelters with picnic table/bench seating (2no.), bench seating (2no.), BBQs (2no.)			Medium / 2019-21	M
<b>A4.5</b> Reinstate Old Coach Rd car park (with localised repairs to existing surface as necessary)			Medium / 2019-21	L/M
<b>A4.6</b> Actively manage Reserve entry gate (and lock gate to immediate south of car park to restrict access down to the river)			Medium / 2019-21	-
<b>A4.7</b> Localised 'trail tread' upgrades and new steps on Reserve Loop Trail			Medium / 2019-21	L/M
<b>A4.8</b> Address land tenure issues with a view to establishing additional trail options utilising existing informal trails to the north and east of the car park			Longer 2021+	L
<b>A4.9</b> Assess the feasibility of linking Frere's Crossing with Riverview Trail via an off-road trail, including addressing land tenure issues, assessment of potential impacts upon environmental and cultural heritage values and detail design processes			Longer 2021+	M - VH

## Frere's Crossing Reserve

**A4.10** Address land tenure issues relating to a short section (approximately 100m) of the Frere's Crossing Loop Trail (to the immediate east of the car park). Seek agreement with land owner/manager to formalise this section of trail or develop an alternative route utilising land entirely within the Reserve

Medium /  
2019-21

L

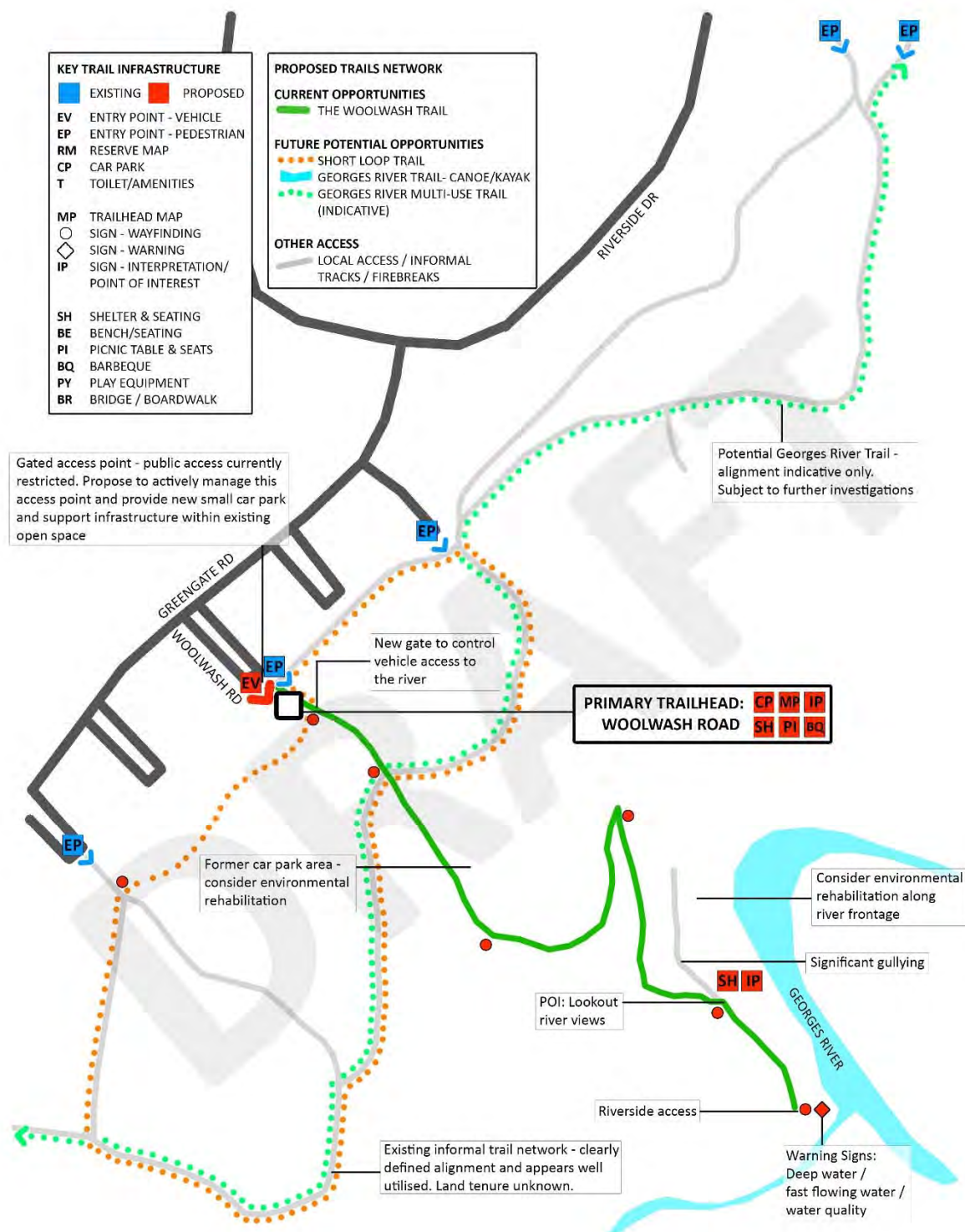
Refer to Strategic Outcome C Strategic Link & Loop Trail Concepts for actions relating to the Georges River Canoe/Kayak Trail and Multi-Use Trail (future potential opportunities)



**Table 23: Strategy A5 The Woolwash**

## The Woolwash

**Strategy A5:** Upgrade and enhance the existing trail network at The Woolwash, including new support infrastructure



Refer Section 11 for an A3 copy of the above map.

## The Woolwash

Key Features/Attractions	Key Current Issues
Natural environment Georges River / river access The Woolwash Sandstone rock formations Cultural heritage – European	Lack of existing amenities/facilities including no formal car park Lack of appropriate access point Limited signage / poor wayfinding Limited passive surveillance

### Overview & Rationale:

There exists a trail linking Woolwash Road to the Woolwash via a firebreak, although this trail is not promoted widely in current brochures (it is mentioned on the Council website). This location does not benefit from much in the way of existing support infrastructure, with a former car park now inaccessible due to a locked management gate at the end of Woolwash Road. Car parking is restricted to on-road parking directly in front of residential properties. There is no mapping, wayfinding or interpretation signage.

There currently exists the potential to deliver a linear out-and-back trail, formalising the current alignment with additional mapping, wayfinding and interpretation signage. In order to promote this location more widely for bushwalking it is considered that enhanced car parking arrangements and a new trailhead be developed, and actively managing the existing access gate. There is a former car park located some distance into the reserve, however, due to relatively dense surrounding vegetation and limited passive surveillance it is considered more desirable to develop a new, small car park within the existing open space at the end of Woolwash Road. This area might incorporate shelters, picnic tables and BBQ facilities.

Future potential opportunities relate to the development of a short loop trail utilising existing informal trails on adjacent land, subject to further detailed investigations to confirm viability and stakeholder support.

In terms of more strategic trail opportunities, there is the potential to develop a Georges River Canoe/Kayak Trail and on-land Multi-Use Trail (these are considered separately, refer Strategic Outcome C Strategic Loop and Link Trails).

### Trails – Current Opportunities

Trail Identifier	User Type	Classification	Distance	Focus/theme
The Woolwash Trail	Walk	Grade 3	3.6km	Natural environment Georges River Cultural heritage - European

### Trails – Future Potential Opportunities

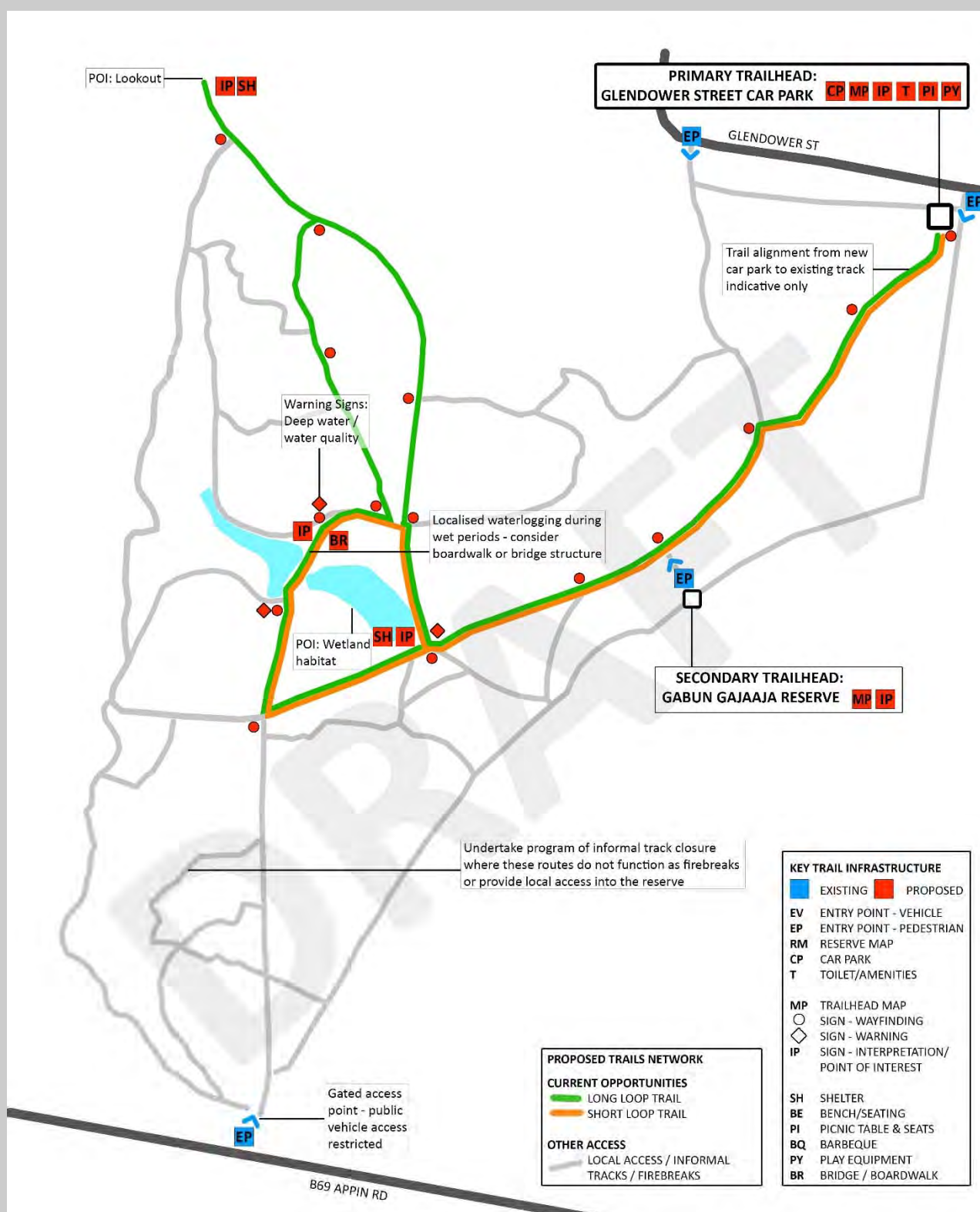
Trail Identifier	User Type	Anticipated Classification	Anticipated Distance	Focus/theme
Short Loop Trail	Walk	Grade 2	1.4km	Short walk on relatively flat terrain Natural environment
Georges River Trail – Canoe/Kayak	Canoe/Kayak	Grade 1-3	50km	River Natural environment
Georges River Multi-Use Trail	Walk Cycle/Mtb	Grade 3-4 Easy (green) - More Difficult (blue)	35-40km	River Natural environment

The Woolwash		
Actions	Priority / Timeframe	Estimated Resources
<b>A5.1</b> Undertake consultation with key stakeholders (e.g. local community, Indigenous community, friends of groups, environmental care groups, trail user groups) to confirm approach and, if appropriate, assign names to each of the trails, discuss interpretation material etc	Longer / 2021+	L
<b>A5.2</b> Prepare content and finalise graphic design of all signage	Longer / 2021+	L – L/M
<b>A5.3</b> Manufacture & install warning signage (1no.), trailhead signs (1no.), interpretation signage (2no.) & waymarkers (6no.)	Longer / 2021+	L/M
<b>A5.4</b> Construct new small car park and perimeter fencing/barrier, together with shelter (picnic table and bench seating) and BBQ at trailhead	Longer / 2021+	H
<b>A5.5</b> Install shelter with picnic table and bench seating at lookout point	Longer / 2021+	M
<b>A5.6</b> Undertake program of environmental rehabilitation along river frontage and at site of former car park	Longer / 2021+	L/M
<b>A5.7</b> Consider actively managing gated access to new car park	Longer / 2021+	-
<b>A5.8</b> Assess the feasibility of establishing a short loop trail commencing from the new trailhead, including the address of land tenure issues, assessment of potential impacts upon environmental and cultural heritage values, and detail design processes	Longer / 2021+	L/M
<b>A5.9</b> Continue program of rubbish removal across the Reserve	High / Ongoing	-
Refer to Strategic Outcome C Strategic Link & Loop Trail Concepts for actions relating to the Georges River Canoe/Kayak Trail and Multi-Use Trail (future potential opportunities)		

**Table 24: Strategy A6 Noorumba Reserve**

## Noorumba Reserve

**Strategy A6:** Upgrade and enhance the existing trail network at Noorumba Reserve, including new support infrastructure



Refer Section 11 for an A3 copy of the above map.



## Noorumba Reserve

Key Features/Attractions	Key Current Issues
Natural environment – high environmental values Wetlands Cultural heritage – Indigenous	Lack of existing amenities/facilities Limited signage / poor wayfinding Network of informal trails through areas of high environmental value Limited passive surveillance Unauthorised trail bike use Localised rubbish dumping

### Overview & Rationale:

There exists a network of firebreaks and informal trails across the reserve although these are not promoted widely in current brochures (the reserve is mentioned on the Council website). This location does not benefit from much in the way of existing support infrastructure, although a current Master Plan project details enhancement proposals for the reserve. It is understood that the focus for this reserve will be environmental conservation with proposals to restrict access to certain parts of the reserve and promote the use of only select firebreaks and informal trails for recreational use.

There currently exists the potential to establish 2 distinct loop trails, offering a variety of experiences, utilising the existing network of trails and firebreaks within the reserve (on Council managed land), running from a new trailhead/car park to be established off Glendower Street. Additional support infrastructure is proposed, including trailhead maps, wayfinding and warning signage, and additional interpretation signage (refer map).

The current program of informal/unauthorised track closures should continue to restrict access, minimise disturbance and isolate/protect pockets of native vegetation wherever feasible.

### Trails – Current Opportunities

Trail Identifier	User Type	Classification	Distance	Focus/theme
Long Loop Trail	Walk	Grade 2	2.7km	All Reserve features
Short Loop Trail	Walk	Grade 2	2.0km	Natural environment Wetland habitat

Actions	Priority / Timeframe	Estimated Resources
<b>A6.1</b> Continue to consult with the local community as part of the current master plan program for the Reserve.	High / 2016-17	-
<b>A6.2</b> Integrate trail concept proposals into current program of works, and consider incorporation of additional trail infrastructure, such as waymarkers, as identified on the plan	High / 2016-17	L – L/M
<b>A6.3</b> Continue program of informal / unauthorised / unsustainable track closures through re-vegetation and brushing (laying of cut branches / vegetation across trails to deter/block use)	High / Ongoing	L/M

## Strategic Outcome B: Complementary Opportunities: Nature/Adventure-based Activities

Table 25: Strategy B1 Other Recreational Trail Activities

Other Recreational Trail Activities		
<b>Strategy B1: Explore the potential for developing and formalising facilities for other recreational trail activities</b>		
<p><b>Rationale:</b> Beyond bushwalking trails, there are a range of other potential recreational trail activities that may be suitable to promote within the City of Campbelltown, subject to further detailed investigations.</p> <p>Such activities currently being undertaken within the City of Campbelltown include:</p> <ul style="list-style-type: none"> <li>Mountain biking (Mount Annan Botanic Gardens, Boronia Reserve &amp; surrounds, along sections of the Georges River, Smiths Creek Reserve)</li> <li>Canoeing/kayaking (Georges River, Nepean River)</li> <li>Horse riding (Scenic Hills region)</li> <li>On-road cycling (road network across the City)</li> </ul> <p>However, it is important to ensure that all types of recreational activities are occurring at appropriate and sustainable locations (and levels of activity) and are not, for instance, compromising environmental and/or cultural heritage values, or leading to local community/trail user conflict issues.</p> <p>Diversifying the range of available options for recreational trail users will benefit the local community, assist in identifying appropriate locations to conduct such activities, and attract additional visitors to the region.</p>		
Actions	Priority / Timeframe	Estimated Resources
<b>B1.1</b> Mountain biking – work with local mountain bikers, the community and other key stakeholders to identify issues and opportunities for the area with the intention of establishing a sustainable network of mountain bike trails in the area, and suitable to promote to visitors to the region	Medium / 2019-	M
<b>B1.2</b> Canoe/kayak – refer Strategy C1 Strategic Regional Trails, Action C1.5	-	-
<b>B1.3</b> Horse riding – work with local horse riders, the community and other key stakeholders to identify appropriate areas for horse riding in the region with the intention of establishing a sustainable network of bridle trails in the area, and suitable to promote to visitors to the region	Medium / 2019-	L/M
<b>B1.4</b> On-road cycling - work with on-road cycling groups, the community and other key stakeholders to identify appropriate areas for the promotion of on-road cycling in the region with the intention of establishing a safe network of on-road cycle loops across the area, and suitable to promote to visitors to the region	Medium / 2019-	L/M

**Table 26: Strategy B2 Complementary Activities at Council Reserves**

<b>Complementary Activities at Council Reserves</b>		
<p><b>Strategy B2: Further investigate opportunities to accommodate additional complementary activities at Council's bushland reserves</b></p> <p><b>Rationale:</b> In line with the recommendations of the Macarthur Destination Management Plan each key Council reserve was broadly considered in terms of its future potential to accommodate additional activities that might be considered complementary to existing recreation activities undertaken and existing environmental and cultural heritage values of each reserve.</p> <p>All the identified concepts below would require further detailed investigations, including community and indigenous consultation and, in most cases, the engagement of relevant experts, respective activity peak bodies and/or potential collaboration with commercial operators.</p> <p><b>Simmo's Beach Reserve</b> – given existing known high environmental and cultural heritage values additional activities would be limited those activities that could be undertaken on existing trails/firebreaks, such as trail orienteering and geocaching</p> <p><b>Ingleburn Reserve</b> - given existing known high environmental and cultural heritage values additional activities would likely be limited those activities that could be undertaken on existing trails/firebreaks and within existing developed parts of the reserve (e.g. amenity open space, existing and overspill car parking) and vegetation clearings. Potential activities such as small-scale camping (including RVs), trail orienteering and geocaching might be considered further.</p> <p><b>Keith Longhurst Reserve</b> – there are relatively fewer known environmental and cultural heritage values associated with this Reserve. This reserve is already a well-known destination (The Basin, Old Ford Road) and this Action Plan recommends elsewhere the upgrade of all support structure at this reserve. As such, it is considered appropriate to further investigate the potential for new infrastructure facilitating such activities as nature play playground, camping, high ropes course, zip line, rock climbing and orienteering</p> <p><b>Frere's Crossing Reserve</b> – relatively limited availability of Council managed land, coupled with a steep topography and limited existing infrastructure at this location would likely preclude the promotion of any significant levels of complimentary activities at this reserve, at least in the short to medium term</p> <p><b>The Woolwash</b> - relatively limited availability of Council managed land, coupled with a steep topography and limited existing infrastructure at this location would likely preclude the promotion of any significant levels of complimentary activities at this reserve</p> <p><b>Noorumba Reserve</b> - focus will be environmental conservation with activities limited to relatively low key/low impact pursuits such as bushwalking (on clearly defined trails) and environmental education (in line with current Master Plan for the reserve)</p> <p><b>Kanbyugal Reserve</b> – no known high environmental values and close to the CBD, noting residential development to the north west and commercial/light industrial land uses to the south east. This reserve may present opportunities for activities such as high ropes course, zip line facility, orienteering, geocaching</p> <p><b>Smiths Creek Reserve</b> – pockets of known high environmental values, with other areas potentially offering opportunities for activities such as geocaching, orienteering, mountain biking (secondary 'b-line' running parallel to main walk/cycle trail)</p>		
<b>Actions</b>	<b>Priority / Timeframe</b>	<b>Estimated Resources</b>
<b>B2.1</b> Simmo's Beach Reserve – investigate further the feasibility of accommodating and promoting activities such as trail orienteering and geocaching	Medium / 2019-21	L
<b>B2.2</b> Ingleburn Reserve – investigate further the feasibility of accommodating and promoting activities such as camping	Medium / 2019-21	L/M

<b>B2.3</b> Keith Longhurst Reserve – investigate further the feasibility of accommodating and promoting activities such as nature play playground, camping, high ropes course, zip line, rock climbing and orienteering	High / 2017-	M
<b>B2.4</b> Kanbyugal Reserve - investigate further the feasibility of accommodating and promoting activities such as high ropes course, zip line facility, orienteering, geocaching	Low / 2021-	L/M
<b>B2.5</b> Smith Creek Reserve - investigate further the feasibility of accommodating and promoting activities such as geocaching, orienteering, mountain biking	Low / 2021-	L/M

**Table 27: Strategy B3 Trail Theme Development**

Trail Theme Development		
<p><b>Strategy B3: Based around the general focus/themes identified by this report for individual reserves/trails, engage with key stakeholders to further develop and refine these concepts</b></p> <p><b>Rationale:</b> To ensure that all potential opportunities are identified (and maximise the appeal of each trail experience to specific target groups) further key stakeholder engagement should be undertaken to collate all relevant information and refine theme concepts.</p> <p>Key stakeholders should include:</p> <ul style="list-style-type: none"> <li>• Relevant Council officers</li> <li>• Local special interest groups (environment, heritage)</li> <li>• Local community members</li> <li>• Local schools</li> </ul> <p>In particular, active engagement with local community members will assist in promoting additional investment in the local trails network, securing support and 'buy-in' to the proposals, and gauging community priorities for individual projects. Detailed information gathered through these processes could also then form the basis for the refinement of interpretation signage material.</p>		
Actions	Priority / Timeframe	Estimated Resources
<b>B3.1</b> Undertake a series of workshops/forums with key stakeholder groups associated with individual reserves to explore broad concepts/ideas further and refine individual trail theme concepts	Ongoing	LW – L



**Table 28: Strategy B4 Themed Trail Experiences**

Themed Trail Experiences		
<b>Strategy B4: Develop a series of themed trail experiences linking multiple locations, based around a specific interest area</b>		
<p><b>Rationale:</b> The development of themed trail experiences will target visitors to the region with specific areas of interest and ensure that the visitor is aware of all the potential opportunities available to them. A themed trail may link multiple locations that are based around specific interest areas which offer a diverse range of connected but distinct experiences, such as:</p> <ul style="list-style-type: none"> <li>• Bird watching</li> <li>• Rare/Endangered Habitats</li> <li>• Indigenous Heritage</li> <li>• European Heritage</li> <li>• In-town heritage trails</li> <li>• Arts Trail</li> </ul> <p>This simply might involve identifying and promoting a series of locations (that already benefit from existing support infrastructure) which showcase all that the region has to offer in relation to each respective interest area through a trail brochure available at the Visitor Information Centre and downloadable online. A vehicle touring/drive trail might be identified to connect each of the individual locations and guide the user around the region.</p>		
Actions	Priority / Timeframe	Estimated Resources
<b>B4.1</b> Develop a series of themed trail experiences, based around each specific interest area	Medium / 2019-	M – M/H

**Table 29: Strategy B5 Economic and Community Development**

Economic and Community Development		
<b>Strategy B5: Use trail development and provision as an economic and community development tool.</b>		
<p><b>Rationale:</b> Established trail networks and their associated activities are able to provide significant benefits to the communities they traverse, particularly from an economic and tourism perspective. The development of special events in the region that use the trail networks as their principle facility should be supported to assist in raising the profile of the existing and future trails network and provide economic spinoffs to the communities that host the events.</p>		
Actions	Priority / Timeframe	Estimated Resources
<b>B5.1</b> Support and develop trail related special events such as mountain bike racing, trail rides, walks, orienteering, rogaining and other appropriate activities	Medium / Ongoing	L – L/M

## Strategic Outcome C: Strategic Regional Link & Loop Trail Network

Table 30: Strategy C1 Strategic Regional Trails

Strategic Regional Trails		
<b>Strategy C1: Support and engage with regional trail planning initiatives where these would benefit the local community and enhance tourism opportunities within the City of Campbelltown and wider region</b>		
<p><b>Rationale:</b> Over recent years several regional recreational trail concepts have been identified and progressed to varying levels of detail, including:</p> <ul style="list-style-type: none"> <li>• Georges River Trail / Great Kai Mai Way</li> <li>• Scenic Hills Trail</li> <li>• Macarthur Region Recreational Trail</li> </ul> <p>Most recently, Council received a Motion to investigate the potential to establish a Georges River Bush Cycle Track from Glenfield to Wedderburn.</p> <p>Such cross regional trails would serve to connect the City of Campbelltown and its existing trails network with trails across the Macarthur region and beyond, tapping into locations already well established as recreational trail/nature/adventure activity destinations, and increase the area's profile.</p>		
Actions	Priority / Timeframe	Estimated Resources
<b>C1.1</b> Continue to support and engage with current work being undertaken relating to regional trail planning and development on behalf of the Greater Sydney Commission	High / Ongoing	-
<b>C1.2</b> Undertake a feasibility study to establish the viability of developing a multi-use trail along the Georges River, connecting Glenfield in the north and Wedderburn in the south – “Georges River Trail” / “Great Kai Mai Way”	High / 2017	M/H
		Major Project
<b>C1.3</b> Undertake a feasibility study to establish the viability of developing a multi-use trail connecting Mount Annan Botanic Gardens and the Western Sydney Parklands – “Scenic Hills Trail”	Medium / 2019-2021	H
		Major Project
<b>C1.4</b> Undertake a feasibility study to establish the viability of developing a multi-use trail connecting Mount Annan Botanic Gardens, Camden and Menangle Park – “Macarthur Region Recreational Trail” (joint venture with Camden Council)	Medium – Low / 2019-	M/H
		Major Project
<b>C1.5</b> Engage a suitably qualified consultant /canoeist/kayaker to assess the viability of promoting a canoe/kayak trail on the Georges River, including determination of the navigable extent of the river	High / 2017-2019	M

**Table 31: Strategy C2 Local trail network connections**

Local trail network connections		
<b>Strategy C2: Develop local trail network connections</b>		
<b>Rationale:</b> Ensure future strategic regional trails are well connected to each other and facilitate local access onto and between these future trails for the community and visitors to the region		
Actions	Priority / Timeframe	Estimated Resources
<b>C2.1</b> Undertake a feasibility study to establish the viability of developing a multi-use trail loop that circumnavigates the CBD, university and hospital precincts, utilising existing trail networks through Council reserves (e.g. Smiths Creek Reserve)	Medium – Low / 2019-	L/M
		Major Project
<b>C2.2</b> Identify optimum local trail linkages to connect the multi-use trail loop with the future strategic loop trails, preferably utilising Council reserves and linear green corridors	Medium – Low 2019-	M - VH

## Strategic Outcomes D: Promotion, Marketing & Participation

Table 32: Strategy D1 Promotion & Marketing

Promotion & Marketing		
<b>Strategy D1:</b> Increased promotion and marketing of trail opportunities within the region		
<b>Rationale:</b> The development of a co-ordinated approach to the marketing of the region's trail network would greatly assist the promotion of the region's trails network, clearly conveying information to the local community and visitors to the region. The development and implementation of a consistent branding strategy across the trails network is recommended, with consideration given to the development of a trail logo that could be included on promotional material and signage and provide a consistent image that is recognisable across the region.		
Actions	Priority / Timeframe	Estimated Resources
<b>D1.1</b> Develop a coordinated approach to the production of visitor information maps / information bay / street directory mapping to accurately reflect the existing (and future) trails network	High / 2017	L
<b>D1.2</b> Develop a coordinated approach to marketing the trails network through the development of a Trails Marketing Strategy (or part of a wider regional marketing strategy)	Medium / 2019-21	L
<b>D1.3</b> Develop a City of Campbelltown trail logo for inclusion on all future trail signage and trail brochures	High / 2017	L
<b>D1.4</b> Develop / modify a style guide for trail signage, facilities and infrastructure	High / 2017	L – L/M
<b>D1.5</b> Remove dysfunctional, damaged, incorrect and illegible signage and replace with new signage in line with the style guide	High / Ongoing	L
<b>D1.6</b> Develop/enhance webpages hosted by Council to provide comprehensive details of all trail opportunities within the region, including interactive mapping and downloadable resources, with links to neighbouring Council and National Parks & Wildlife Service webpages that incorporate relevant trail information for the region	Medium / 2019-21	LW - L



**Table 33: Strategy D2 Mapping & Information**

<b>Mapping &amp; Information</b>		
<b>Strategy D1:</b> Improved mapping and identification of trails		
<b>Rationale:</b> Generally, the availability and quality of trails related information is highly variable across the region, and the information that is available is not always complete/current, nor does it always reflect existing conditions on the ground. There is no single, comprehensive source that provides a consistent level of information suitable to promote the existing trails network to local community members or visitors to the region. As part of the Strategy existing trails were audited, including GPS mapping of trail alignments. This information can now be used to reliably develop trail maps.		
<b>Actions</b>	<b>Priority / Timeframe</b>	<b>Estimated Resources</b>
<b>D1.1</b> Integrate trail related information identified as part of this project onto Council's interactive mapping webpage	High / Ongoing	LW
<b>D1.2</b> Develop a series of trail user maps/ brochures that are consistent in terms of design and levels of information provided (incorporating an update of the Georges River Bushwalking Guide) – to be available as hard copy at the Visitor Information Centre and available online for download	Medium / 2019 - 21	L/M - M
<b>D1.3</b> Upgrade trailhead signage/information (in line with the actions contained within this Strategy and Action Plan) to improve the availability/accessibility of information 'on the ground'	High / Ongoing	-

## Strategic Outcome E: Development, Management and Maintenance

Table 34: Strategy E1 Trail Planning Framework

Trail Planning Framework		
<b>Strategy E1:</b> Trail Planning Framework		
<p><b>Rationale:</b> There are a wide variety of stakeholders involved in the development, management and maintenance of trails across the region. Such stakeholders include Council, State government agencies, community groups, trail user groups and individual trail users. It is important that an integrated approach to planning for the whole region is undertaken.</p> <p>Trails have recreation, transport, environmental, cultural and heritage elements and there is a need to ensure that when planning for these that trail planning and management is considered and incorporated.</p> <p>Regular communication and collaboration will need to be maintained throughout the implementation of the Strategy, which would benefit from the establishment of a Trails Reference Group, comprising representatives from all key stakeholder groups. All aspects of trail planning, development, management and maintenance will need to be adequately resourced.</p>		
Actions	Priority / Timeframe	Estimated Resources
<b>E1.1</b> Trail planning initiatives to be recognised and incorporated into strategic community planning at a local government level (strategic plans, development plans, open space and recreation documents, management plans) plus other relevant government agency planning	High / Ongoing	LW
<b>E1.2</b> Formalise mechanisms for inter-Council collaboration to implement mutually beneficial trail development projects for the wider region	High / 2017	LW
<b>E1.3</b> Consider establishing a Trails Reference Group for the wider region (including representatives from Council, peak trail bodies and community/trail groups). Incorporate and engage representatives from the community, State and Local Government agencies and the private sector through invitation and attendance at meetings	Medium – Low / 2019+	L

Table 35: Strategy E2 Management Structures

Management Structures		
<b>Strategy D2:</b> Ensure the management structures for all current and future trails are clearly defined		
<p><b>Rationale:</b> To ensure that all trails 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, preferably to a government agency (local or state) as they are more likely to have the necessary resources and expertise.</p>		
Actions	Priority / Timeframe	Estimated Resources
<b>D2.1</b> Ensure all trail manager roles are clearly defined, particularly for community driven trail development	High / Ongoing	LW
<b>D2.2</b> Ensure adequate trail maintenance schedules and procedures are defined and adhered to for all trails	High / 2017-19	LW
<b>D2.3</b> Develop a management and maintenance manual as a guide for all trail managers, community and volunteer groups	Medium – Low / 2019-	L

## 10. Implementation

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The Strategy & Action Plan will need to be adequately resourced. The establishment of a permanent Trail Reference Group comprising representatives from Council, State government departments, peak bodies representing trail user groups, local trail user groups and other interested individuals would significantly improve the successful implementation of the identified strategies and actions, ultimately delivering the overall trail network vision for the region.

Progress of the Strategy & Action Plan will need to be continually monitored and reported annually to Council and the community. The Strategies and stated actions will be periodically reassessed and updated to respond to the changing circumstances and requirements of the area. Actions may be amended, removed or re-prioritised to address the key issues identified at any given time.

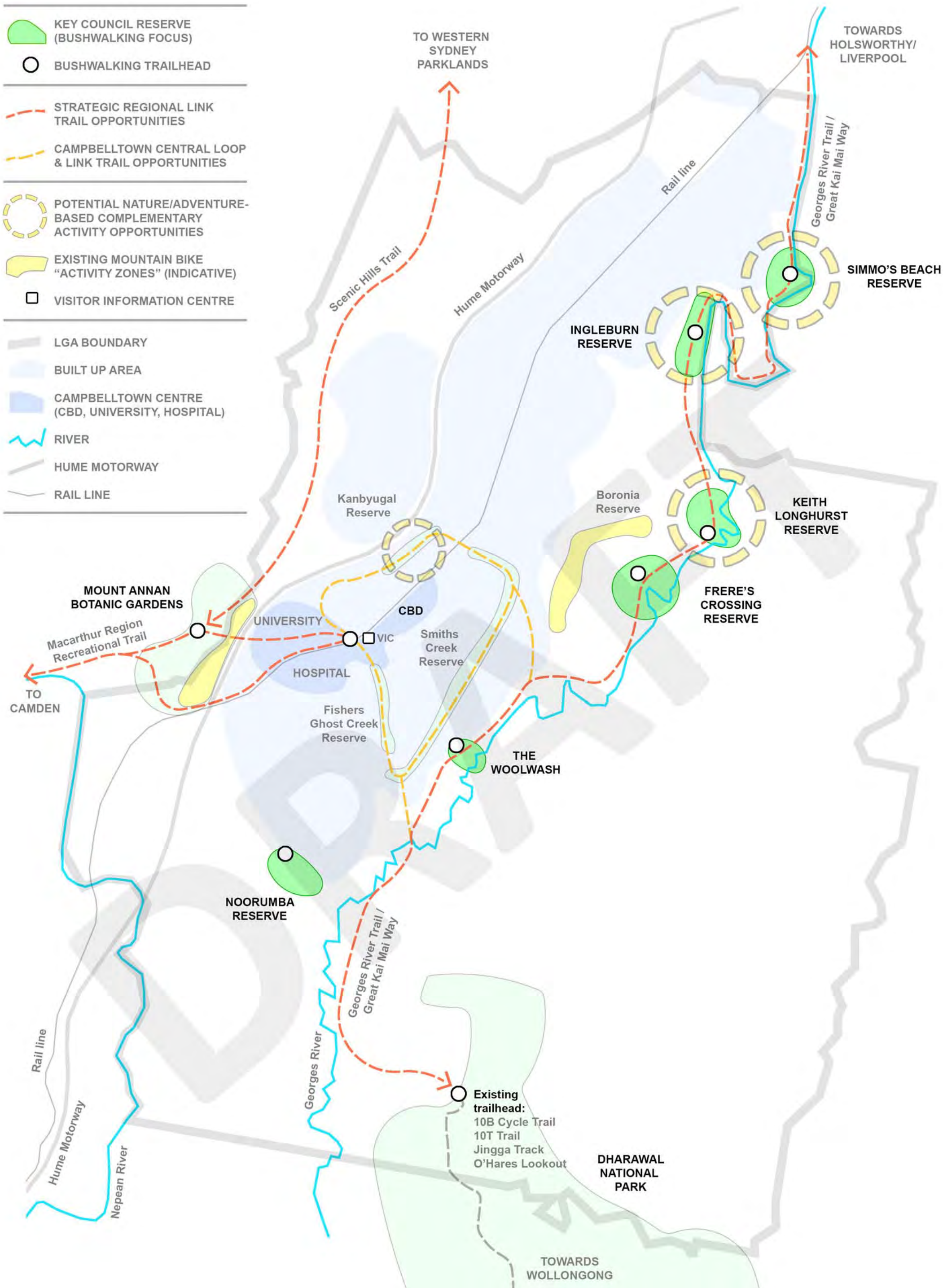
Community engagement will be encouraged to ensure that the evolving needs and aspirations of the community are identified and reflected in the targeted actions of the Strategy.

An ongoing commitment of funds and resources will be required to achieve the objectives of the Strategy. A range of funding options need to be considered, together with the sourcing of potential grant schemes. Opportunities to form partnerships with other potential stakeholders should be sought where this would deliver successful outcomes and assist in the completion of the Strategy & Action Plan.

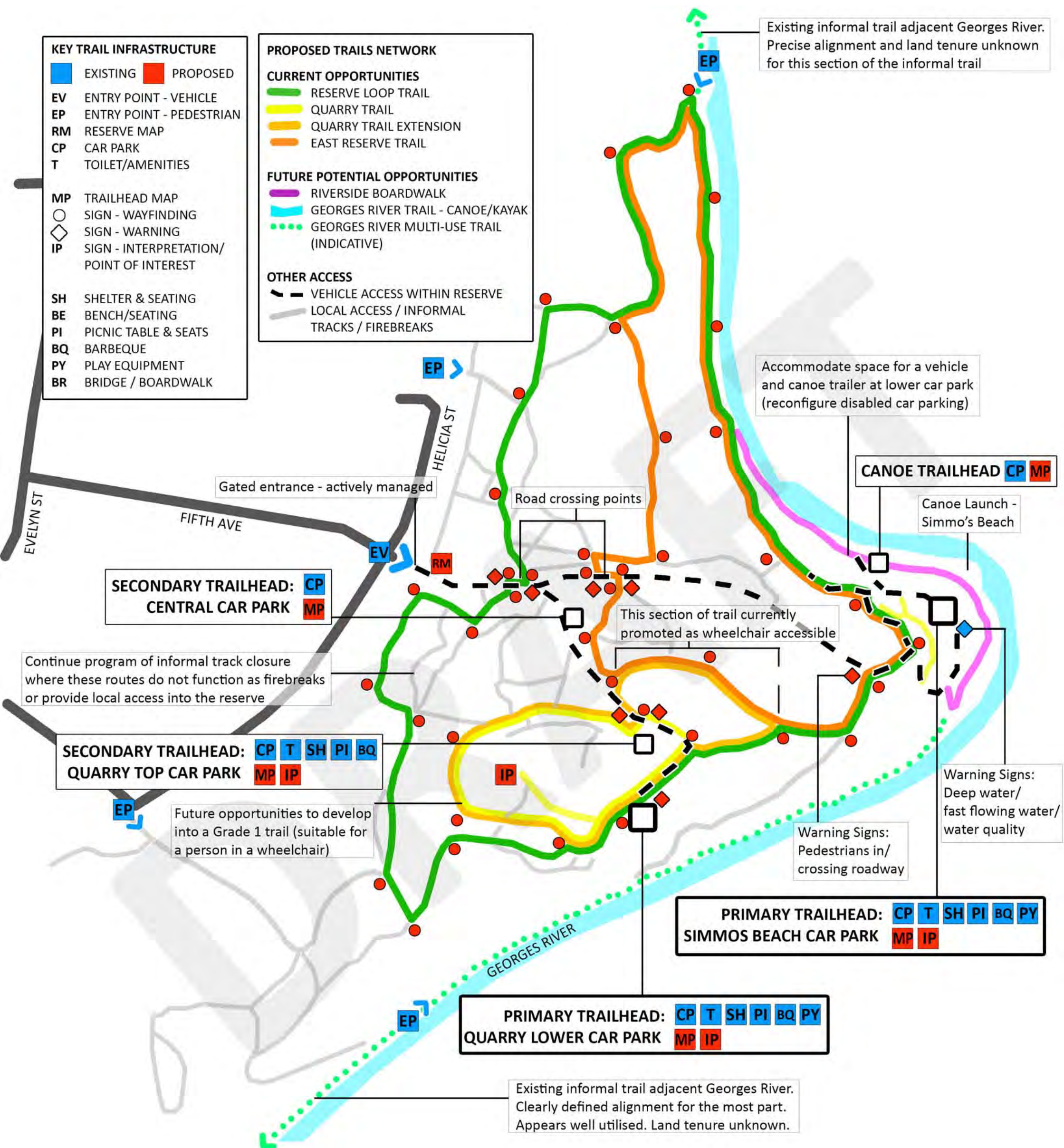
## 11. A3 Mapping

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**KEY TRAIL INFRASTRUCTURE**

■ EXISTING    ■ PROPOSED  
**EV** ENTRY POINT - VEHICLE  
**EP** ENTRY POINT - PEDESTRIAN  
**RM** RESERVE MAP  
**CP** CAR PARK  
**T** TOILET/AMENITIES  
  
**MP** TRAILHEAD MAP  
  SIGN - WAYFINDING  
  SIGN - WARNING  
IP SIGN - INTERPRETATION/  
 POINT OF INTEREST  
  
**SH** SHELTER & SEATING  
**BE** BENCH/SEATING  
**PI** PICNIC TABLE & SEATS  
**BQ** BARBEQUE  
**PY** PLAY EQUIPMENT  
**BR** BRIDGE / BOARDWALK

**PROPOSED TRAILS NETWORK**

**CURRENT OPPORTUNITIES**

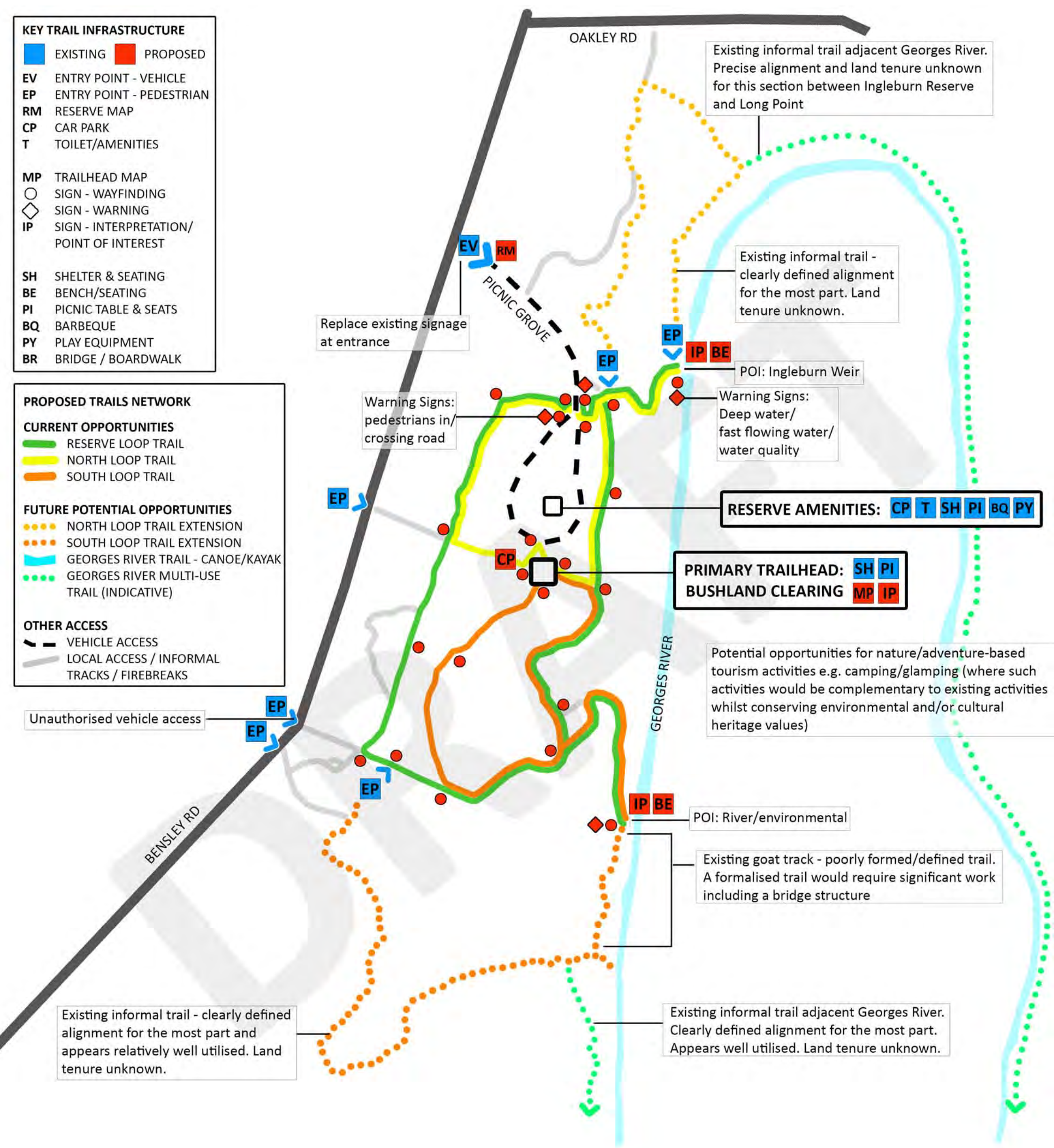
— RESERVE LOOP TRAIL  
— NORTH LOOP TRAIL  
— SOUTH LOOP TRAIL

**FUTURE POTENTIAL OPPORTUNITIES**

⋯ NORTH LOOP TRAIL EXTENSION  
⋯ SOUTH LOOP TRAIL EXTENSION  
— GEORGES RIVER TRAIL - CANOE/KAYAK  
⋯ GEORGES RIVER MULTI-USE TRAIL (INDICATIVE)

**OTHER ACCESS**

— VEHICLE ACCESS  
— LOCAL ACCESS / INFORMAL TRACKS / FIREBREAKS





## KEY TRAIL INFRASTRUCTURE

- EXISTING ■ PROPOSED  
**EV** ENTRY POINT - VEHICLE  
**EP** ENTRY POINT - PEDESTRIAN  
**RM** RESERVE MAP  
**CP** CAR PARK  
**T** TOILET/AMENITIES

- MP** TRAILHEAD MAP  
○ SIGN - WAYFINDING  
◇ SIGN - WARNING  
**IP** SIGN - INTERPRETATION/  
POINT OF INTEREST

- SH** SHELTER & SEATING  
**BE** BENCH/SEATING  
**PI** PICNIC TABLE & SEATS  
**BQ** BARBEQUE  
**PY** PLAY EQUIPMENT  
**BR** BRIDGE / BOARDWALK

## PROPOSED TRAILS NETWORK

### CURRENT OPPORTUNITIES

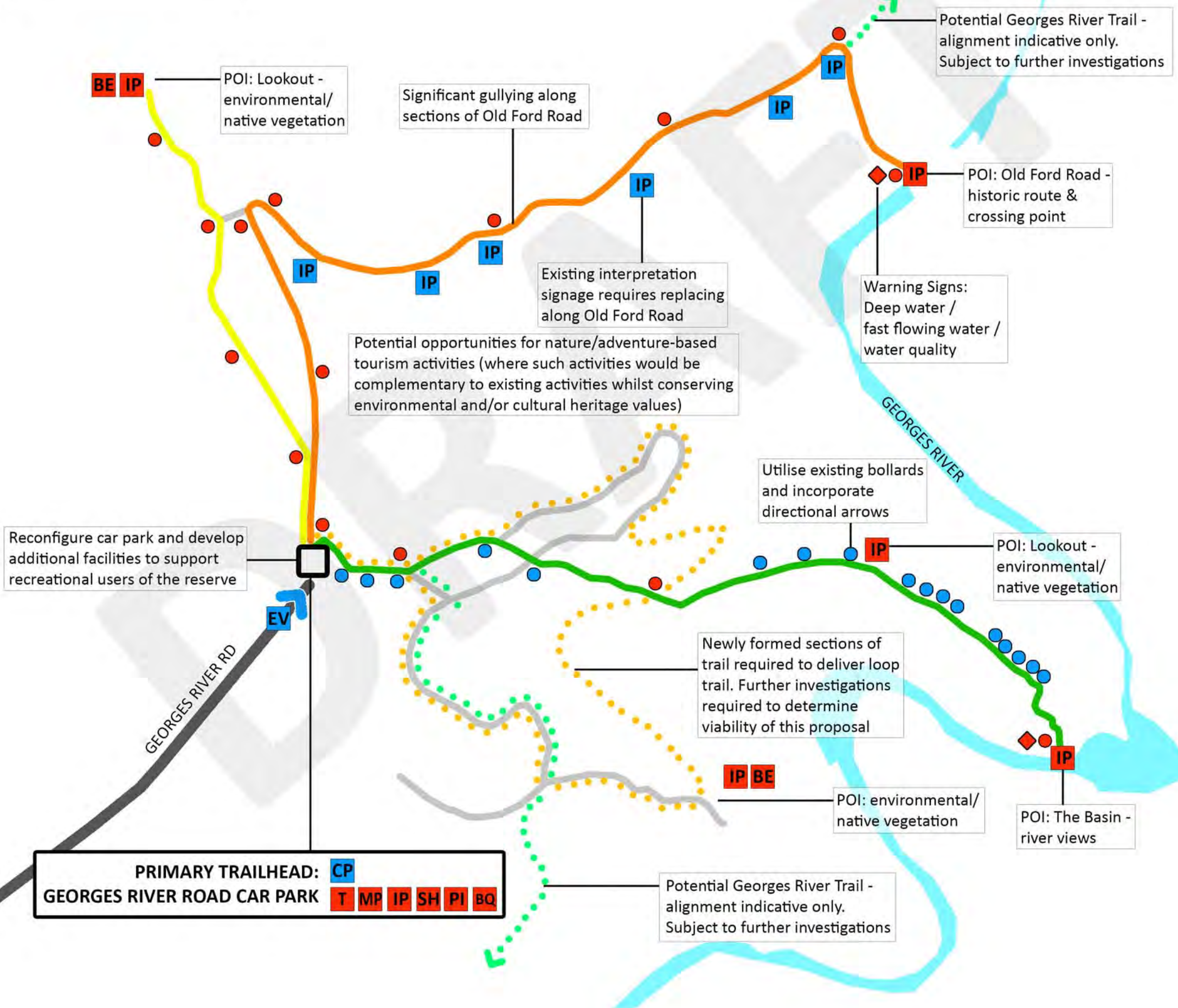
- THE BASIN WALKING TRAIL  
— OLD FORD ROAD TRAIL  
— NORTHERN LOOKOUT TRAIL

### FUTURE POTENTIAL OPPORTUNITIES

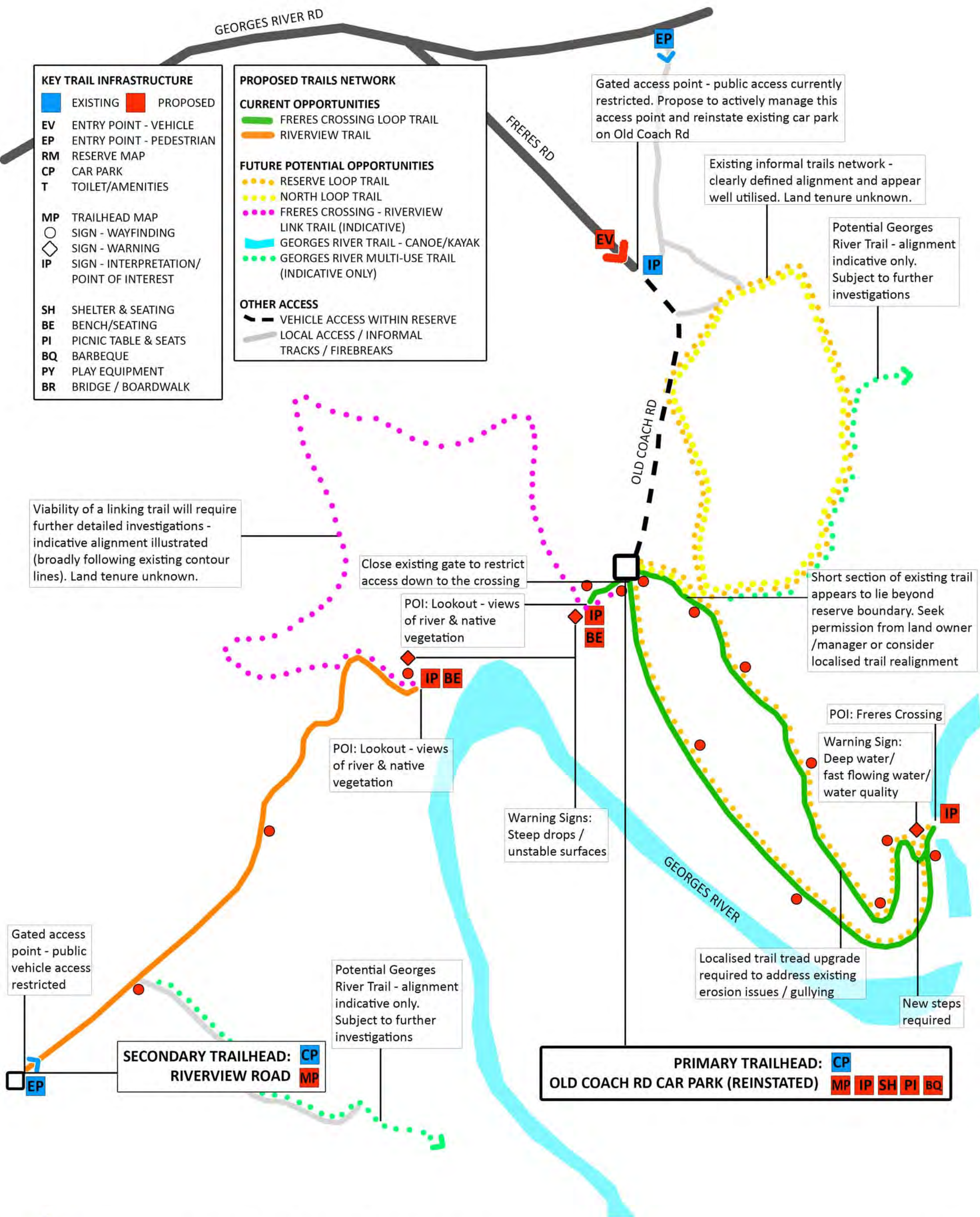
- ⋯ 1.5KM LOOP TRAIL (INDICATIVE)  
— GEORGES RIVER TRAIL - CANOE/KAYAK  
⋯ GEORGES RIVER MULTI-USE TRAIL (INDICATIVE)

### OTHER ACCESS

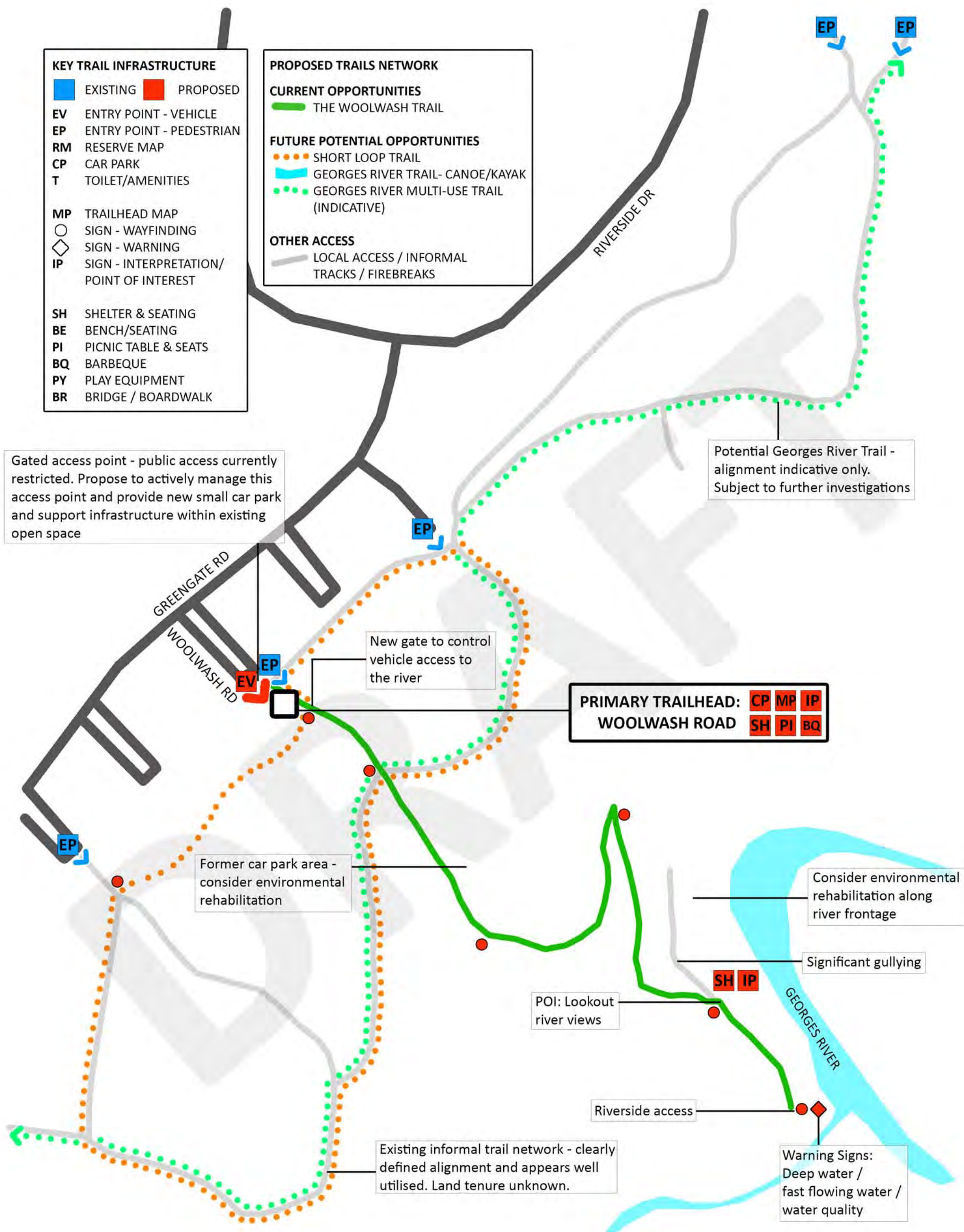
- LOCAL ACCESS / INFORMAL TRACKS / FIREBREAKS













POI: Lookout

IP SH

PRIMARY TRAILHEAD:  
GLENDOWER STREET CAR PARK

CP MP IP T PI PY

EP

GLENDOWER ST

Trail alignment from new  
car park to existing track  
indicative only

Warning Signs:  
Deep water /  
water quality

IP

BR

Localised waterlogging during  
wet periods - consider  
boardwalk or bridge structure

POI: Wetland  
habitat

SH

IP

SECONDARY TRAILHEAD:  
GABUN GAJAJA RESERVE

MP IP

Undertake program of informal track closure  
where these routes do not function as firebreaks  
or provide local access into the reserve

Gated access  
point - public  
vehicle access  
restricted

EP

B69 APPIN RD

#### PROPOSED TRAILS NETWORK





##### CURRENT OPPORTUNITIES

- LONG LOOP TRAIL
- SHORT LOOP TRAIL

##### OTHER ACCESS

- LOCAL ACCESS / INFORMAL  
TRACKS / FIREBREAKS

#### KEY TRAIL INFRASTRUCTURE

- |   |   |   |          |
|---|---|---|----------|
|  | EXISTING                                    |  | PROPOSED |
| EV  | ENTRY POINT - VEHICLE                       |   |          |
| EP  | ENTRY POINT - PEDESTRIAN                    |   |          |
| RM  | RESERVE MAP                                 |   |          |
| CP  | CAR PARK                                    |   |          |
| T   | TOILET/AMENITIES                            |   |          |
| MP  | TRAILHEAD MAP                               |   |          |
|  | SIGN - WAYFINDING                           |   |          |
|  | SIGN - WARNING                              |   |          |
| IP  | SIGN - INTERPRETATION/<br>POINT OF INTEREST |   |          |
| SH  | SHELTER                                     |   |          |
| BE  | BENCH/SEATING                               |   |          |
| PI  | PICNIC TABLE & SEATS                        |   |          |
| BQ  | BARBEQUE                                    |   |          |
| PY  | PLAY EQUIPMENT                              |   |          |
| BR  | BRIDGE / BOARDWALK                          |   |          |



## 12. Theme Development

Within the Strategy and Action Plan, *Strategies B3: Trail Theme Development* and *B4: Themed Trail Experiences* involve the concept of creating distinct trails for particular target user groups. Provided below are examples of trails which have been developed and marketed around various themes.

### Macquarie River Bird Watching Trail Guide, New South Wales



This Bird Watching Trail guide is a joint initiative between RiverSmart Australia and the Warren Shire Council. The brochure features sites known by locals to provide the best publicly accessible bird watching experiences. The guide provides a mix of individual sites and area 'routes' guiding trail users to numerous spots within the Macquarie River region and is component of an eight-part series of brochures for themed trails/routes within the region. All of these guides can be downloaded.

Trails within the Campbelltown City Council area have the capability to become a birdwatching trail through guiding trail users between bushland reserves and providing information on the birds in the area.

Further details are available at [http://www.rivertrails.com.au/cms/wp-content/uploads/2014/09/Bird-Trail-Guide\\_14.pdf](http://www.rivertrails.com.au/cms/wp-content/uploads/2014/09/Bird-Trail-Guide_14.pdf)

### Mudlangga to Yertabulti Track, South Australia



The Mudlangga to Yertabulti Track is administered by the City of Port Adelaide Enfield in South Australia. The track involves 16 signs and 8 special nodes around the Council area as a means of telling the stories of Aboriginal people who have had a long association with the area. Through visiting the sites, reading the signs and studying the website & brochure, trail users gain a stronger understanding of the lives of Aboriginal people in both the recent and distant past.

It is known that there are over 300 sites of Aboriginal significance within the Campbelltown City Council area<sup>34</sup>. In collaboration with local Aboriginal people, a theme could be developed to guide users between specific sites and walking tracks, educating on Indigenous culture and history.

Further details are available at <http://www.portenf.sa.gov.au/page.aspx?u=2185>

### Adelaide Hills Sculpture Trail, South Australia



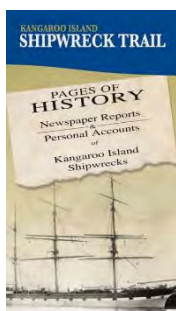
This trail guides users to locations throughout the Adelaide Hills to discover world class sculptures. The sculptures were crafted by master sculptors from across the world during the Adelaide Hills International Sculpture Symposiums. This trail was funded by a grant from Regional Development Australia and three local councils, and is a tribute to the vision and collaboration of the local community.

In collaboration with the local artistic community, Campbelltown City Council could strengthen linkages between local artists and the natural landscapes through developing creative themes with the area's the bushwalking network.

Further details are available at <http://www.adelaidehillssculpture.com.au/content/content/HST-2016-eBroch.pdf>



## Kangaroo Island Shipwreck Trail, South Australia, and Southern Ocean Shipwreck Trail, South Eastern South Australia



These trails provide insight into South Australia's maritime history through providing signs and story panels along the coast at sites associated with shipwrecks. Although in some locations the point of interest (the shipwreck) cannot be seen, users can appreciate its existence and context through the interpretive signage and brochure. History is conveyed on the signage through newspaper reports and personal accounts.

Further details are available at [http://www.environment.sa.gov.au/our-places/Heritage/Visiting\\_heritage\\_places/Shipwreck\\_trails/Kangaroo\\_Island](http://www.environment.sa.gov.au/our-places/Heritage/Visiting_heritage_places/Shipwreck_trails/Kangaroo_Island)

## The Disney Fairies Trail, launched at The Australian Botanic Garden, Mt Annan



The Disney Fairies Trail and app allows children to find and fly the Disney Fairies using magical augmented reality technology. The app is designed to show children the true magic of our natural world. The partnership reinforced brand recognition and values while fulfilling key social responsibility and education objectives for the Walt Disney Company in Australia.

This trail is an example of a corporate partnership promoting a trail to a target audience. Campbelltown City Council could develop partnerships for themed trails, such as building upon the area's existing "ghost theme".

Further details are available at <https://www.rbgsyd.nsw.gov.au/Join-Support/Corporate-Support/Corporate-Partners/The-Disney-Fairies-Trail-Magic-in-our-Natural-Wor>

## Alice in Wonderland Town Trails, Llandudno, United Kingdom



This trail allows users to discover the town's connections with Alice Liddell (the original Alice in Wonderland) who lived there in the 1860's. Users start at the tourist information centre and follow 55 bronze cast rabbit footprints around the trail, guided by a trail map and/or a smartphone app providing further details of each site.

Further details are available at: <http://www.visitllandudno.org.uk/things-to-do/alice-in-wonderland-town-trails-p296751>



# Tables, Figures and References

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# INITIAL SCOPING/FEASIBILITY REPORT

## GEORGES RIVER RECREATIONAL TRAIL





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# 1. Project Brief

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Undertake a feasibility study on the potential to establish a Georges River Recreational Trail ('bush cycle track') from Glenfield to Wedderburn, including a high-level assessment of the following:

- Possible route and access points along the track
- Key strategic considerations/constraints (potential impediments):
  - Land tenure
  - Topography/contours/major landform features
  - Cultural heritage values
  - Environmental values
- Approximated construction costs and ongoing maintenance benchmarks
- Broad timeframes that allows for concept and detail design stages and implementation stages
- Identification of potential funding sources
- Scope and costings for further extensive investigation incorporating stakeholder consultation

## 2. The Study Area

---

The Study Area is broadly defined by the project brief as including areas along the east flank of Campbelltown LGA. It is considered appropriate to further refine the Study Area to locations that would deliver an appropriate experience relating to a recreational trail within in a bushland setting i.e. areas associated with the parks and reserves along the Georges River corridor.

Roads within and immediately adjacent to this corridor are also considered potentially suitable for use, where constraints might ultimately prohibit the establishment of the trail within parks, reserves or other open space, and where these roads might provide a suitable alternative alignment to address strategic gaps in the trail network.

### 3. Trail Planning & Development Process

The trail planning and development process (from concept to implementation) typically involves the components identified in the table below.

**Table 1 Trail Planning Stages**

Trail Planning Stage	Key Documents/Actions	Description
Strategic Planning	State Trails Master Plan	Prioritised strategic trail initiatives for the State/region/LGA
	Regional Trails Master Plan	
	Local Government Trails Master Plan	
Local Planning	Detailed/Individual Trail Feasibility Study	Identification of trail alignment options, challenges & constraints, trail user target markets, broad cost estimates and establishes the overall feasibility of delivering the project on the ground
	Trail Development Plan / Detail Design Documentation	Confirms exact trail alignment, support infrastructure requirements & costs, resolves challenges & constraints and secures required approvals/permissions
Development	Trail construction	Construction of trail
Maintenance	Trail maintenance	Ongoing maintenance of trail

In the context of this trail development proposal, relevant strategic and local trail planning documents include:

- Sydney Metropolitan Regional Recreational Trails Framework (2005)
- Great Kai' Mia Way Feasibility Study (2004)
- Campbelltown Walking Track Network Options Review Report (2003)
- Campbelltown Review of Bushwalking Tracks and Associated Facilities Report (2017)

Broadly speaking, these documents support the development/continued investigations into the delivery of a recreational trail (suitable for walking and cycling) through Campbelltown LGA and in the vicinity of the Georges River. Further investigations into such a trail concept are also identified and broadly supported within the Campbelltown Review of Bushwalking Tracks and Associated Facilities Report (2017).

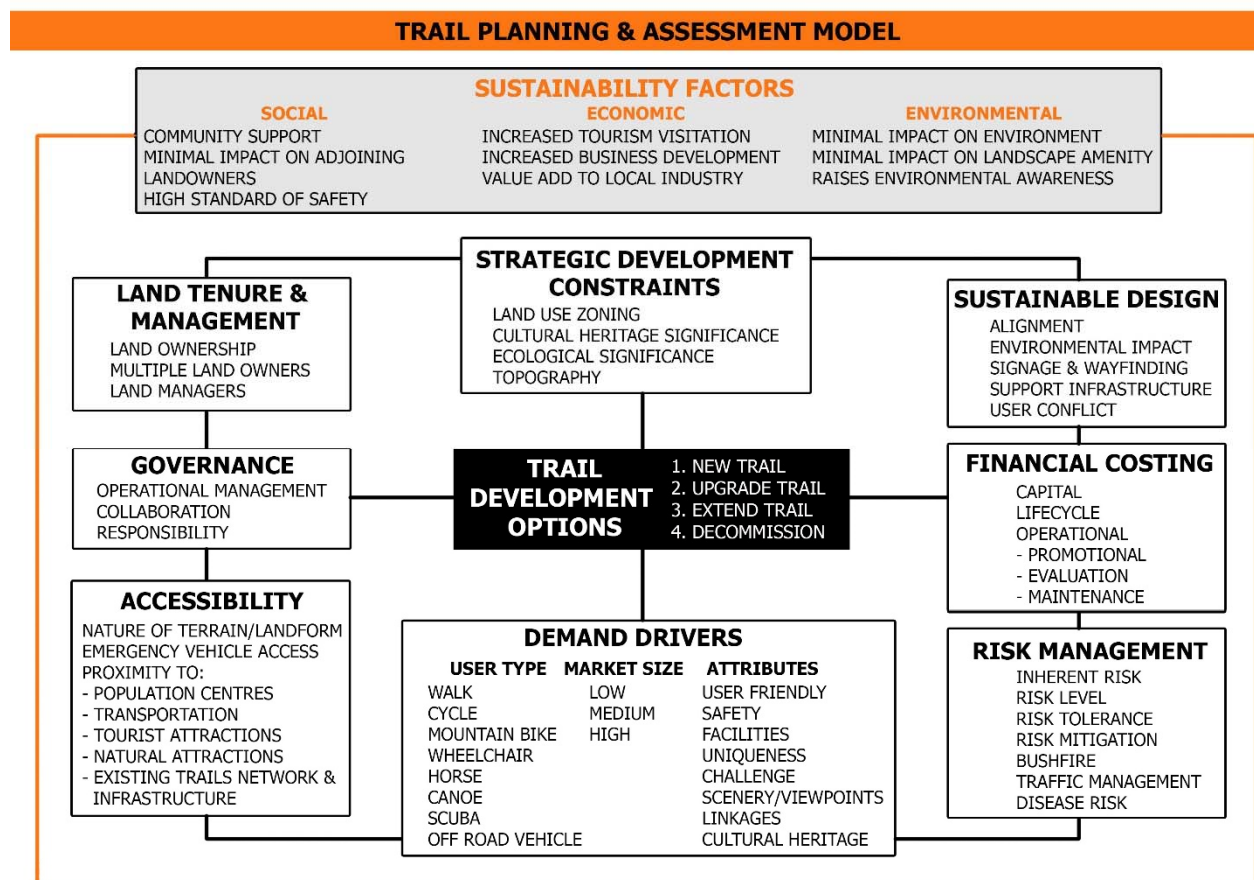
Multiple strategic planning documents have identified the Georges River corridor as a notable opportunity for a new walk and cycle recreational trail, it is considered appropriate that any preliminary and future investigations should reflect the potentially strategic importance of any trail that runs through this area.

It is acknowledged that the scope and scale of delivering a walk and cycle recreational trail would likely be of a greater magnitude and complexity than solely focusing on delivering a 'bush cycle track'.

## 4. Limitations of this Report

Tredwell Management utilises an assessment tool (TPAM – Trail Planning & Assessment Model) to assist in the determination of the optimum trail development option for any given situation. The diagram below provides a broad overview of the typical opportunities, challenges and constraints that may require address when considering a trail development project, whether that be developing a new trail, upgrading, formalising or extending an existing trail or decommissioning an undesirable/inappropriate trail.

Within the limited scope of this report, only some of these considerations are identified and addressed further (at a high level).



**Figure 1: Trail Planning and Assessment Model**

The intention of this short report is to provide a high level preliminary review of key strategic considerations (potential opportunities and constraints) that will inform and guide the next stage of the trail planning process.

The next step would be to undertake a detailed trail feasibility study to fully consider all trail alignment options, refine trail user target markets and identify all challenges and constraints associated with delivering a trail on the ground. The broad scope and approximate costings associated with such a study are included at the end of this report.

Council may be able to resource and undertake some or all of these works in-house, thereby reducing overall costs. No on-ground assessments have been undertaken specifically to ground-truth any of the preliminary findings of this report.

The scope of works for this initial scoping/feasibility study is limited to a desktop analysis utilising the following resources:

- City of Campbelltown Local Environmental Plan 2015
- City of Campbelltown Walking Track Network Options Review Report (April 2003)
- City of Campbelltown – GIS layer – Cadastre
- City of Campbelltown – GIS layer – Land Tenure
- City of Campbelltown – GIS layer – Significant Vegetation
- City of Campbelltown – GIS layer – Fire Tracks
- NSW AHIMS Online Service (Aboriginal Heritage Information Management System)
- Nearmap (high-resolution aerial imagery)
- Google Earth Measurement Tool & Elevation Profile
- Strava Global Heatmap
- NSW Planning Portal



## 5. Desired Trail Characteristics

---

For the purposes of this Study it is appropriate to consider the delivery of a new trail that is planned and designed for both walkers and cyclists.

It is understood that the existence of an informal trail along localised sections of the Georges River is known within the local cycling/mountain bike, walking and running community. To some extent, this is confirmed by data accessed via Strava's Global Heatmap, which maps cycling and trail running routes, although precise levels of use are difficult to establish from this source alone.

### 5.1 Potential Trail User Target Market

At this early stage, it is anticipated that the following trail user groups might utilise a formalised trail of this nature:

- Cyclists
  - Mountain bike – cross country/enduro
  - Recreational cyclist / Cyclocross (with hybrid bike suitable for on and off road cycling)
- Walkers
  - Short-distance (e.g. within individual Council reserves)
  - Medium-distance (e.g. between Council reserves / primary trailheads)
  - Long-distance (e.g. entire length of trail)
- Runners
  - Trail runners
  - Triathlon
  - Orienteering

Less challenging sections of the trail may be suitable to promote to additional recreational trail user groups where the terrain is less challenging; there is greater access to support infrastructure (e.g. toilets, additional waymarker/reassurance signage); and the trail environment/setting is more conducive to casual recreation visitation (e.g. Council reserves such as Simmo's Beach Reserve). Such sections of trail might appeal to family recreational cyclists and walkers; shorter loop trails for walkers and cyclists within Council reserves might be considered in the future, in line with the recommendations of the Campbelltown Review of Bushwalking Tracks and Associated Facilities Report (2017).

Proximity to other established areas for mountain biking, both authorised (e.g. Mount Annan Botanic Gardens) and unauthorised (land near Boronia Reserve) present opportunities to link in with a future Georges River Recreational Trail, and attract a more diverse range of trail user groups.

### 5.2 Overall experience

Each trail user group (and individual trail user) will be seeking a different trail experience, broadly influenced by the speed at which they are travelling, their respective abilities, and the type of technical challenge they are seeking. Walkers, runners and cyclists tend to prefer a trail at a human scale that enables a level of connectivity with their surrounds. In the context of a trail adjacent to the Georges River, it is reasonable to assume that trail user expectations would likely include a degree of physical/visual access to the river, and that a significant proportion of the trail would run through a bushland setting. Indeed, within the Sydney Metropolitan area, this would likely be a key point of difference that might attract potential trail users to the area.

Excessive use of busy, urbanised road corridors for instance would generally detract from the overall experience of a recreational trail in a bushland setting, although there may be localised areas where this becomes unavoidable. Quieter roads, with a more rural/bushland setting might offer a more appropriate alternative. Similarly, an over-reliance on wider firetracks/firebreaks and maintenance tracks may detract from the overall experience.

## 5.3 Trail Design Parameters - Essentials

Trails should be designed to be sustainable and accessible (refer section 5 Trail Planning & Design Principles, in the main body of the report). In this bushland context, a trail tread surface considered suitable for both cyclists and walkers would be a natural/compacted earth surface, free from obstacles/trip hazards, potholes and severe level changes, that generally follows existing contour lines wherever possible. For sections of trail that are likely to experience higher levels of use, or are particularly susceptible to erosion, a more durable trail tread surface may need to be considered, such as compacted gravel.

Shared-use trails (e.g. for walking and cycling) should typically have a width of between 2.0-2.5m, with a minimum height clearance of 2.4m and also incorporate clear sightlines that enable all trail users to be reasonably aware of one another, reduce travel speeds and enable avoidance of conflict/incidence. Trail width may be increased to 3.0m wide in areas of high usage, however reducing trail width below 2.0m is not generally recommended, but might be considered on a case by case basis where space is particularly constrained.

Mountain bikers tend to prefer dedicated single track, which might be narrowed down to between 0.8-1.0m; this would only be considered appropriate if it was ultimately determined to pursue a single-use mountain bike trail, to the exclusion of walkers.

Council has an obligation to ensure that any new trail is designed appropriately to meet the needs of all authorised trail user groups (whilst taking reasonable steps to restrict unauthorised uses), and that the trail is safe to actively promote. Given that there will be a requirement for significant initial and ongoing levels of investment, it is imperative that a new recreational trail in this area capitalises on and maximises every opportunity, whilst meeting demonstrated needs of the broad spectrum of potential trail user groups (both members of the local community and visitors to the region).

A subsequent detailed feasibility study should fully establish the demand for a recreational trail, further refine the appropriate user target market/desired trail experiences, and undertake more detailed desktop analysis and on-ground assessments. Key stakeholder engagement and consultation will also be critical to the process.

## 6. Trail Alignment Identification

---

The following trail alignment identification principles have been adopted:

- Deliver connectivity between:
  - Glenfield and Wedderburn (and all suburbs adjacent to the bushland corridor)
  - the new recreational trail and known areas of cycling/mountain bike activity within/in the vicinity of the Study Area
  - the new recreational trail and established areas for bushwalking within/in the vicinity of the Study Area
- Connect key Council reserves along the Georges River corridor (whilst taking advantage of existing infrastructure already in place at several of these reserves)
- Utilise existing tracks/trails where available, sustainable and accessible, to minimise additional vegetation clearance, potential additional adverse environmental impacts, and related costs
- Adhere to trail planning and design principles to deliver sustainable and accessible trails

The identification of a potentially suitable trail alignment was further guided by the following:

- High level guidance from the brief
  - Bush cycle trail along east flank of Campbelltown LGA, between Glenfield & Wedderburn
  - Broad identification of the bushland/recreation corridor associated with Georges River (the 'Study Area')
- Recognition that certain existing land uses/zoning in the area would likely preclude the use of that land for the development of a recreational trail e.g.
  - Holsworthy Military Area (Land Zone SP2 Infrastructure - Defence)
  - Glenfield Water Recycling Plant (Land Zone SP2 Infrastructure – Sewerage System)
- Recognition that certain potential future land uses/zoning in the area might preclude the use of that land for the development of a recreational trail e.g.
  - areas identified as Land Zone SP2 Infrastructure - Future Transport Corridor
- Identification of existing tracks and trails
  - Knowledge gathered as part of the current review of bushwalking tracks (including GIS mapping data).
  - High resolution aerial imagery (Nearmap)
  - Strava Global Heatmap (mapping data that identifies popular cycling routes in the area based on individual user upload data)
- Review of Campbelltown Walking Track Network Options Review Report (April 2003)
  - Existing fire trails and walking tracks
  - Proposed walking tracks (considered potentially viable at the time of that report)
- Address of strategic gaps in the existing prescribed and informal trail network

It is important to reiterate that no on-ground assessments have been undertaken to establish or confirm any of the details described within this report. The precise nature of much of the length of the existing and proposed trail alignment identified is not currently known, nor the appropriateness of the alignment to meet the objectives of delivering a sustainable recreational trail. There may be other opportunities to be explored, and other issues/constraints to be addressed; this can only be definitively established by undertaking a detailed feasibility study, including detailed survey work, on-ground assessments and comprehensive stakeholder consultation.

## 7. Preliminary Concept Trail Alignment Mapping

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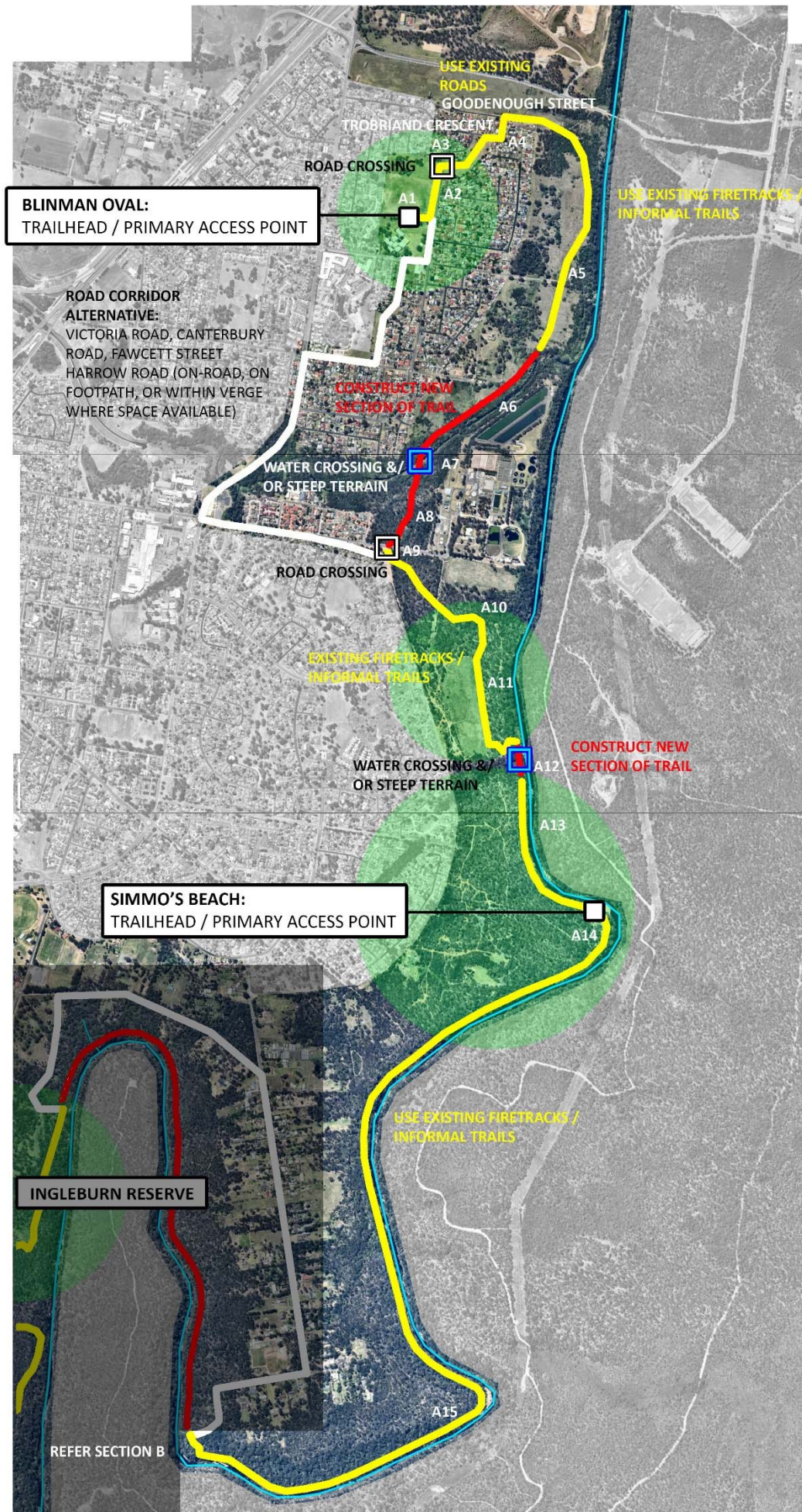
A series of maps have been developed to illustrate the preliminary concept trail alignment (refer following pages):

- Section A: Glenfield – Long Point
- Section B: Long Point – Keith Longhurst Reserve
- Section C: Keith Longhurst Reserve – Canally Reserve
- Section D: Canally Reserve – Noorumba Reserve
- Section E: Noorumba Reserve – Dharawal National Park

These maps identify the following key components of the trail:

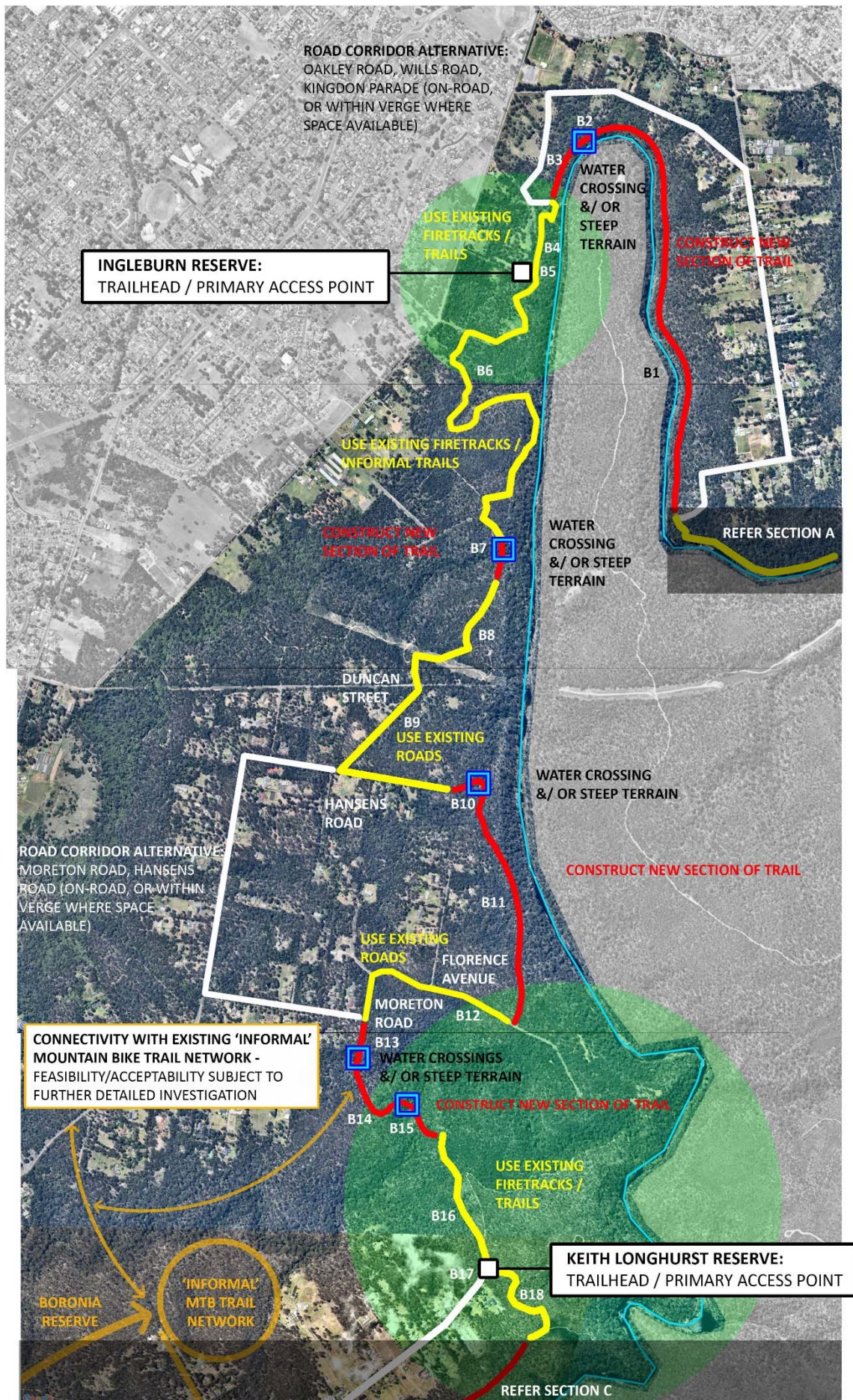
- Trail alignment; using a combination of:
  - Existing prescribed trails (e.g. sections of Old Ford Road Trail, Dharawal National Park 10T Trail)
  - Existing fire tracks/informal trails (e.g. within Ingleburn Reserve)
  - Existing roads (quiet roads that provide direct, relatively short links between existing prescribed/informal trail networks)
  - Newly constructed sections of trail
- Trailheads
  - Primary trail access points
  - Trail support infrastructure (car parking, toilets, shelter, water supply)
- Potential physical barriers/constraints
  - Water crossings &/or steep terrain
  - Road crossings
- Potential alternative alignments using nearby road corridors



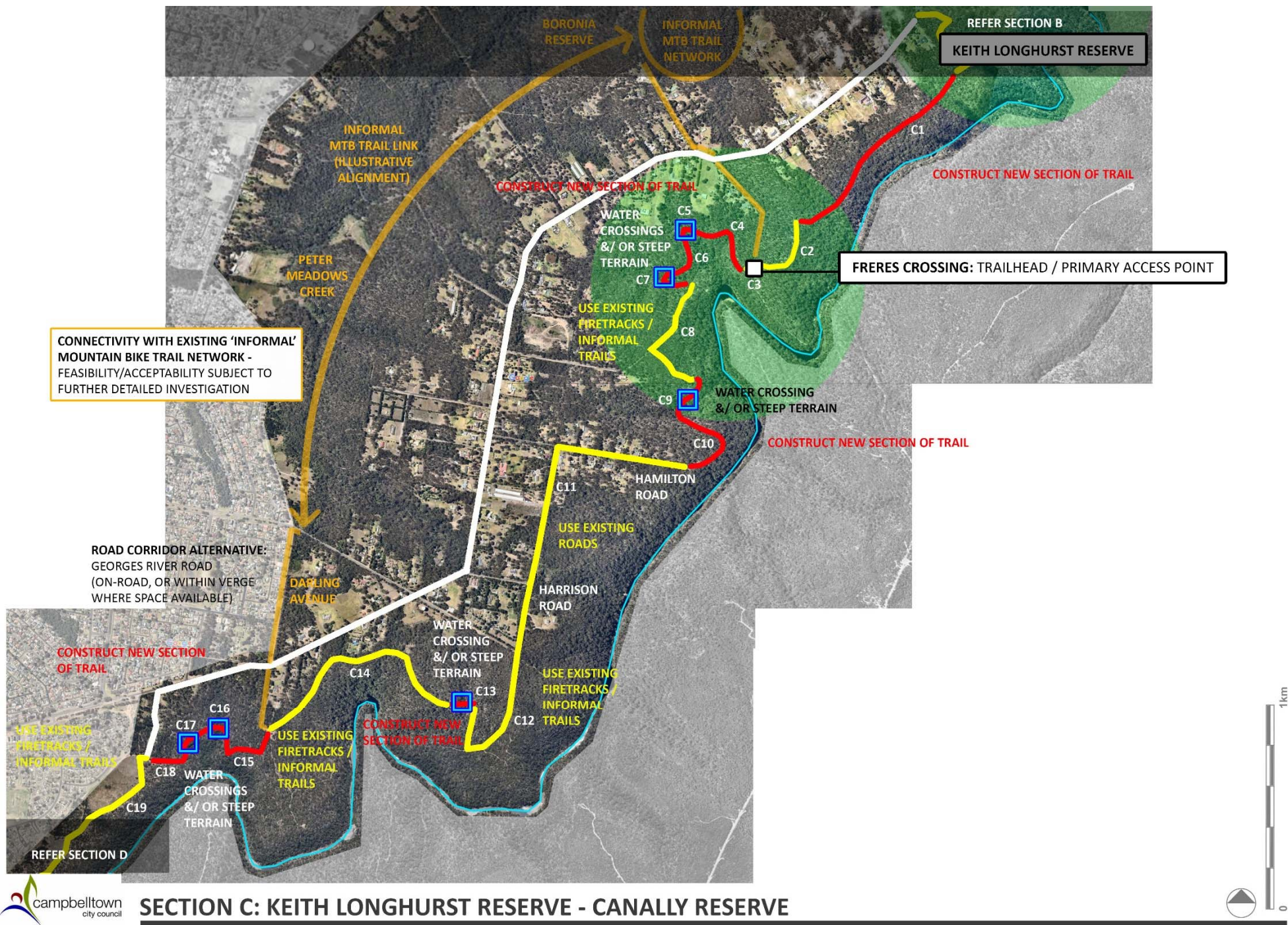


## SECTION A: GLENFIELD - LONG POINT

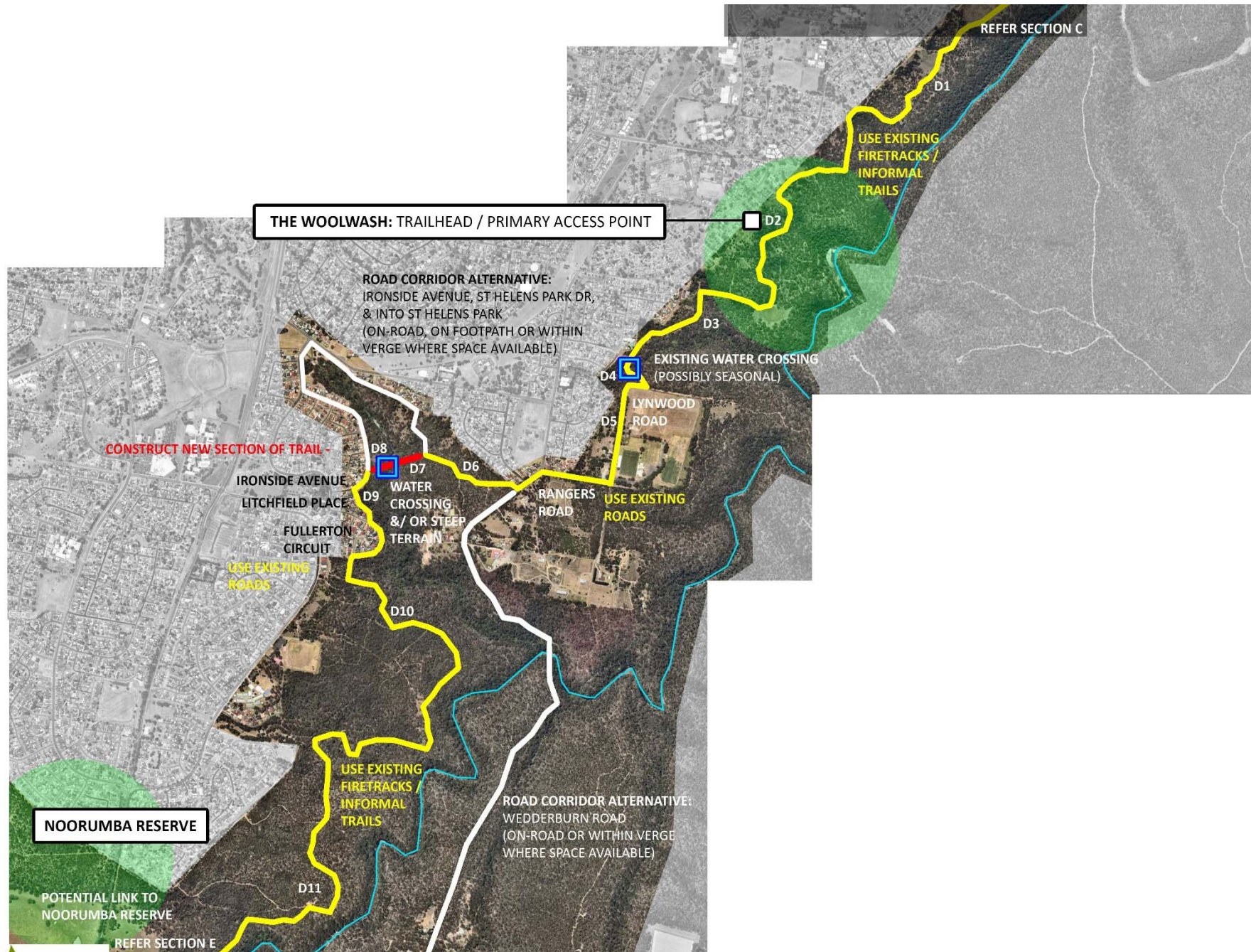




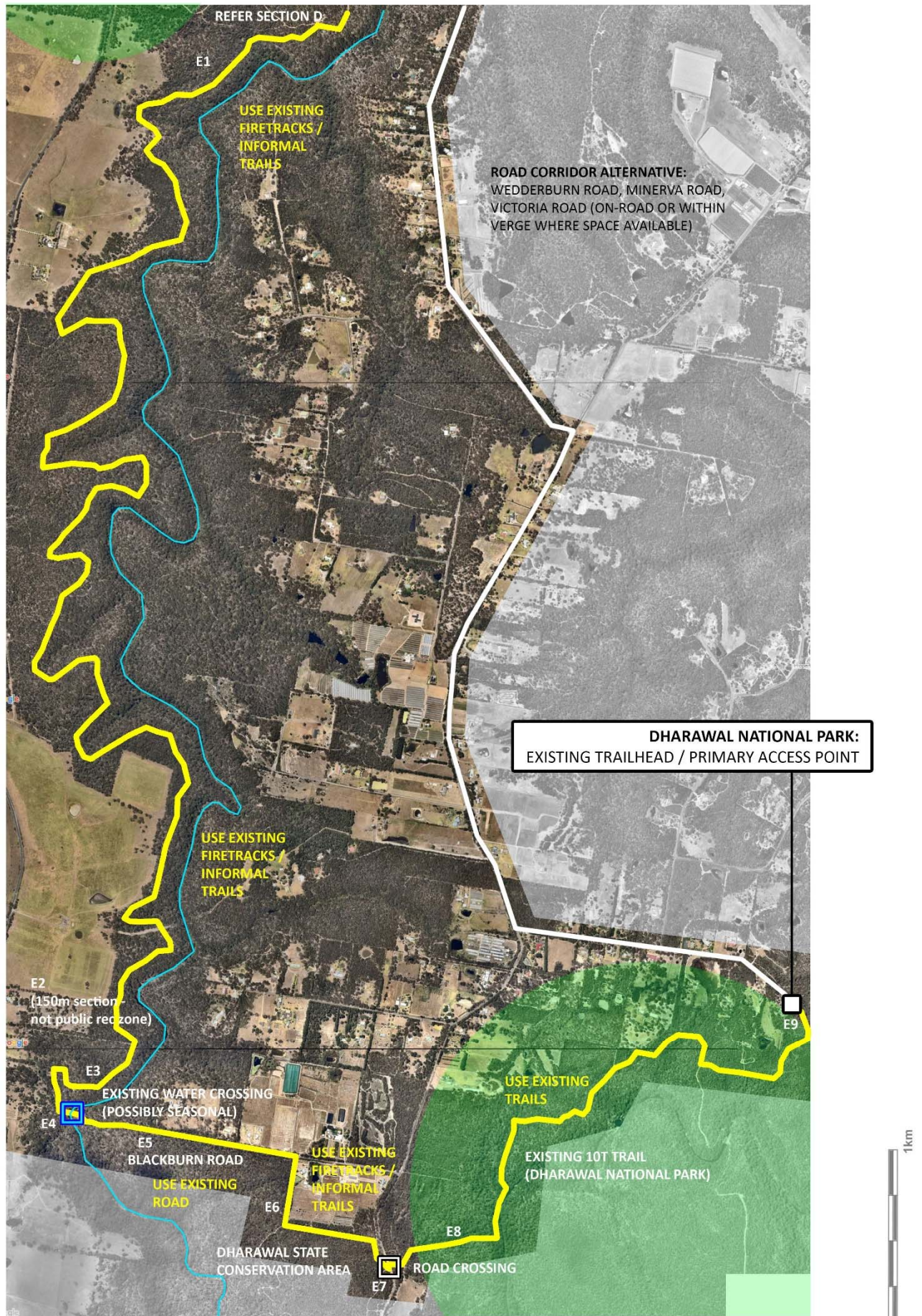












## 8. Potential Risks

The viability of delivering a trail will be dependent on the satisfactory address of multiple and varied issues, challenges and constraints, with each section of trail subject to varying and location specific challenges. The table below identifies common potential risks associated with developing a recreational trail, together with potential approaches to mitigate those risks.

**Table 2: Potential Risks**

Potential Risk		Detail	Responses/ Mitigation
<b>Support of Key Stakeholders</b>	Local Community	Successful delivery of such a project will require the cooperation and collaboration of multiple stakeholders to ensure that the final trail meets the needs/demands of the local community, trail user, environmental and other interest groups	Engage early in the process to clearly articulate intentions, aims and objectives and set appropriate parameters Continue to engage throughout the process and inform of progress made
	Trail User Groups		
	Environmental Groups		
	Land managers/ owners (Local Government, State Government, Private land owner)	The nature of such a trail development project will involve multiple land owners /managers requiring permissions/approvals and agreements to enable access and determine future management and maintenance responsibilities	Secure in-principle support for the project early in the process Secure required approvals/ permits to access land Identify future and ongoing management and maintenance responsibilities
<b>Conservation of Environmental Values</b>	Soil erosion	Destabilisation of soils from construction and operation of trail	Adhere to sustainable trail design and construction principles Realign trail away from susceptible/ sensitive areas Use of stabilisation infrastructure (e.g. rock armouring)
	Soil degradation	Compaction of soils from construction and trail use	
	Habitat fragmentation	Reduced connectivity within habitats & native vegetation corridors	Adhere to sustainable trail design and construction principles Realign trail away from susceptible/ sensitive areas Minimise trail tread widths
	Habitat disturbance	Disturbance of nesting areas from human activity	
	Invasive plants/weeds	Increased entryways for invasive plant introduction	Interpretation/educational signage Increase management levels Removal of invasive plant species Use of hygiene stations at trail entry points
	Riparian vegetation	Disturbance to floodplain vegetation	Adhere to sustainable trail design and construction principles Realign trail away from susceptible/ sensitive areas Minimise requirement for vegetation removal/ disturbance



Potential Risk		Detail	Responses/ Mitigation
	Water management - impermeable surfaces	Reduced natural flood capacity with impermeable trail surfaces	Permeable material used to form trail tread
	Water management - runoff/ waterway pollution	Potential source of pollution of water resources through increased surface water runoff	Adhere to sustainable trail design and construction principles Realign trail away from susceptible/ sensitive areas Incorporate appropriate drainage infrastructure
<b>Conservation of Cultural Heritage Values</b>	Aboriginal	Potential exposure of culturally significant features to vandalism, littering and other unauthorised activities	Work with all key stakeholders to identify significant features As appropriate, realign trail away from susceptible/ sensitive areas or introduce trail infrastructure restricting access to feature, together with interpretation/ educational material Adhere to Crime Prevention Through Environmental Design (CPTED) principles
	European		
<b>Trail Safety / Security</b>	Trail Maintenance	Ongoing management and maintenance of the trail will require address	Adhere to sustainable trail design and construction principles Ensure there is a Trail Management Plan in place Ensure sufficient resourcing for trail maintenance
	Emergency access provision	Emergency services / vehicles will require access at key points along the length of the trail to ensure the safety of trail users and respond to emergency situations as required	Evaluate trail access provision with emergency services to ensure adequate provision Assess mobile phone service coverage Develop Trail User Code of Conduct & Emergency Protocols Clearly articulate information at trailhead signage / main access points
	Bushfire		
	Trail User Conflict	Opportunities to quickly exit the trail will also require consideration	Ensure appropriate infrastructure is in place to inform trail users and road users of crossing points (e.g. warning signage, fences, gates)  Develop Trail User Code of Conduct & Emergency Protocols Implement Maintenance Plan (including periodic hazard inspections) Clearly articulate information at trailhead signage / main access points
	Vehicle Conflict	The trail will cross multiple roads with crossing points requiring careful consideration to ensure the safety of trail and road users	
	Physical Hazards/ Wildlife	The nature of a recreational trail that utilises natural surfaces will inevitably feature sections with uneven surfaces, tree roots, fallen trees etc., together with the presence of wildlife	

Potential Risk		Detail	Responses/ Mitigation
	Water course crossings	The trail will cross multiple watercourses and or sections of steep terrain which will require careful consideration to ensure the safety of trail users	Adhere to sustainable trail design and construction principles Ensure appropriate trail infrastructure is utilised where required (e.g. warning signage, fences, barriers, bridges, boardwalks)
	Steep Terrain		
Funding	Capital Outlay	A project of this scale and magnitude requires significant investment, appropriate forward planning and budgeting	Ensure funding requirements are incorporated into Council's business and capital works plans
	Ongoing Maintenance	Ongoing maintenance costs will need to be addressed	Ensure sufficient resourcing for ongoing trail maintenance
Trail Usage Levels	Under Use	<p>A trail that is not appropriately designed and constructed is not likely to attract trail user groups who are looking for specific, quality and varied trail experiences.</p> <p>Conversely, a trail that becomes too popular and isn't designed to cope with significant numbers of trail users is likely to have negative impacts upon the environment and increase incidences of user conflict / safety issues</p> <p>Given the level of investment required to deliver such a project it is essential that target markets are identified and catered for.</p>	Detailed feasibility assessment to clearly establish target user markets, required experiences and anticipated levels of use to ensure the design and construction of the trail meets need and demand
	Over Use		
Unauthorised Trail Activities	Unauthorised access	Trail access by unauthorised users (e.g. trail bike riders, horse riders)	<p>Control points with infrastructure that restricts access (e.g. fences, gates)</p> <p>Develop Trail User Code of Conduct</p> <p>Clearly articulate information at trailhead signage / main access points</p>
	Unauthorised trail building	Improving access and increasing usage of areas along the Georges River corridor might encourage the development of new, unauthorised trail networks	<p>Provision of a dedicated trail authorised for activities such as walking and cycling can alleviate this, particularly where no such authorised trail exists in the area</p> <p>Clear communication of local environmental sensitivities can raise awareness of the need to conserve protected vegetation and habitats</p>



The above table does not provide an exhaustive list of all the potential risks and corresponding responses/mitigation approaches; however, it begins to articulate a number of the potential risks associated with the development of a recreational trail, which may or may not be applicable to the future development of a Georges River Recreational Trail.

Considerations that are specifically considered further (at a high level) by this report are limited to:

- Land Zoning/Tenure
- Topography/contours/major landform features
- Soil Type
- Presence of Endangered Ecological Communities
- Presence of Aboriginal Heritage Sites
- Presence of European Heritage Sites
- Residential amenity
- Bushfire Risk Rating

The table on the following page addresses each of these key considerations and provides a brief overview, explaining the respective relevance of each consideration to the potential development of a trail (and the data sources used) to initially establish whether or not each individual section of the trail may potentially be affected. Further in depth analysis of each of the identified considerations will be required as part of a detailed feasibility study to enable a full and complete assessment of any potential impacts, and establish the acceptability (or otherwise) of developing a trail between Glenfield and Wedderburn, in part or entirety.

The matrix tables on subsequent pages seek to identify those key challenges/issues in relation to each individual section of trail.

**Table 3: Considerations**

Consideration	Relevance	Information Source/s
<b>Current Status</b>	Some sections of the potential trail alignment currently exist in a formal or an informal manner, whereas other sections of the alignment do not exist and would require design and construction. Existing tracks should be considered for use (where sustainable and where sympathetic to the type of trail experience being sought) to minimise costs and any potential adverse impacts of trail development.	<ul style="list-style-type: none"> <li>• Strava Labs Global Heat Mapping<sup>1</sup></li> <li>• Council GIS layer: Fire tracks</li> <li>• Near Map satellite imagery</li> </ul>
<b>Estimated length</b>	Estimated trail length is an indicator for potential costs of design, construction, maintenance and management of a trail, as well as potential environmental impacts and targeted trail users	<ul style="list-style-type: none"> <li>• Google Earth measurement</li> </ul>
<b>Estimated average slope</b>	Estimated trail slope is one indicator for the sustainability of the trail (steeper slopes are generally more susceptible to erosion), the level of infrastructure required for a sustainable alignment (such as soil stabilisation infrastructure) and the difficulty of the trail.	<ul style="list-style-type: none"> <li>• Google Earth measurement</li> </ul>
<b>Land zone/s</b>	State government land zoning defines which activities/land uses are intended for each zone. Most of the potential alignment is within Public Recreation zoning (RE1) while some sections of the proposed trail fall within the following zones: <ul style="list-style-type: none"> <li>• Infrastructure – Future Transport Corridor (SP2-FTC)</li> <li>• Environmental Management (E3)</li> <li>• Rural Landscape (RU2)</li> <li>• National Parks and Natures Reserves (E1)</li> <li>• Low Density Residential (R2)</li> </ul>	<ul style="list-style-type: none"> <li>• NSW Government Planning and Environment, Planning Viewer: Land Zoning<sup>2</sup> (Planning Portal).</li> </ul>
<b>Land ownership</b>	Land ownership will be an important factor in gaining support and appropriate permissions for progression of the trail project. Land owners are likely to include: <ul style="list-style-type: none"> <li>• Campbelltown City Council</li> <li>• NSW Department of Planning</li> <li>• Sydney Water Corporation</li> <li>• NSW Department of Lands</li> <li>• NSW National Parks and Wildlife Service (NPWS)</li> <li>• Private land owners</li> </ul>	<ul style="list-style-type: none"> <li>• Council GIS layer: Land tenure</li> </ul>
<b>Endangered Ecological Communities (EEC)</b>	The Threatened Species Conservation Act 1995 (NSW) and the Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth) provide the legislation for protecting endangered ecological communities (EEC). EECs are subject to government conservation programs. The following EECs listed under the NSW Threatened Species Conservation Act have been identified within the study area: <ul style="list-style-type: none"> <li>• Shale/Sandstone Transition Forest (SSTF)</li> <li>• Cumberland Plain Woodland in the Sydney Basin Bioregion (CPW)</li> </ul> Where EECs exist, sensitive and sustainable trail design, construction and management is of paramount importance to mitigate against potential negative environmental impacts.	<ul style="list-style-type: none"> <li>• Council GIS layer: Vegetation</li> <li>• Office of the Environment and Heritage, Native Vegetation of the Sydney Metropolitan Area. Version 3, 2016 (GIS Dataset)</li> </ul>
<b>Primary land parcel</b>	Each section of the potential trail alignment traverses multiple land parcels. The largest of these land parcels have been identified as the 'primary land parcel'. The land parcel's Deposited Plan (DP) number and lot number has been used to conduct a high level search for Indigenous heritage.	<ul style="list-style-type: none"> <li>• NSW Digital Cadastral Database<sup>3</sup></li> </ul>
<b>Identified Aboriginal heritage</b>	Indigenous heritage can add value to a trail experience, however a trail might also cause harm to sensitive heritage sites, particularly where existing access to a site is currently restricted. A high-level search of the AHIMS Web Service has been conducted for the "primary land parcels" along the potential alignment. The results of the high-level search identify how many identified Aboriginal significant sites are within each of the "primary land parcels" investigated. Further details of these sites, and other Indigenous significant sites, are accessible through the AHIMS 'extensive search' process (requiring payment and 10 working days for a standard search).	<ul style="list-style-type: none"> <li>• Office of the Environment and Heritage, Aboriginal Heritage Information Management System (AHIMS) Web Service</li> </ul>
<b>European heritage</b>	European heritage can add value to a trail experience, however a trail might also cause harm to sensitive heritage sites. Old Ford Road at Keith Longhurst Reserve is the only European heritage place within the study area which is listed under the NSW Heritage Act. This site is the attraction/point of interest of an existing trail. Other sites of heritage interest within the study area have also been identified (but are not necessarily listed/protected under the Act),	<ul style="list-style-type: none"> <li>• Campbelltown City Council website</li> <li>• NSW Government Planning and Environment, Planning Viewer: Heritage<sup>4</sup> (Planning Portal)</li> </ul>
<b>Soil substrate</b>	Appropriate and sustainable soil types need to be considered in determining trail alignment. The types of soil substrate identified within the study area are shale, sandstone and alluvial. Alluvial subsoils are generally highly permeable with high drainage capacity while shale subsoils are less permeable with low drainage capacity. Depending on the type of substrate, sections of the trail may require infrastructure for soil stabilisation and/or surface water redirection to reduce the risk of erosion and/or topsoil runoff.	<ul style="list-style-type: none"> <li>• Office of the Environment and Heritage, Native Vegetation of the Sydney Metropolitan Area Version 3, 2016 (GIS Dataset)</li> </ul>
<b>Residential amenity</b>	While most sections of the potential alignment are within bushland reserves, there are some sections near residential housing and private property boundaries. It is necessary to identify where trail development may affect these properties to identify, consult and mitigate potential negative impacts to residents.	<ul style="list-style-type: none"> <li>• Desktop assessment via Google Earth and Near Map imagery</li> </ul>
<b>Bushfire risk</b>	Almost all sections of the potential trail alignment are with 'Bushfire Prone Areas' and are identified as Category 1 (highest bushfire risk). To mitigate the risks of bushfires it is important that safety precautions are taken and appropriate control measures are implemented. All developments in "Bushfire Prone Areas" have a legal obligation to consider bushfire risks and meet the requirements of <i>Planning for Bush Fire Protection 2006</i> and <i>AS3959 – 2009</i> .	<ul style="list-style-type: none"> <li>• NSW Government Planning and Environment, Planning Viewer: Bushfire Prone Areas<sup>5</sup></li> </ul>

**Table 4: Trail Analysis Matrix – Section A**

Ref.	Description	Status	Estimated Length	Estimated average Slope	Land Zone/s	Land Owner	Endangered Ecological Communities	Primary Land Parcel	Identified Aboriginal Heritage	European Heritage	Soil substrate			Residential Amenity	Bushfire Risk
			m	%			NSW listed	DP number & Lot number			Shale	Sand-stone	Alluvium		Category (1 = Highest)
A1	Blinman Oval: Trailhead/Primary access point	Not Existing	-	-	RE1	Council		635486_1234	No					X	
A2	Blinman Oval to Harrow Rd	Existing - roads	100	6.2	RE1	Council		635486_1234	No		X			X	
A3	Road crossing: Harrow Rd					Council (road reserve)									
A4	Harrow Rd to Goodenough St	Existing - park & roadside	500	7.3	RE1, R2	Council		1086015_2	No		X			X	
A5	Goodenough St to Belmont Rd	Existing – informal track	1000	2.6	RE1	Private & Dept. of Planning	CPW	736881_3	1 site		X				2
A6	Belmont St to Bunbury Curran Ck	Existing - informal track	400	5.9	RE1	Dept. of Planning		549984_2	No		X				1 & 2
A7	Bunbury Curran Creek northern side	Not Existing	600	8.9	RE1	Dept. of Planning		372250_B	No				X		1 & 2
A8	Water crossing: Bunbury Curran Creek	Not Existing			RE1	Dept. of Planning		717823_104	No		X		X		1
A9	[A8] to Victoria Rd	Not Existing	500	9.9	SP2-FTC	Dept. of Planning		960_9	No			X			1
A10	Road crossing: Victoria Rd					Council (road reserve)						X			1
A11	South from Victoria Road	Existing - informal track	1100	4.8	RE1	Sydney Water Corp. & Council		586064_2	No			X			1
A12	Water crossing and/or steep terrain	Not existing			RE1	Council		1391_22	No			X			1
A13	[A12] to Simmo's Beach	Existing track (part formal, part informal)	800	9.7	RE1	Council	SSTF	N/A				X			1
A14	Simmo's Beach: Trailhead/Primary access point	Existing infrastructure			RE1	Council		1391_1	No	Simmo's Beach		X			1
A15	Simmo's Beach to Knotwood Ave	Existing track (part formal, part informal)	1,100	7.6	RE1	Council and Dept. of Planning		N/A				X			1
A16	Knotwood Ave to Long Point	Existing informal tracks	3,100	8.5	RE1	Dept. of Planning & 2 Private Properties		2321_11	No			X			1

**Table 5: Trail Analysis Matrix – Section B**

Ref.	Description	Status	Estimated Length	Average Slope	Land Zone/s	Land Owner	Endangered Ecological Communities	Primary Land Parcel	Identified Aboriginal Heritage	European Heritage	Soil substrate			Residential Amenity	Bushfire Risk
			m	%			NSW listed	DP number & Lot number			Shale	Sand-stone	Alluvium		Category (1 = Highest)
B1	Long Point to [B2]	Not existing	2,000	9.7	RE1	Dept. of Planning		789134_31	No			X		X	1
B2	Water crossing and/or steep terrain	Not existing			RE1	Dept. of Planning		89657_D	No			X			1
B3	[B2] to Ingleburn Reserve	Existing informal track	700	6.2	RE1	Dept. of Planning	CPW, SSTF	986738_1	No		X				1
B4	Ingleburn Reserve: Trailhead/Primary access point	Existing infrastructure			RE1	Council		1870_15	No	Ingleburn Weir	X	X			1
B5	Ingleburn Reserve to Myrtle Creek [B6]	Existing informal track	1,800	10.1	RE1	Council & Dept. of Planning	CPW, SSTF	746371_54	No			X			1
B6	Water crossing: Myrtle Creek	Not existing	200	9.3	RE1	Dept. of Planning		236809_23	No		X	X			1
B7	Myrtle Creek [B6] to Derby Street	Existing fire track	700	9.4	RE1	Dept. of Planning	SSTF	8989_25	No		X	X			1
B8	Derby Street to water crossing [B9]	Existing roads	1,000	6.0	RE1	Council (road reserve)		N/A				X			1
B9	Water crossing and/or steep terrain	Not existing			RE1	Dept. of Planning		223987_10	1 site			X			1
B10	Water crossing [B9] to Florence Avenue	Not existing	1,300	11.3	RE1	Council, Dept. of Planning & 2 Private Properties		10092_10	No			X			1
B11	Florence Avenue to Moreton Road	Existing roads	900	4.7	RE1	Council (road reserve)		N/A			X	X			1
B12	Moreton Road to Peter Meadows Creek [B14]	Not existing	600	14.9	RE1	Council & Dept. of Planning		556918_5	No			X			1
B13	Water crossing and/or steep terrain	Not existing			RE1	Dept. of Planning		N/A				X			1
B14	Water crossing: Peter Meadows Creek	Not existing			RE1	Dept. of Planning		556918_5	No			X			1
B15	Peter Meadows Creek to Keith Longhurst Reserve	Existing fire track	900	10.4	RE1	Dept. of Lands		1060081_7007	4 sites	Old Ford Road		X			1
B16	Keith Longhurst Reserve: Trailhead/Primary access point	Existing infrastructure			RE1	Dept. of Lands		1060081_7007	As above	The Basin		X			1
B17	South to Keith Longhurst Reserve Boundary	Existing fire track	600	5.0	RE1	Dept. of Lands		1060081_7007	As above			X			1



**Table 6: Trail Analysis Matrix – Section C**

Ref.	Description	Status	Estimated Length	Average Slope	Land Zone/s	Land Owner	Endangered Ecological Communities	Primary Land Parcel	Identified Aboriginal Heritage	European Heritage	Soil substrate			Residential Amenity	Bushfire Risk
			m	%			NSW listed	DP number & Lot number			Shale	Sand-stone	Alluvium		Category (1 = Highest)
C1	Keith Longhurst Reserve to Frere's Crossing (north) existing track	Not existing	1,300	9.0	RE1	Dept. of Planning & 1 Private Property		590712_24	1 site			X		X	1
C2	Frere's Crossing (north) existing track to Trailhead	Existing fire track	400	4.9	RE1	Dept. of Planning		752062_175	No			X			1
C3	Frere's Crossing: Trailhead/Primary access point	Existing infrastructure			RE1	Dept. of Planning		N/A		Frere's Crossing		X			1
C4	Frere's Crossing to water crossing [C5]	Not existing	500	10.6	RE1	Dept. of Planning		578433_51	No			X			1
C5	Water crossing and/or steep terrain	Not existing			RE1	Dept. of Planning		578433_51	No			X			1
C6	Water crossing [C5] to water crossing [C7]	Not existing	400	15.9	RE1	Dept. of Planning		562028_5	No			X			1
C7	Water crossing and/or steep terrain	Not existing			RE1	Dept. of Lands		752062_202	No			X			1
C8	Water crossing [C7] to Riverview Rd Fire Track	Not existing	400	21.9	RE1	Dept. of Lands		752062_202	No			X			1
C9	Riverview Rd Fire Track to Frere's Crossing Reserve Boundary	Existing fire track	700	9.4	RE1	Dept. of Lands		752062_202	No			X			1
C10	Water crossing and/or steep terrain	Not existing			RE1	Dept. of Planning		221499_2	No			X			1
C11	Frere's Crossing Reserve Boundary to Hamilton Road	Not existing	800	10.1	RE1	Dept. of Planning		221499_5	No			X			1
C12	Hamilton Rd to Smith St via Harrison Rd	Existing roads	2,000	4.7	RE1	Council (road reserve)		N/A				X			1
C13	Harrison Road to Water Crossing [C14]	Existing fire track	700	12.3	RE1	Dept. of Lands		1058964_7015	1 site			X			1
C14	Water crossing and/or steep terrain	Not existing			RE1	Dept. of Planning		558299_11	No			X			1
C15	Water crossing [C14] to Canally Reserve boundary	Existing fire track	1,400	5.2	RE1	Dept. of Planning		588746_1	No			X			1
C16	Canally Reserve boundary to water crossing [C17]	Not existing	500	19.1	RE1	Dept. of Planning & Dept. of Lands		752062_274	No			X			1
C17	Water crossing and/or steep terrain	Not existing			RE1	Dept. of Planning		546504_2	No			X			1
C18	Water crossing [C17] to Peppin Park	Not existing	600	20.9	RE1	Dept. of Planning & Dept. of Lands		752062_274	No						1
C19	Water crossing and/or steep terrain	Not existing			RE1	Council (road reserve)		N/A							1
C20	Peppin Park to (east) to Peppin Park (south west)	Existing fire track	500	9.6	RE1	Dept. of Planning		250130_1033	No						1

**Table 7: Trail Analysis Matrix – Section D**

Ref.	Description	Status	Estimated Length	Average Slope	Land Zone/s	Land Owner	Endangered Ecological Communities	Primary Land Parcel	Identified Aboriginal Heritage	European Heritage	Soil substrate			Residential Amenity	Bushfire Risk
			m	%			NSW listed	DP number & Lot number			Shale	Sand-stone	Alluvium		Category (1 = Highest)
D1	Peppin Park to The Woolwash Trailhead	Existing fire track	1,700	5.9	RE1	Dept. of Planning		250130_1034	No			X		X	1
D2	The Woolwash: Trailhead/Primary access point	Existing			RE1	Council (road reserve)		N/A		The Woolwash		X			1
D3	The Woolwash Trailhead to Derwin Road	Existing fire track	1,400	6.2	RE1	Dept. of Planning & Council		584080_2	No			X			1
D4	Water crossing (possibly seasonal)	Existing			RE1	Council	SSTF	837241_1092	No			X			1
D5	Derwin Road to Wedderburn Road	Existing roads	900	4.3	RE1, SP2-FTC	Council (road reserve)		N/A			X	X			1
D6	Wedderburn Road to Spring Creek	Existing fire track	600	6.0	E3, RU2	Dept. of Planning & Dept. of Lands	SSTF	1028262_7010	No		X	X			1
D7	Water crossing: Spring Creek	Not existing			RU2	Dept. of Planning & Council	SSTF	1025751_1113	1 site		X	X			1
D8	Spring Creek crossing to Fullerton Circuit	Existing fire track	1200	4.6	RU2, RE1	Council	SSTF	752062_298	No		X	X			1
D9	Fullarton Circuit to Crown Reserve	Existing fire track	1,400	6.2	RE1, SP2-FTC, RU2	Council, 2 Private Properties & Dept. of Lands	SSTF	810721_5022	No		X	X			1
D10	Crown Reserve to [D11]	Existing fire track	800	6.3	RE1, SP2-FTC	Dept. of Planning & Dept. of Lands	SSTF	739889_4	No		X	X			1
D11	Water Crossing: Mansfield Creek	Not existing			SP2-FTC	Dept. of Planning	SSTF	739889_4	No		X	X			1
D12	Mansfield Creek to Noorumba Reserve Link	Existing fire track	1,500	9.5	SP2-FTC, E3	Dept. of Planning	SSTF	603674_1	No		X	X			1

Table 8: Trail Analysis Matrix – Section E

Ref.	Description	Status	Estimated Length	Average Slope	Land Zone/s	Land Owner	Endangered Ecological Communities	Primary Land Parcel	Identified Aboriginal Heritage	European Heritage	Soil substrate			Residential Amenity	Bushfire Risk
			m	%			NSW listed	DP number & Lot number			Shale	Sandstone	Alluvium		Category (1 = Highest)
E1	Noorumba Reserve Link to land across river from Wedderburn Christian Campsite	Existing fire track	7,600	5.0	RE1	Dept. of Planning	SSTF	629720_2	1 site		X	X			1
E2	Land across river from Wedderburn Christian Campsite	Existing fire track	500	15.4	E3	Dept. of Planning	SSTF	629720_2	1 site		X	X			1
E3	Land across river from Wedderburn Christian Campsite to Blackburn Road	Existing fire track	1,000	5.9	RE1	1 Private Property & Dept. of Planning	SSTF	632721_2	No		X	X			1
E4	Water crossing	Existing (possibly seasonal)			RE1	Dept. of Planning	SSTF	629716_3	1 site		X	X			1
E5	Blackburn Road	Existing road	1,000	7.8	E3	Council (road reserve)		N/A				X			1
E6	Blackburn Road to Lysaghts Road	Existing informal track	800	3.7	E3	NPWS		717475_620	No			X			1
E7	Road crossing: Lysaghts Road					Council (road reserve)						X			1
E8	Lysaghts Road to Dharawal National Park	Existing 10T walking trail	3,000	5.9	E1	Dept. of Lands & NPWS		12665_20	2 sites			X			1
E9	Dharawal National Park: Trailhead/Primary Access Point	Existing	7,600		E1	NPWS		1123360_300	1 site			X			1
Total estimated length = 1,393															

## 9. Approvals/Permissions

The project development may require the securing of a range of approvals/permits under relating to various legislation. The legislation/policies outlined below may require further actions to gain approval for successful and timely progression of the project.

**Table 9: Legislation/Policies**

	Legislation/Policy	Purpose	Process	Regulator
Commonwealth	Environment Protection & Biodiversity Conservation Act 1999	Protects matters of national environmental significance (MNES) such as: <ul style="list-style-type: none"> <li>• Koala</li> <li>• Endangered Ecological Communities</li> </ul>	Disturbance to MNES require approval	Department of the Environment and Energy
	Water Management Act 2000	Regulates the destruction of trees on land susceptible to erosion or land that is otherwise environmentally sensitive.	Public authorities are exempt and do not need to obtain a controlled activity approval <sup>6</sup>	Department of Primary Industries Office of Water
New South Wales	Environmental Planning and Assessment Act 1979 (Part 5)	Ensures public authorities fully consider environmental issues when undertaking or approving activities that do not require development consent.	If activities are likely to significantly affect the environment, a Review of Environmental Factors (REF) will need to be submitted	Department of Planning and Environment
	State Environmental Planning Policy (Infrastructure) 2007	Assists the NSW Government, local councils and the communities they support by simplifying the process for providing infrastructure	Assessment of permissibility of the activity in the project's land use zones is required	Department of Planning and Environment
	State Environmental Planning Policy No. 44: Koala Habitat Protection	Encourages the proper conservation and management of areas of natural vegetation that provide habitat for koalas, to ensure a permanent free-living population over their present range and reverse the current trend of population decline	Assessment of core koala habitat is required through the Review of Environmental Factors (REF)	Department of Planning and Environment
	State Environmental Planning Policy No. 19—Bushland in Urban Areas	The general aim of this Policy is to protect and preserve bushland within the urban areas	Approval required through the Review of Environmental Factors (REF)	Department of Planning and Environment
	National Parks and Wildlife Act 1974 (Part 6)	Provides for the conservation of objects, places and features that are of significance to Aboriginal people.	Aboriginal Heritage Impact Permit/s may be required	Office of Environment & Heritage
	Council Approval	Ensure Council support for the project	Formal Council endorsement for the project, including associated infrastructure (e.g. trailhead signage)	Campbelltown City Council
LGA				



The development of the Georges River Recreational Trail will likely require consultation with the following stakeholders:

- NSW Fire Service
- NSW Department of Primary Industries – Crown Lands Division and Office of Water
- NSW National Parks and Wildlife Service
- NSW Office of Environment and Heritage
- NSW Department of Planning
- Sydney Water Corporation
- Department of Lands
- Various land owners and/or managers
- Roads and Traffic Authority
- Aboriginal representatives
- Community organisations/committees
- Local community members
- Additional stakeholders identified during the detailed feasibility study stage

# 10. Construction & Maintenance Cost Estimates

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High level cost estimate ranges have been developed, broadly based on an estimated cost per unit or cost per linear metre basis. These cost ranges are based on a minimal level of information presently available (constrained by the scope limitations of this report), and, as such, are highly subjective, intended only to provide a broad indication of possible costs involved in developing a trail of this nature.

Cost estimate ranges for construction and ongoing maintenance are broadly considered, with high level allowances made for the following items:

- Upgrade existing sections of fire tracks/prescribed trails/informal trails
  - Trail tread upgrade (surfacing/re-surfacing, widening, edge stabilisation)
  - Additional drainage infrastructure
  - Localised vegetation removal/pruning (to ensure appropriate trail tread width/height clearance, visibility)
  - Localised re-routes / new sections of trail to avoid unsustainable alignments
- Construct new sections of trail
  - Set out alignment
  - Protection of existing, retained vegetation
  - vegetation clearance/pruning (to ensure appropriate trail tread width clearance, visibility)
  - groundworks/earthworks
  - tread surfacing/edge stabilisation
  - drainage infrastructure
- Trailhead infrastructure
  - Signage to include mapping, trail classification, code of conduct, authorised user information, safety/management information, environmental sensitivities, interpretation material
  - Car parking (formalisation/upgrades to existing surfaces or new)
  - Toilet facilities (upgrades to existing facilities or new facilities)
- Trail signage
  - Waymarkers
  - Warning signage (road crossings, bridges, entering reserves, proximity to water, steep sections)
- Controlled entry points (prevention of unauthorised trail access)
  - Gates/barriers/fences
- Water crossings
  - Bridge/culvert construction (upgrade of existing arrangement or new)
  - warning signage
- Road crossings
  - vehicle user warning signs,
  - trail user warning signs,
  - road line markings
  - modifications to drop kerbs etc

The table below summarises high level cost estimate ranges.

**Table 10 Cost Estimate Ranges**

Component	Unit / Approx. Distance	Cost Estimate Range	
		Lower	Higher
Upgrade existing sections of fire tracks/ prescribed trails/ informal trails (trail tread)	52km	\$260k	\$520k
Construct new sections of trail (trail tread)	10km	\$400k	\$700k
Trailhead infrastructure	6no.	\$540k	\$720k
Trail signage (wayfinding/warning)	62km	\$30k	\$50k
Controlled entry points	30no.	\$300k	\$600k
Water/steep terrain crossings	20no.	\$300k	\$600k
Road crossings	10no.	\$50k	\$100k
Subtotals		\$1,880,000	\$3,290,000
Design/Construction Contingencies (10%)		\$188,000	\$329,000
<b>Totals</b>		<b>\$2,068,000</b>	<b>\$3,619,000</b>

\* Cost estimate ranges do not allow for price escalation.

Costs associated with the following items (some of which are identified on the mapping) are not considered within these broad cost estimate ranges:

- Additional upgrade work/infrastructure that may be required associated with any road corridor alternative option (e.g. verge clearing/pruning, verge surface upgrades, road widening, footpath upgrading, safety/warning signage)
- Connectivity with and formalisation of 'informal' mountain bike trail network that exists within the vicinity of Boronia Reserve and Peter Meadows Creek
- Potential link into Noorumba Reserve
- Re-vegetation / vegetation removal mitigation
- Additional trail related infrastructure that may be required:
  - safety barriers/fencing
  - Phytophthora dieback mitigation infrastructure
  - 'discretionary' support infrastructure (e.g. additional seating, shelters, BBQs, interpretation signage)

With any future trail alignment undoubtedly crossing multiple land tenure boundaries, responsibilities for capital outlay and ongoing maintenance costs will be dependent on future cross-agency negotiations and management responsibility agreements.

Costs associated with the next stages of trail planning and development (pre-construction) are considered separately in the next section of this report.

### Annual Maintenance Costs

Broad/high-level maintenance costs are estimated at 1.5% of the overall cost of the trail development, applicable on an annual basis. This would equate to between approximately **\$31,020** and **\$54,285** per annum.

# 11. Next Steps

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## 11.1 Preliminary Consultation

Using this report as a resource that succinctly explains the overall trail concept, it is recommended that preliminary consultation be undertaken, led by Council staff, with select key stakeholders to gauge levels of in-principle support for further feasibility investigations. These stakeholders might include:

- Relevant Council officers
- Relevant Government agencies
- Relevant land owners/managers (multiple)

Preliminary consultation may also involve a media release that outlines the trail concept to gauge initial levels of support from members of the community.

Subject to the establishment of sufficient in-principle support for the project, and in line with the trail planning & development process (section 2), subsequent steps would then involve undertaking a detailed feasibility study and trail development plan.

This short report addresses a number of the items listed below at a high level, and provides a basis upon which to build the detailed case for a recreational trail, with further detailed analysis required to fully demonstrate the feasibility of its implementation.

## 11.2 Detailed Feasibility Study

A Detailed Feasibility Study process should address the following:

- Context & background to the project
- Purpose of the trail
- Recreational trail trends
- Demographic analysis
- Need for the trail (supply and demand)
- Target markets and trail user group requirements
- Complementary tourism opportunities/points of interest
- Strategic planning policy context
- Connectivity with the local and wider/regional trail network
- Partnerships between trail users, trail user groups, private and public agencies
- Community engagement and levels of support
- Key stakeholder engagement
- Flora & fauna desktop assessment
- Preliminary cultural heritage study
- On-ground assessments/surveys
- Concept design parameters
- Potential trail sharing/user conflict issues
- Trail infrastructure requirements
  - Trailheads (car parking, toilets, shelters, signage)
  - Signage (wayfinding, directional, interpretive, management/warning)
  - Trail tread surface treatments (existing trail upgrades, new trail construction/vegetation clearance)
  - Water crossings (bridges, culverts)



- Road crossings (signage, line markings)
- Barriers (safety fencing)
- Furniture (seating, shelters, bins)
- Emergency access requirements
- Interpretation material concepts
- Management & maintenance planning
- Costs & funding models
- Funding opportunities
- Study Findings
- Periodic reporting/presentations to Project Team/Council & key stakeholders
- Securing of in-principle permissions/approvals

***Estimated cost range to undertake a Detailed Feasibility Study: \$40-50k + GST***

It is recommended that all in-principle permissions/approvals are secured prior to advancement onto the detail design/documentation phase. Alternative trail alignment options may need to be considered as part of the detailed feasibility study where permissions/approvals are deemed unlikely to be secured, or where they cannot be secured without further detailed survey work.

## 11.3 Trail Development Plan / Detail Design & Documentation

A Trail Development Plan should include the following:

- Identify final route on detailed topographical map
- Targeted flora & fauna surveys
- Determine trail classification(s)
- Determine trail infrastructure requirements
- Ground truthing of final trail alignment
- Ensure all safety issues are addressed
- Construction drawings/specifications
- Construction methodology
- Refined cost/quantity estimates
- Staged Implementation Plan
- Periodic reporting/presentations to Project Team/Council & key stakeholders

***Estimated cost range to undertake a Trail Development Plan: \$40-50k + GST***

Additional items that might also be deemed necessary include:

- Aboriginal Cultural Heritage Management Plan
- Registered Aboriginal Parties fees
- Environmental management plans (flora/vegetation, fauna, weed/disease spread)
- Specialist engineering design of bridges/water crossing
- Cost benefit analysis / business case
- Management & maintenance plan
- Risk management plan
- Trail user code of conduct
- Promotion & marketing plan
- Signage style guide
- Interpretation material content plan
- Land use license/access agreement

## 12. Estimated Timeframes

At this early stage in the trail planning process it is difficult to accurately predict the time it will take to implement any trail development project.

A phased approach to the design and implementation of the trail might also be considered, potentially dependent on the ability to secure sufficient funding. Phasing the development of the trail may affect overall timeframes.

The chart below attempts to provide an indication of timeframes required to undertake a project of this nature and magnitude.

**Table 11: Indicative Timeframes**

Stage		2017					2018					2019														
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
1	Project brief development & appointment of consultant	■	■	■																						
2	Detail Feasibility Study (including stakeholder consultation)			■	■	■	■	■	■	■	■															
3	Trail Development Plan - Detail Design/Documentation									■	■	■	■	■	■											
4	(Approvals/Permissions process)								■	■	■	■	■	■	■											
5	Secure funding								■	■	■	■	■	■	■											
6	Construction tender process & appointment of contractor													■	■	■	■									
7	Construction																■	■	■	■	■	■	■	■	■	■
8	Official Trail Opening																								■	

## 13. Potential Funding Sources

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Potential external funding sources are available through federal and state government programs which could support the development of the Georges River Bush Cycle Track. In addition to government funding programs, private and commercial sector opportunities may also be available. Government funding programs continually change so it is recommended that the relevant websites are frequently reviewed.

### 13.1 Australian Government Funding Initiatives

- Department of Infrastructure and Regional Development  
<http://investment.infrastructure.gov.au/funding/>
- Department of the Environment and Energy  
<http://www.environment.gov.au/about-us/grants-funding>
- Business  
<https://www.business.gov.au/Assistance>
- Australian Sports Commission  
<http://www.ausport.gov.au/supporting/funding/about>

A current example of a funding program through the Department of Infrastructure and Regional Development is the *Community Development Grants Programme*. This is an initiative to support the construction and upgrade of facilities to provide long term improvements in social and economic viability of local communities. \$936.8 million has been committed by the Australian Government to fund projects ranging from \$2,000 to \$35 million over six years to 2019-20. Details are available at <http://investment.infrastructure.gov.au/funding/communitydevelopment/>.

### 13.2 State Government Funding Initiatives

- Greater Sydney Commission  
<http://www.greater.sydney/grants-and-awards>
- Roads and Maritime Services  
<http://www.rms.nsw.gov.au/projects/walking-cycling/>
- Office of Sport and Recreation  
<https://sportandrecreation.nsw.gov.au/clubs/grants>
- Community Building Partnership  
<http://www.communitybuildingpartnership.nsw.gov.au/>

A current example of a funding program through the Greater Sydney Commission is the *Metropolitan Greenspace Program* which supports local councils to improve open spaces, parks, bushland, natural areas, waterway corridors and tree-lined streetscapes in a network that connects residential areas to centres, public transport, jobs and recreation. Approximately \$3 million is available each year, with funds awarded to councils on a matching dollar-for-dollar basis. Details are available at <http://www.greater.sydney/metropolitan-greenspace-program>.

### 13.3 Commercial and Private Sector Funding

Commercial and private sector funding is often to assist with project 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.

## 13.4 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. Details are available at [www.philanthropy.org.au](http://www.philanthropy.org.au).

## 13.5 Other trails resourcing mechanisms

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



# References

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<sup>1</sup> Strava Labs. 2017. *Global Heat Map*. Available at <http://labs.strava.com/heatmap/#10/-569.53812/-34.47203/blue/both> [Accessed 10 January 2017]

<sup>2</sup> NSW Government Planning and Environment, Planning Viewer: Land Zoning. 2016. Currency date: 11 March 2016. Available at [https://www.planningportal.nsw.gov.au/find-a-property/council-layer/1500/Land\\_Zoning](https://www.planningportal.nsw.gov.au/find-a-property/council-layer/1500/Land_Zoning) [Accessed 16 January 2017]

<sup>3</sup> NSW Government Digital Cadastral Database. 2016. Available at <http://data.nsw.gov.au/data/dataset/lpi-web-services-nsw-cadastre> [Accessed 16 January 2017]

<sup>4</sup> NSW Government Planning and Environment, Planning Viewer: Heritage. Published: 11 December 2015. [https://www.planningportal.nsw.gov.au/find-a-property/property/3332723\\_Harrison\\_Road\\_7015\\_Kentlyn\\_DP1058964](https://www.planningportal.nsw.gov.au/find-a-property/property/3332723_Harrison_Road_7015_Kentlyn_DP1058964) [Accessed 17 January 2017]

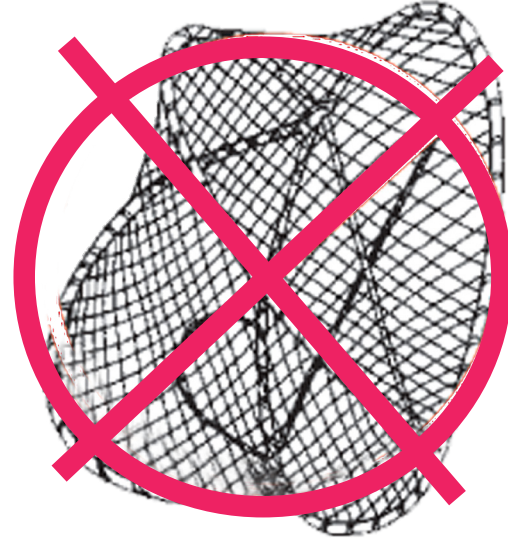
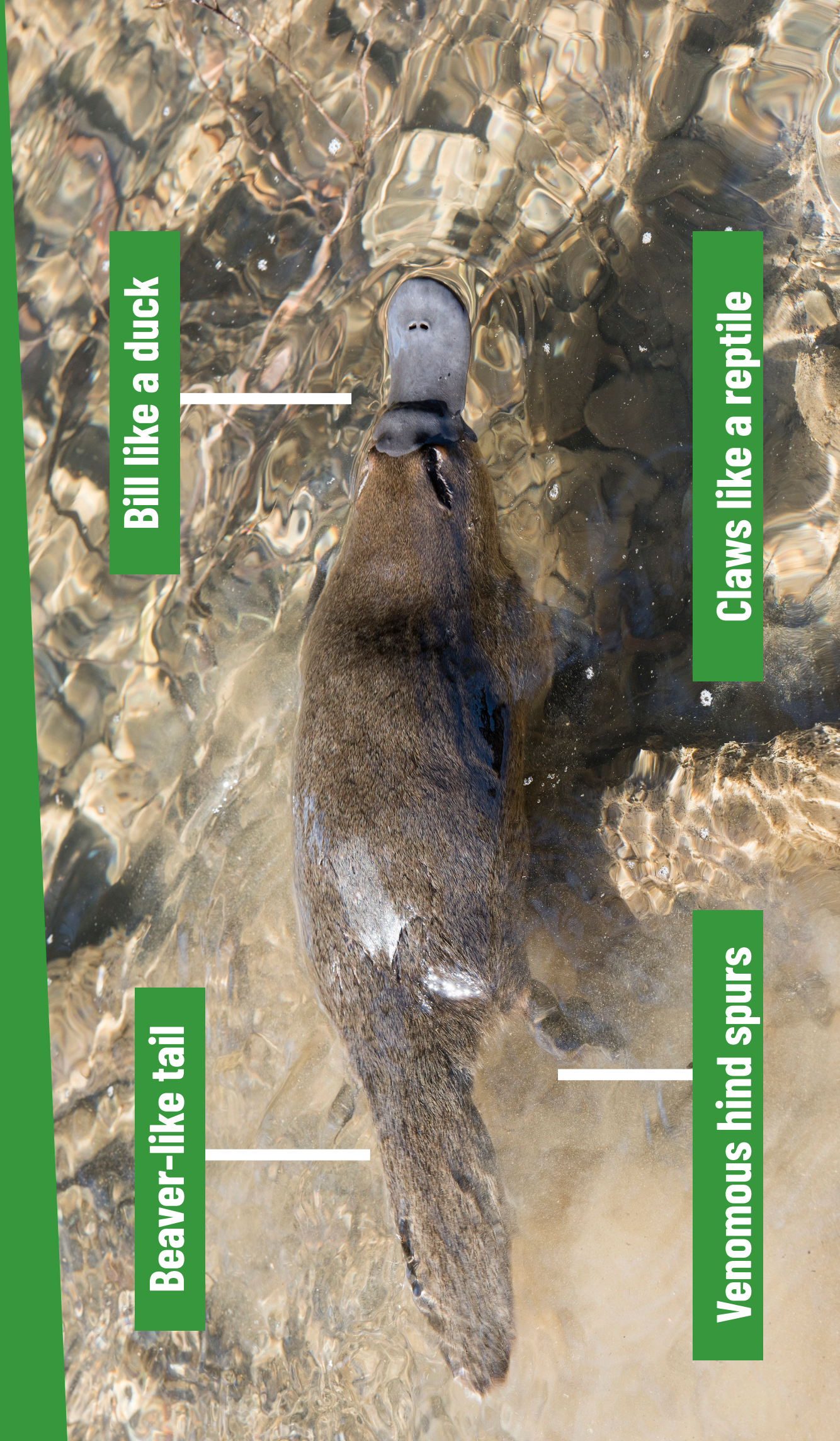
<sup>5</sup> NSW Government Planning and Environment, Planning Viewer: Bushfire Prone Areas. 2014. Published: 6 June 2014. Available at [https://www.planningportal.nsw.gov.au/find-a-property/council-layer/1500/Land\\_Zoning](https://www.planningportal.nsw.gov.au/find-a-property/council-layer/1500/Land_Zoning) [Accessed 16 January 2017]

<sup>6</sup> Department of Primary Industries – Office of Water. 2012. *Controlled activity exemptions on waterfront land*. Available at <http://www.water.nsw.gov.au/water-licensing/approvals/controlled-activity> [Accessed 19 January 2017]

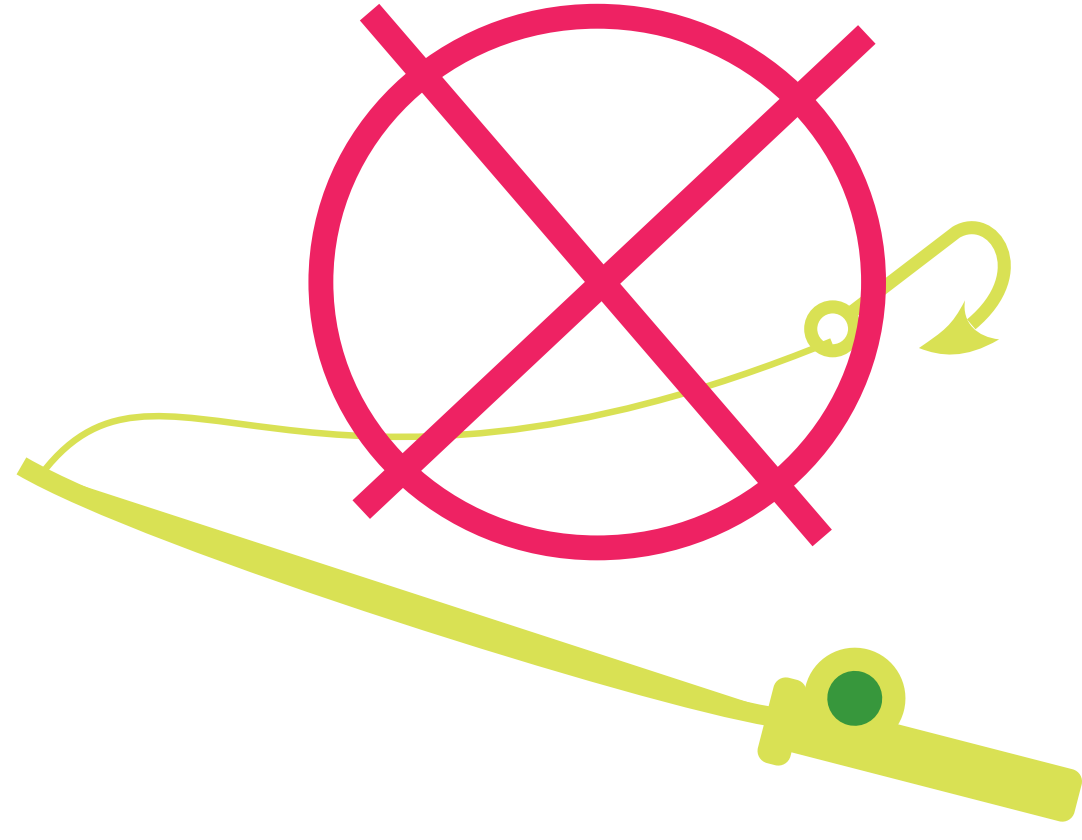


# PROTECTING OUR PLATYPUS

We have platypus in the Georges River, they are a protected species.  
The best time to spot platypus is dusk and dawn, look for a 'V' shape in the water.



Opera house traps are illegal and can drown wildlife.



Don't leave your line unattended.

## Do your part to help us protect platypus:

- Collect and dispose of all unwanted fishing line
- Don't use lead tackle, it is poisonous to wildlife
- For dog and wildlife safety please keep dog's on a leash
- Use the tangler bins provided to dispose of unwanted fishing line.

Opera house yabby traps are illegal to use in the river. On the spot fines of \$500 applies to the use of Opera house yabby traps with maximum penalties of \$22,000 and 6 months imprisonment.

To report a platypus sighting please scan the QR code.



Australian Government



CAMPBELLTOWN

## REPORT WILDLIFE IN TROUBLE TO

**WIRES:** 0466 318 688 **SYDNEY WILDLIFE:** 9413 4300

Report illegal fishing or trapping, 4645 4601.





# DUMP FISHING LINE & TACKLE HERE



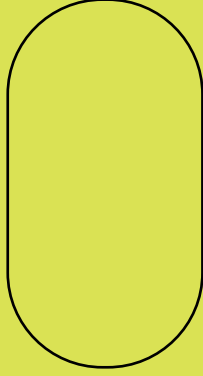
Disposing of unwanted  
fishing line safely  
will prevent wildlife  
entanglement.



Report wildlife in trouble  
**WIRES** 0466 318 688

**SYDNEY WILDLIFE** 9413 4300  
Report full bins to council  
**COUNCIL** (02) 4645 4000

**NO OTHER RUBBISH  
UNWANTED FISHING  
TACKLE ONLY**



**DUMP FISHING LINE  
& TACKLE HERE**



Get help for entangled  
or hooked wildlife

Report wildlife in trouble  
**WIRES** 0466 318 688  
**SYDNEY WILDLIFE** 9413 4300

Report full bins to council  
**COUNCIL** (02) 4645 4000



# DUMP FISHING LINE & TACKLE HERE



Disposing of unwanted  
fishing line safely  
will prevent wildlife  
entanglement.



Report wildlife in trouble  
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