

MOUNT GLEN ROCK MASTER PLAN

BACKGROUND RESEARCH REPORT



OCTOBER 2021



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Otium Planning Group acknowledges the Australian Aboriginal, Torres Strait and South Sea Islander peoples of this nation. We acknowledge the traditional custodians of the lands on which our company is located and where we conduct our business. We pay our respects to ancestors and to Elders, past, present and emerging. Otium is committed to national reconciliation and respect for indigenous peoples' unique cultural and spiritual relationships to the land, waters and seas, and their rich contribution to society.

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1. Introduction

In October 2020 Council purchased 127.1 hectares of the western face of Mount Glen Rock, located adjacent to the township of Esk in the Somerset Region. This adjoins an additional 81 ha of reserve land for which Council is trustee, making up a total site area of 208.1 ha. Council has aspirations to develop the site as a multi-use adventure park providing walking and mountain bike trail opportunities, rock climbing and abseiling, and other nature-based recreation close to the Esk township and the iconic Brisbane Valley Rail Trail.

1.1 Project Objectives and Scope

The purpose of this study is to develop a master plan for the future development of Mount Glen Rock as a multi-use adventure park. Based on detailed research and analysis, the study explores the spatial and functional concepts for a number of adventure and nature-based recreation opportunities at Mount Glen Rock.

1.2 Study Approach

The project involves a four-stage project methodology as detailed below. *This report provides a summary of the background research and site analysis.*



1.3 About Mount Glen Rock

Mount Glen Rock provides an iconic and stunning backdrop to the township of Esk and is a significant feature of the Somerset region's natural landscape. The unique mountainous rock formation contributes to the character and identity of the town and is highly valued by the Esk community and the broader Somerset region.

With a peak measuring 314m of elevation, Mount Glen Rock offers views towards Somerset Dam in the northeast and over the township of Esk and the Brisbane Valley in the south-west. The site is heavily vegetated, with a variety of native vegetation evident, and is of predominantly rocky terrain. Several fire breaks run through the site.

While undeveloped, the site is accessible from a number of points as follows:

- Land to the north of Francis Terrace across Sandy Creek (adjacent to the sewage treatment plant)
- Hassall Street road reserve, the planned location for a bridge across Sandy Creek, provides access from the main town centre via a 500m walk.

- Middle Street provides access to the southeast corner of the site, connecting with the planned Sandy Creek trail.
- Council green waste site in the south eastern corner of the reserve accessed via the Brisbane Valley Highway
- Lions Park is located adjacent to the south western corner of the site, separated by Sandy Creek and provides a connection to the site along the Horse Bypass.

Australia's longest recreation rail trail, the Brisbane Valley Rail Trail is located within 300m of the site. The Esk Town Horse Bypass provides a link from the Brisbane Valley Rail Trail at the Esk Showgrounds to Lions Park, with potential access to the Mount Glen Rock site via Lions Park, Middle Street and Hassall Street.

Council has been progressing a number of developments complementary to the development of Mount Glen Rock as a multi-use adventure park:

- The "Sandy Creek Fire Break Trail" is planned for development along the existing fire break running adjacent to Sandy Creek along the western base of Mount Glen Rock. The trail will be an 850m, two-way, multi-purpose, low-grade trail extending from Francis Terrace (near the Esk Sewage Treatment Plant) to Middle Street.
- The "Summit Trail" is planned to run from the Sandy Creek Fire Break Trail to the highest peak of Mount Glen Rock. This would be a 3km, two-way, medium difficulty walking trail utilising natural terrain and materials found on site and incorporating a small clearing/ lookout at the summit.
- The Hassall Street Bridge will provide a pedestrian bridge link across Sandy Creek from the Hassall Street road reserve linking with the Sandy Creek Fire Break Trail.

2. Strategic Framework and Vision for Mount Glen Rock

Council's Corporate Plan outlines the direction for the communities of the Somerset region and Council decision-making, and sets the strategic direction for projects like the Mount Glen Rock Master Plan.

The vision for the region is:

“The Somerset region, with its unique identity and proud heritage, is vibrant, cohesive and connective, providing the foundations for a prosperous rural lifestyle.”

The Corporate Plan sets out five themes and associated strategies. Those particularly relevant to master planning and future management of Mount Glen Rock include:

- **Natural Somerset** – a place where the natural environment, scenic beauty and rural lifestyle are valued and protected.
- **Vibrant Somerset** – an integrated and welcoming place with something for everyone.
- **Prosperous Somerset** – a place that embraces economic opportunities.
- **Well Planned Somerset** – a place where planning and design look to the future.

Council has established a vision and mission for the Mount Glen Rock project. This will help guide the master planning and ensure alignment with Council's aspirations and corporate direction, and the community's aspirations for the site.

The vision for Mount Glen Rock is:

“Deliver a uniquely Somerset outdoor recreational experience, that connects the natural environment and scenic beauty of the site to a vibrant local community.”

The rationale for the vision makes the following key points about Mount Glen Rock:

- Iconic topography and views over Esk and the Brisbane valley counteract geographical constraints of the site
- The site is compatible with mountain biking, hiking, rock climbing and abseiling
- The site is home to koalas and the brush-tailed wallaby
- The site is conveniently located adjacent to the Esk township and within 30 minutes of Lake Somerset, Lake Wivenhoe and the Brisbane River
- For the short to medium term the maximum mountain bike trail capacity of the site is estimated at 50kms.

The Mission for Mount Glen Rock is:

“Inspire Somerset residents and visitors to experience, admire and benefit from Mount Glen Rock.”

The rationale for the mission explains that the site will be:

- Developed for the benefit of the region; recreationally, socially and economically
- A significant recreational asset and source of pride for Esk and the region
- Developed to its safest extent and not at the expense of its natural assets
- A trigger for enhanced business and economic opportunities
- Developed sustainably with opportunities sought to offset expenditure through traditional and innovative revenue streams.

3. Catchment Profile

Located approximately 100 kilometres northwest of the Brisbane CBD, in the Ipswich West Moreton Region, the Somerset Region's authentic country lifestyle, and strong agricultural, environmental, heritage and tourism values, make it a popular place to live and visit.

The region is primarily rural based and takes in the Brisbane and Stanley river catchments, including Lake Wivenhoe and Lake Somerset. With an abundance of natural features and expansive wilderness, a diversity of walking trails, and the Brisbane Valley Rail Trail all located within close proximity to Brisbane, the region is an ideal location for outdoor recreation enthusiasts and a major drawcard for walkers, trail runners, horse-riders and cyclists.

3.1 Local and Regional Population

When developed, Mount Glen Rock will attract visitors locally from Esk and surrounds, regionally from the Somerset Region and further field from the Ipswich West Moreton Region, South East Queensland and interstate. For the purpose of this catchment review, analysis of Esk, the Somerset Region, and Ipswich West Moreton has been undertaken.

3.1.1 Esk

- As at June 2016 there were 5,158 people living in Esk (SA2) ¹
- The median age was 52
- The area has an older age profile with people aged over 65 years making up 27.1% of the population and children aged 0-14 making up only 15.8% of the population
- Of the families in Esk 28.9% were couples with children and 56.0% were couples without children
- The population of the Esk is projected to increase to 7,059 by 2041².

3.1.2 Somerset Region

- As at June 2016 there were 24,597 people living in the Somerset Region³
- The 2020 Estimated Resident Population for the Somerset Region is 26,695⁴
- The median age was 43
- Aboriginal and Torres Strait Islander people made up 3.7% of the population
- Children aged 0 to 14 made up 20.5% of the population and people aged 65 and older make up 18.6% of the population
- Older adults aged over 65 years made up 18.6% of the population
- Of the families in the Somerset Region, 38.4% were couples with children
- The population of the Somerset Region is project to increase to 39,017 by 2041 with the largest increase expected to be in the 60 years and older age group².

¹ Australian Bureau of Statistics, 2016. Esk (SA2). 2016 Census QuickStats.

² Queensland Government population projections, 2018 edition; Australian Bureau of Statistics, *Population by age and sex, regions of Australia*, 2016 (Cat no. 3235.0)

³ Australian Bureau of Statistics, 2016. Somerset (R). 2016 Census QuickStats.

⁴ ProfileID material compiled and presented by .id, the population experts. www.id.com.au. This material is a derivative of ABS Data www.abs.gov.au

3.1.3 Ipswich West Moreton Region

The Regional Development Australia Ipswich West Moreton Region comprises the local government areas of Somerset Regional Council, Lockyer Valley Regional Council, Scenic Rim Regional Council and the City of Ipswich.

- The 2020 Estimated Resident Population for the Ipswich West Moreton Region is 342,016⁴
- The median age was 35
- The region has a relatively youthful population with 22.3% of people aged 0 to 14
- Of the families in the region, 31.3% were couples with children
- The population of the Ipswich West Moreton Region is projected to increase to 722,499 by 2041².

3.2 Visitation

Tourism is a key driver bringing visitors and business into the Somerset Region. Tourism Research Australia collect and analyse data around visitors to the region, providing information on where they come from, how long they stay and how much they spend. The most recent Local Government Profile was completed in 2019, which provides a good pre-Covid indication of visitation. For the Somerset Local Government Area that data indicates that in 2019:

- Somerset had a total of 623,000 visitors in total, comprised of:
 - 3,000 international visitors
 - 162,000 domestic overnight visitors, and
 - 458,000 domestic day trip visitors.
- 323,000 visitors were holiday-makers, while 217,000 were visiting friends or relatives
- These visitors spend approximately \$106 per trip, with approximately \$66 million spent within the broader Somerset region
- There were 199 tourism related businesses in operation, providing job opportunities to the local population.

Further detail on tourism in the Somerset region is provided at Section 8.

4. Literature Review

A review of literature relevant to the Master Planning of Mount Glen Rock was undertaken. The key outcomes for consideration are summarised below.

- Mount Glen Rock is an iconic, unique and important feature to the Somerset Region and Esk, which is conveniently located within 30 minutes of Lake Somerset, Lake Wivenhoe and the Brisbane River.
- Previous planning has identified that a number of recreation activities may be possible for development at Mount Glen Rock, including mountain biking, orienteering, walking, abseiling, rock climbing, picnicking and ecotourism and scenic amenity related activities.
- Council has committed to the development of the Sandy Creek Fire Break Trail and the Hassall Street Bridge, which will enhance recreation opportunities and access to the Mount Glen Rock site.
- Council has identified the potential future development of the Highland Trail, which would provide a future connection from Lakeview Park to the town centre and Mount Glen Rock.
- Future expansion of opportunities at Mount Glen Rock, which would enhance the tourism opportunities and social and economic benefits of the resource are limited by surrounding private properties.
- Mount Glen Rock has environmental values and is a known home to koalas and the brush-tailed wallaby. Any future development should not compromise the natural values of the site.
- Economic analysis undertaken by TRC suggests, once developed, Mount Glen Rock would generate a positive return on investment within four years based on a low participation scenario and in just over one year based on a higher participation rate.
- Previous planning has indicated a range of social benefits related to the future development of Mount Glen Rock including health-related, social, cultural and economic benefits.
- The site is already known as a location for rock climbing and abseiling with two potential rock climbing sites and one potential abseiling site identified.
- Previous site investigations identified potential for a locally significant mountain biking product featuring a multi-use trail to a viewpoint for hikers and mountain bikers with potential for a descent trail for mountain bike riders, and noted that a minimum of 30-40km of trail would be required to attract mountain biking enthusiasts to the area.

5. Site Analysis

5.1 Site Description

The study area comprises five land parcels, which make up the total 208.1 Ha of land managed by Council as the Mount Glen Rock Adventure Park.

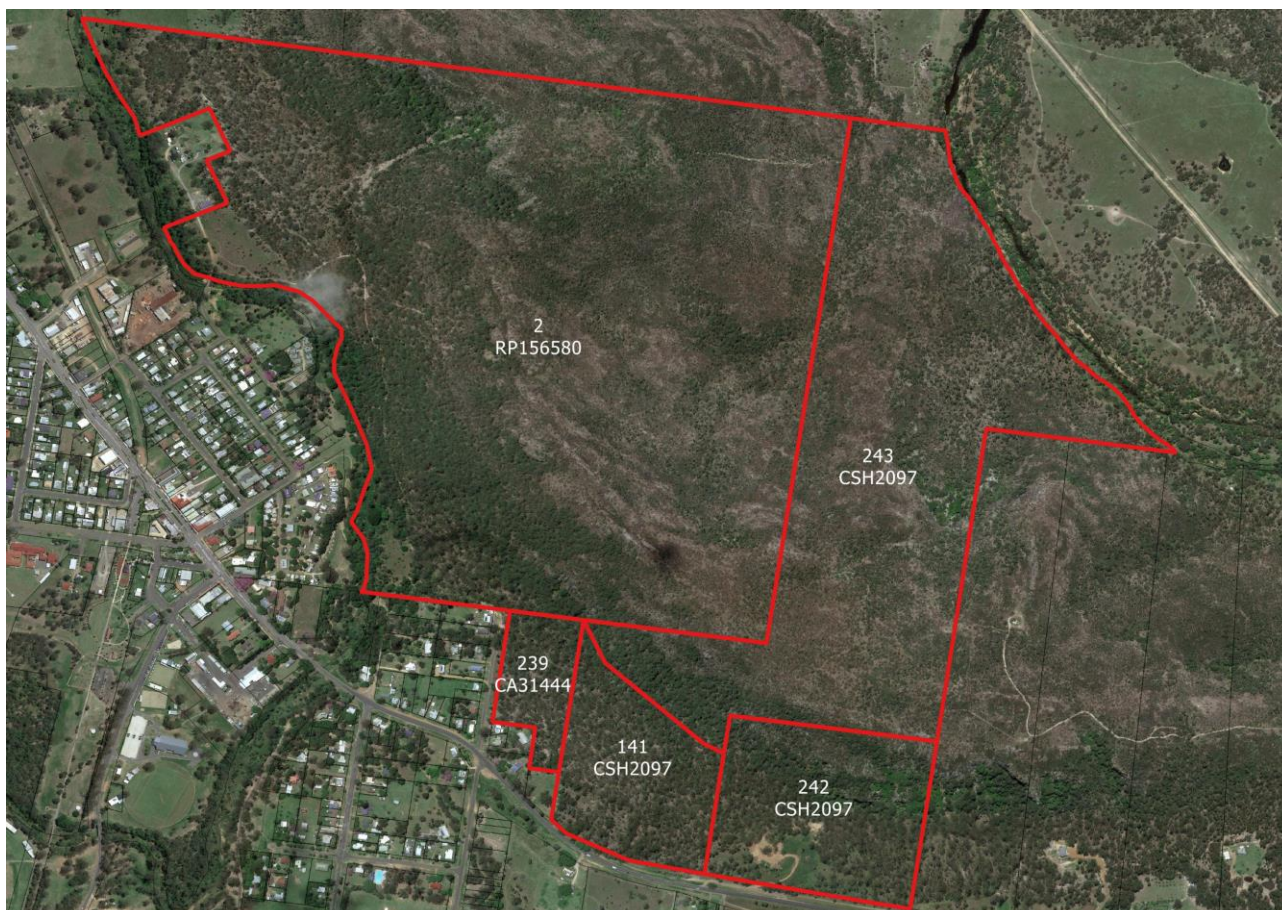


Figure 1: Mount Glen Rock Study Area

5.2 Site Details and Planning Considerations

Site details and relevant planning considerations are documented in the table below.

Table 1: Site Details and Planning Considerations





Lot & Plan Details	Ownership Tenure	Zoning	Land Area (ha)	Applicable Planning Scheme Overlays (or part overlays)
Lot 2 RP156580	Freehold (SRC)	Rural	127 ha	<p>Class A Agricultural Land Biodiversity – Wildlife Habitat and Regulated Vegetation</p> <p>Bushland Koala Habitat (Primary and Secondary Habitat Areas) Bushfire Hazard (Very High, High and Medium Potential Bushfire Intensity)</p>





Lot & Plan Details	Ownership Tenure	Zoning	Land Area (ha)	Applicable Planning Scheme Overlays (or part overlays)
				Catchment Management (Higher Risk Catchment Area (Water Supply Buffer) Flood Hazard (Extreme Flood Hazard and Significant Flood Hazard) High Impact Activities Management Area
Lot 239 CA31444	Reserve	Recreation and Open Space	4 ha (39910m2)	Wildlife Habitat and Regulated Vegetation Bushfire Hazard (Very High, High and Medium Potential Bushfire Intensity) High Impact Activities Management Area
Lot 141 CSH2097	Reserve	Rural	53.4 ha (534200m2)	Class A Agricultural Land (part) Wildlife Habitat and Regulated Vegetation Bushfire Hazard (Very High, High and Medium Potential Bushfire Intensity) High Impact Activities Management Area
Lot 243 CSH2097	Reserve	Rural	10.4 ha (104100m2)	Class A Agricultural Land (part) Wildlife Habitat and Regulated Vegetation Bushfire Hazard (Very High, High and Medium Potential Bushfire Intensity) High Impact Activities Management Area
Lot 242 CSH2097	Reserve	Rural	14 ha (141300m2)	Class A Agricultural Land (part) Wildlife Habitat and Regulated Vegetation Bushfire Hazard (Very High, High and Medium Potential Bushfire Intensity) High Impact Activities Management Area

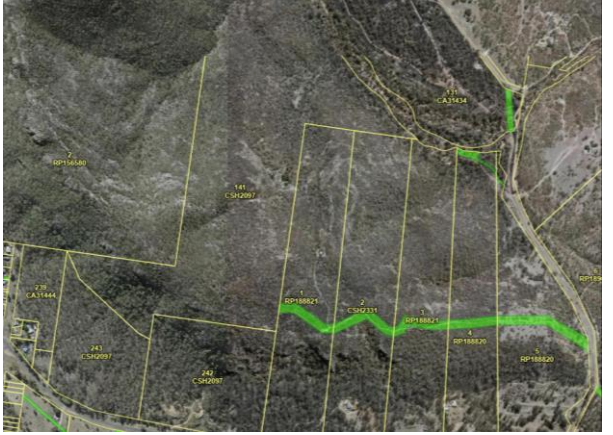


5.3 Key Site Locations/ Access Points and Features

Mount Glen Rock is accessible by some key access points, and within the site are some key features that will be important considerations for the master planning. Key information about these locations and site features is outlined below.

Table 2: Key site locations/ access points and features of Moutnt Glen Rock

Location	Description	Photos
Lions Park	<ul style="list-style-type: none"> Existing local park located on Ipswich Street (Brisbane Valley Highway) adjacent to study area. Includes several picnic settings, small toilet block and partially-sealed carpark/ driveway. Bounded by Sandy Creek (Matter of State Environmental Significance MSES) mapped waterway corridor. Provides access to Mount Glen Rock via the Horse Bypass. 	 <p data-bbox="815 819 1171 846">Figure 2: Lions Park (Photo: World Trail)</p>  <p data-bbox="815 1279 1110 1305">Figure 3: Lions Park (Photo: OPG)</p>
Hassall Street	<ul style="list-style-type: none"> Identified as a potential access to Mount Glen Rock from the Esk township. Connects to Lions Park via the Horse Bypass Trail. A pedestrian bridge is proposed to connect Hassall Street to the Sandy Creek trail. 	 <p data-bbox="815 1666 1260 1693">Figure 4: Hassall Street road reserve (Photo: OPG)</p>  <p data-bbox="815 2004 1430 2047">Figure 5: Hassall Street road reserve (Source: Google Maps Streetview)</p>

Location	Description	Photos
Francis Street Greenfield Site (adjacent to Sewage Treatment Plant)	<ul style="list-style-type: none"> Part of the Mount Glen Rock site and identified as a potential day use area. There is an existing easement over the road access from the Sandy Creek crossing to the wastewater treatment plant. The Sandy Creek trail will terminate at this location. 	 <p data-bbox="815 577 1422 622">Figure 6: Francis Street Greenfield site aerial view (Photo: World Trail)</p>  <p data-bbox="815 1077 1422 1104">Figure 7: Francis Street Greenfield site (Photo: OPG)</p>
Middle Street	<ul style="list-style-type: none"> Provides access to the Mount Glen Rock site on the eastern side of Sandy Creek via an unsealed road. Informally connects to Lions Park via the Horse Bypass Trail crossing of Sandy Creek on Ipswich Street. 	 <p data-bbox="815 1525 1422 1552">Figure 8: Middle Street 'culdesac' (Photo: OPG)</p>
Quarry/ Greenwaste Site (off Brisbane Valley Highway)	<ul style="list-style-type: none"> Unsealed, dirt area provides potential carparking space close to a potential climbing site. Currently used for Council greenwaste disposal. Accessed via unsealed road from the Brisbane Valley Highway. 	 <p data-bbox="815 2002 1422 2029">Figure 9: Greenwaste site (Photo: OPG)</p>

Location	Description	Photos
Easement ERP188821	<ul style="list-style-type: none"> Access easement traversing adjacent properties and providing access to Mount Glen Rock from Falls Road. 	 <p data-bbox="815 674 1430 712">Figure 10: Aerial image of easement (Source: Queensland Globe)</p>
Lookout/ Viewing Sites	<ul style="list-style-type: none"> Several sites exist along the ridge that provide spectacular views. 	 <p data-bbox="815 1171 1430 1220">Figure 11: View overlooking Esk from lookout location above the main saddle (Photo: OPG)</p>  <p data-bbox="815 1673 1430 1718">Figure 12: View to the North from lookout location above the main saddle (Photo: OPG)</p>

5.4 Preliminary Engineering Assessment

A preliminary engineering assessment was undertaken by Bligh Tanner to highlight civil engineering considerations for potential trail head/ access locations to Mount Glen Rock. The assessment considered stormwater and flooding, existing services, and carparking and access, and included Pipeliner Park, the potential site for development of a mountain bike pump track. Relevant information is summarised below. Bligh Tanner highlighted the following recommendations for Council's consideration in future design stages:

- Engagement with Urban Utilities through a Services Advice Notice (pending proposed concept design) to confirm suitability of proposed water/ sewer connections (or reuse of existing connections), external services upgrades and/ or requirements for building over/ adjacent to services.
- Undertake detailed feature survey and services location of proposed trailhead areas to identify existing surface features and details of existing services.
- Commence engagement with Department of Transport and Main Roads in relation to proposed upgrades to existing accesses to state-controlled roads.
- Appropriate flood impact assessment, risk assessment and emergency management plans should be considered as part of future design stages. Additional planning advice and advice from Somerset Regional Council may be required to determine the feasibility of proposed trailhead developments within the Somerset Regional Council Flood Hazard Overlay and applicable planning approval requirements as part of future design stages.

Location	Stormwater and Flooding	Existing Services	Carparking and Access
Lions Park	<ul style="list-style-type: none"> • Existing stormwater outlet located within Lions Park with a maintenance hole adjacent to Ipswich Street. • Outlet is showing signs of scour. • Existing stormwater should be considered in future designs and the outlet made good to suit proposed layout with appropriate outlet scour protection. • Impacted by flood hazard overlay mapping, with the lower area of the site significantly inundated in a 1% AEP event. • Proposed trailhead infrastructure should be located in the higher parts of the site. • Appropriate flood impact assessment, risk assessment and emergency management plans should be considered 	<ul style="list-style-type: none"> • Existing water and sewer infrastructure is located in proximity to the site. • Connections to Lions Park are unknown. • Further engagement with Urban Utilities should be undertaken to confirm the suitability of any proposed connections and requirements. • Overhead electrical and NBN services are located in proximity to the park. 	<ul style="list-style-type: none"> • Existing gravel driveway and informal carparking. • Formalisation of the driveway and carparking would be required as part of trailhead works, with consideration needed to steep grades. • Upgrades to access off Ipswich Street will require approval from DTMR. • Detailed sight line assessment should be undertaken as part of detailed design. • The Horse Bypass Trail provides an alternative connection from cyclists and pedestrians to Pipeliner Park and Hassall Street.

Location	Stormwater and Flooding	Existing Services	Carparking and Access
	<p>as part of future design stages.</p> <ul style="list-style-type: none"> Additional planning advice and SRC advice may be required to determine the feasibility of proposed trailhead developments within the SRC Flood Hazard Overlay and applicable planning approval requirements. 		
Hassall Street	<ul style="list-style-type: none"> Site currently has a stormwater channel which drains to Sandy Creek. The outlet is showing signs of scour. Consideration of appropriate bank stabilisation works within Sandy Creek may be required as part of propped bridge/ trailhead works. Impacted by Flood Hazard Overlay. Appropriate flood impact assessment, risk assessment and emergency management plans should be considered as part of future design stages. Advice may be required from SRC to determine feasibility of proposed trailhead developments within the Flood Hazard Overlay and applicable planning approvals required. 	<p>Existing infrastructure in proximity to the Hassall Street bridge location includes:</p> <ul style="list-style-type: none"> Sewer maintenance hole VC gravity sewer Water reticulation main. 	<ul style="list-style-type: none"> There is currently no general vehicle access past the corner of Hassall St and Russell St. There is limited available space for new on-street carparking on Hassall St or Russell St.
Francis Street Greenfield Site (adjacent to Sewage Treatment Plant)	<ul style="list-style-type: none"> Impacted by Flood Hazard Overlay mapping. Appropriate flood impact assessment, risk assessment and emergency management plans should be considered 	<ul style="list-style-type: none"> Urban Utilities water, sewer and recycled water assets are present in the vicinity of the site, including: <ul style="list-style-type: none"> Recycled water pressure main Water pressure main 	<ul style="list-style-type: none"> Accessible via Francis Terrace along a single-lane sealed road. Single-lane bridge crossing over Sandy Creek. Significant available space for new carparking if required subject to

Location	Stormwater and Flooding	Existing Services	Carparking and Access
	<p>as part of future design stages.</p> <ul style="list-style-type: none"> Additional planning advice may be required from SRC to determine feasibility of proposed developments within the Flood Hazard Overlay and applicable planning approval requirements. 	<ul style="list-style-type: none"> VC sewer gravity main Sewer maintenance hole Further engagement with Urban Utilities should be undertaken as part of future design stages to confirm the suitability of any proposed connections and requirements in relation to building over/ adjacent to the services. 	<p>confirmation of extent of clearing permitted within several environmental overlays impacting the site.</p>

5.5 Preliminary Ecological Assessment

A preliminary desktop assessment of ecological values was undertaken by Trend Ecology to inform the site visit. Relevant maps are provided at Appendix 2: Ecological Maps. Relevant ecological values identified and the key considerations related to master planning are summarised below:

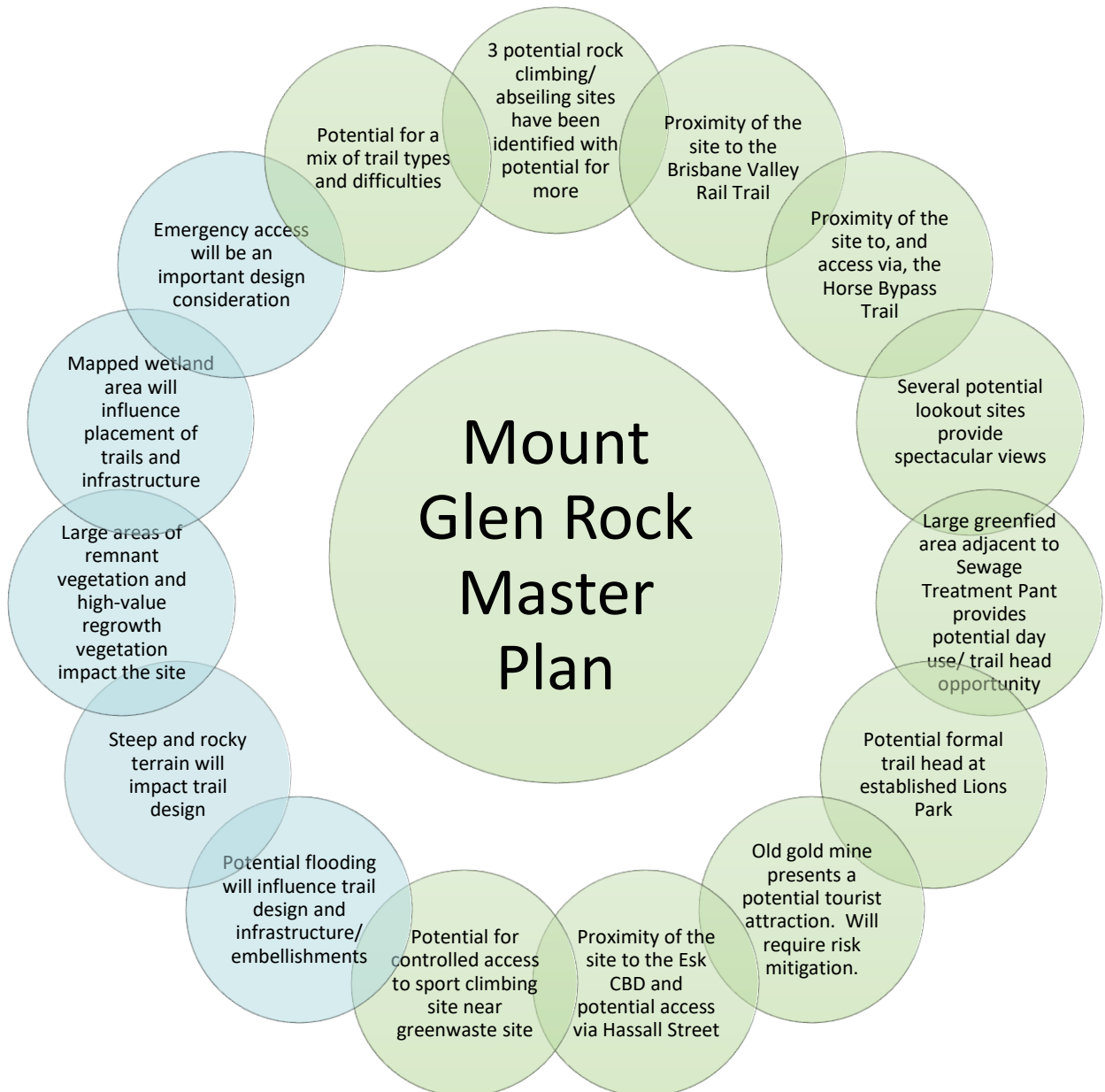
Table 3: Ecological Values and Preliminary Considerations for Master Planning

Ecological Value	Key Considerations for Master Planning
Regulated Vegetation	<p>The site contains areas of:</p> <ul style="list-style-type: none"> Category B (Remnant vegetation) Category C (High-value regrowth vegetation) Category X (Exempt clearing work on Freehold, Indigenous and Leasehold land) <p>Avoid placing trails in Category C (light blue areas) completely.</p> <p>Trails can be located in:</p> <ul style="list-style-type: none"> Category X (white) – no environmental approvals required Category B (dark blue) areas – will trigger Environmental Approvals under the State Assessment and Referral Agency (SARA) and Somerset Region Planning Scheme (Biodiversity Overlay).
Wetlands	<p>To gain approval through SARA trails need to be:</p> <ul style="list-style-type: none"> Located 100m from the defining bank of a wetland; or If unable to be located 100m away, be located 10m from the defining bank and not be more than 10m wide. <p>Trails cannot cross the mapped wetlands, only track alongside, otherwise an offset will be required for any clearing that does not meet the above conditions.</p>
Watercourses (protected under the <i>Vegetation Management Act 1999</i>)	<p>To gain approval through SARA trails should be:</p> <ul style="list-style-type: none"> At least 10m from mapped watercourses; or If they do need to cross the watercourse, they must be less than 10m wide. <p>Trails cannot track alongside these watercourses (within 10m) otherwise an offset will be required for any clearing that does occur within this distance.</p>
Watercourses (protected under the <i>Water Act 2000</i>)	<p>Activities in these areas, such as destroying vegetation, excavating or placing fill, require a Riverine Protection Permit and will require an assessment against State Code 10: Taking and Interfering with Water to be referred to SARA.</p>
Native Vegetation	<p>Vegetation areas that are less than 100m wide should be avoided.</p>

Ecological Value	Key Considerations for Master Planning
	If they cannot be avoided, a more detailed response to performance outcome P16 in State Code 16: Native Vegetation Clearing for SARA approval will be required
Threatened Flora	<p>A threatened flora species (Lloyd's Native Olive, <i>Notelaea lloydii</i>) listed as vulnerable under the <i>Nature Conservation Act 1992</i> (Qld) has been recorded in the area and likely exists over most of the site.</p> <p>It would not be practical to avoid these areas at the master planning stage. The best approach is to design the trails and realign subject to field surveys in the detailed design stage.</p>
Koala Habitat	<p>Most of Mount Glen Rock is either Koala District A, Core Koala Habitat, Locally Refined Koala Habitat, or Bushland Koala Habitat.</p> <p>Assessment against State Code 25: Development in South East Queensland Koala Habitat Areas will be required to be referred to SARA as part of the approval process.</p> <p>It is assumed there would not be any issues with approval due to the low impact nature of activities.</p> <p>It is likely that if trails impact on the Koala habitat, there will be conditions put on construction crews, such as undertaking sequential clearing to avoid direct impact to Koalas.</p>

5.6 Opportunities and Constraints

The background review and site analysis has identified a number of opportunities and constraints that will influence the master planning of Mount Glen Rock as an adventure recreation park. These are summarised in the figure below, with opportunities shaded green, and constraints shaded blue.



6. Cultural Heritage

The Aboriginal Cultural Heritage Act, 2003 defines Aboriginal cultural heritage as anything that is:

- A significant Aboriginal area in Queensland; or
- A significant Aboriginal object; or
- Evidence of archaeological or historical significance, of Aboriginal occupation of an area of Queensland.

The Cultural Heritage Duty of Care Guidelines⁵ state that a significant Aboriginal area or object must be particularly significant to Aboriginal people because of either or both of the following:

- Aboriginal tradition;
- The history, including contemporary history, of any Aboriginal Party for the area.

Under the Act, all reasonable and practical measures must be taken to ensure activity being carried out does not harm Aboriginal cultural heritage. The Cultural Heritage Duty of Care Guidelines set out reasonable and practical measures for meeting the cultural heritage duty of care.

The Guidelines categorise activities according to their level of disturbance of an area to determine the likelihood of the activity causing harm to Aboriginal cultural heritage. Essentially, where there is a risk that an activity could harm Aboriginal cultural heritage, the activity should not proceed without cultural heritage assessment.

The Guidelines identify the following features that are highly likely to have cultural heritage significance:

- Ceremonial places
- Scarred or carved trees
- Burials
- Rock art
- Fish traps and weirs
- Occupation sites
- Quarries and artefact scatters
- Grinding grooves
- Contact Sites
- Wells.

Landscape features that may have significance include:

- Rock outcrops
- Caves
- Foreshores and coastal dunes
- Sand Hills
- Areas of biogeographical significance, such as natural wetlands
- Permanent and semi-permanent waterholes, natural springs
- Particular types of native vegetation
- Some hill and mound formations.

⁵ Department of Aboriginal and Torres Strait Islander Partnerships. Aboriginal Cultural Heritage Act 2003: Duty of Care Guidelines. Gazettal Date: 16 April 2004.

A search of the Aboriginal and Torres Strait Islander cultural heritage database and the Aboriginal and Torres Strait Islander cultural heritage register for the five subject properties determined that:

- There are no Aboriginal or Torres Strait Islander cultural heritage site points recorded in any of the subject properties
- There are no Aboriginal or Torres Strait Islander cultural heritage site polygons recorded in any of the subject properties
- There are no cultural heritage management plans recorded in relation to any of the properties
- There are no Designated Landscape Areas recorded in relation to any of the properties
- There are no Registered Cultural Heritage Study Areas recorded in relation to any of the properties.

Prior to any development of Mount Glen Rock, it is recommended that Council undertake a Cultural Heritage Assessment and engagement with the cultural heritage body for the area to determine:

- Potential cultural heritage significant features that may be on site, and management actions to ensure activities do not harm Aboriginal cultural heritage; and
- Opportunities to acknowledge Aboriginal culture and incorporate Aboriginal stories and symbolism in the design.

Furthermore, ongoing engagement is recommended with the cultural heritage body throughout future design and construction stages of the project.

7. Trends Analysis

A review of trends relevant to outdoor recreation generally and those activities likely to be conducted at Mount Glen Rock has been undertaken to assist in informing the master planning process. This includes participation trends as well as trends in relation to the provision, design and management of outdoor recreation, mountain biking and abseiling/ climbing sites.

7.1 Megatrends

Increasing interest in mountain biking and abseiling/ rock climbing aligns with one of the key 'megatrends' identified by the Australian Sports Commission⁶ as those that will shape the sports sector over the coming decades. The megatrend, "**from extreme to mainstream**," captures the rise of lifestyle, adventure and alternative sports, which are particularly popular with younger generations. These sports typically involve complex, advanced skills and have some element of inherent danger and/or thrill-seeking. They are also characterised by a strong lifestyle element, and participants often obtain cultural self-identity and self-expression through these sports.

7.2 Participation in Outdoor Recreation

Since October 2015, Sport Australia has conducted the AusPlay survey replacing previous sport and recreation data collection methods such as ERASS and ABS. In addition, the Queensland Sport, Exercise and Recreation Survey (QSERSA) was conducted in 2015, 2016 and 2018. Key participation data and trends related to those activities likely to be conducted at Mount Glen Rock are outlined below.

7.2.1 Bushwalking

QSERSA data indicates that in 2018, 15% of Queenslanders participated in bushwalking, increasing from 14% in 2015.

Ausplay data indicates that:

- 6.7% of Queensland adults aged over 15 years participate in bush walking, compared to 6.4% nationally.
- Bushwalking is popular with people earning higher incomes, with a participation rate of 18% by people earning over \$150,000 per year.
- Typically bushwalking was undertaken between once a fortnight (34% of participants) and once a month (56% of participants).
- More than two-thirds of those who participate in bushwalking do so for more than 2 hours, with half of all participants doing the activity for 3 or more hours.
- Participation in bushwalking has significantly increased in the last 12 months, and across all frequencies.

⁶ Australian Sports Commission — <https://www.sportaus.gov.au>

Trends - Adults 15+

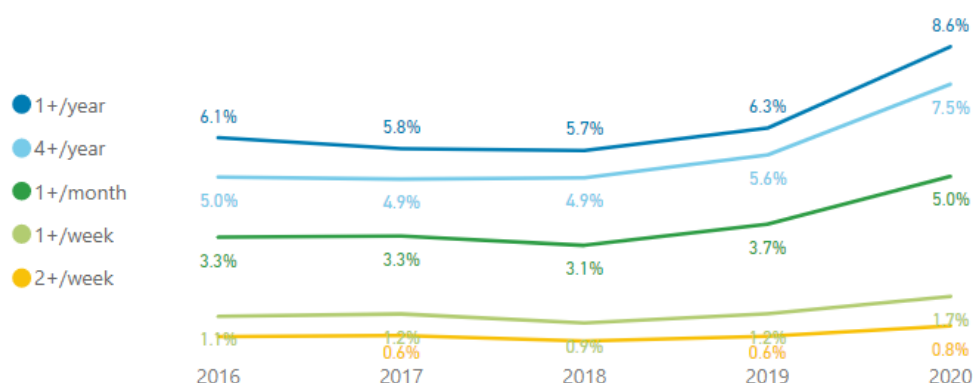


Figure 13: Trends in bushwalking frequency 2016-2020 (Source: [https://www.clearinghouseforsport.gov.au/research/ausplay/results - sport and physical activity reports](https://www.clearinghouseforsport.gov.au/research/ausplay/results-sport-and-physical-activity-reports))

7.2.2 Rock climbing/ Abseiling

QSERSA data indicates that in 2018, 2% of Queenslanders participated in rock climbing, increasing from 1% in 2015.

Ausplay data for rock climbing/ abseiling/ caving (climbing activities) indicates that:

- 0.5% of Queensland adults aged over 15 years participate in climbing activities, compared to 0.9% nationally.
- 1.4% of Queensland residents in major cities participate in climbing activities
- Income is not a key factor of participation, with participants split evenly across all income brackets.
- Typically climbing activities were undertaken between once a fortnight (41% of participants) and once a month (56% of participants).
- Approximately two-thirds of those who participate in climbing activities do so for more than 2 hours, with 30% of all participants doing the activity for 3 or more hours.

There is limited data in relation to rock climbing in Australia. Sport Climbing Australia estimates that 25 million people a climbing regularly worldwide.

In South East Queensland, there are 490 active climbing club memberships across three clubs. There are ten climbing gyms in the Sunshine Coast, Brisbane and Gold Coast. While data is not available, the Australian Climbing Association of Queensland (ACAQ) anecdotally suggests this market is increasing significantly, with an increase estimated 50,000 participants across the Sunshine Coast, Brisbane and the Gold Coast. The ACAQ estimates that 50% of these would transition of outdoor climbing.

7.2.3 Mountain Biking (MTB)

QSERSA data indicates that in 2018, 3% of Queenslanders participated in mountain biking, increasing from 2% in 2015.

Ausplay data indicates that:

- 1.4% of Queensland adults aged over 15 participate in MTB, compared with 1.3% nationally.
- Similarly to bush walking, mountain biking is popular with higher-income earners, with 5.2% of participants earning over \$150,000 per year compared to 2.3% earning under \$100,000.
- Typically mountain biking was undertaken between once a fortnight (66% of participants) and once a month (83% of participants).
- Approximately half of those who participate in mountain biking do so for more than 2 hours, with 29% of all participants doing the activity for 2-3 hours.

The Rise of Mountain Biking

Mountain biking is considered one of the fastest-growing recreational activities globally⁷. The Mountain Bike Australia Annual Report (2019) reported 17,625 members nationwide, representing a 60% increase over the previous five years.

The popularity of mountain biking is arising from a general participation demand, with more people wanting to ride on trails in natural areas. Increased participation in active recreation is an overall emerging trend and, in many locations, this means walking, riding and running on trails. In addition, the increasing availability of mountain bikes, decreasing prices and increased awareness of the activity helps drive increased participation. Likewise, the emergence of and increasing availability and affordability of E-bikes is also driving demand, with many more people now able to cycle and explore off-path trails.

Profiling of mountain bike participants undertaken for the *Mountain Biking in Australia* report⁸ suggests that:

- Mountain bike riders are predominantly male (approximately 80%)
- The 40 to 49 year age group is the largest participation cohort, representing approximately one-third of mountain bikers
- There is strong representation in the 10 to 19 year age cohort, which makes up 22% of Mountain Bike Australia members
- Mountain bikers typically ride a couple of times a week for 1-2 hours

7.3 General Outdoor Recreation Trends

Some broad trends outdoor recreation trends, identified based on a review of state and national studies, include:

Increasing participation in outdoor recreation, exercise and fitness

Several participation studies, including AusPlay and QSERSA, and anecdotal evidence from councils and sport and recreation organisations suggest a trend towards increased participation in outdoor recreation and self-directed forms of exercise.

Social media promotion of outdoor recreation

The rise of social media and “instafame” has had an impact on participation in outdoor recreation. Thousands of “followers” will see a tweet, snapchat, Instagram, Facebook post or another update that shows a beautiful location/ view-scape and a satisfied smile. The use of social media to “advertise” an experience generates demand: people want to emulate the experience or go one better. Critically, it appears as if the photo is as important as the activity.

The rise of social media as a promotion tool for destination and activity has meant some very successful destination marketing strategies and, conversely, problematic recreation management with rapid increases in users for locations where the sudden increase in demand has not been envisaged.

As reported by both land managers and emergency services, there are also increasing concerns regarding ill-prepared users heading off on a walk that someone else has promoted on social media and getting into trouble. Lack of preparation, inadequate clothing and equipment and poor levels of fitness or even outdoor skills have been responsible for a number of serious and minor mishaps in both National Park and Forest reserves.

Increased club and activity organisation via social media and online platforms

A number of clubs are moving towards online coordination of activities. Some more informally organised activities (off-road motorcycling and driving, MTB, paddle sport) use social media as the main platform to promote group rides and events without needing formal club structures. The virtual clubs have no physical clubhouse, no storage facilities, nor club equipment.

Social media also allows for the rapid organisation of group activity, often coordinating participants in a more informal manner with activity location and time announced to those who are attending.

⁷ Mountain Biking in Australia: An Economic and Participation Analysis, 2021 (GHD Report for AusCycling)

⁸ *ibid*

Internet-based outdoor recreation platforms and apps

Web-based platforms and apps like The Crag and Trailforks provide information about accessible outdoor recreation opportunities and include features that enable users to add comments, photos and update information about the opportunities.

These sites also provide a useful management tool in instances where sites are closed or use conditions change. A search of The Crag reveals 19 sport climbing routes in Esk, all located at Mount Glen Rock, with a current notification regarding access being temporarily prohibited.



Figure 14: Screenshot from The Crag showing Mount Glen Rock access temporarily prohibited (Source: www.thecrag.com)

Increased access to outdoor recreation through more affordable equipment

In the past, many outdoor recreation activities required access to relatively costly vehicles such as four-wheel drives, boats, or motorbikes to access locations. But, (prior to Covid-19), the price of vehicles and equipment relative to incomes has fallen significantly.

Parents can now purchase new mountain bikes from retailers like K-Mart for under \$200. While the quality and reliability of the low-price equipment is arguable, the relative accessibility means many are trying activities for the first time, and many more want to use their investment.

A secondary consequence of this increased accessibility could be construed and observed as an increase in numbers of inexperienced users with little or developing skills in operating their vehicles or craft, with similarly limited knowledge of the rules and conventions around the activity or the reserve/ location that they are visiting.

7.4 Trends in the Mountain Biking Industry

7.4.1 Mountain Bike Industry

When discussing trends in the mountain biking industry it is firstly important to understand what is meant by 'the MTB industry'. Essentially, the MTB industry can be thought of as a conglomeration of different business areas, including:

- Bike and equipment manufacturing and retail.
- MTB event organising (both competitive and recreational).
- MTB guided tours and skills tuition
- Commercial shuttle operations (including the use of chairlifts as uplift facilities).
- Provision of traditional tourism services targeting MTB tourists (accommodation, food and beverage, etc.).
- Trail design and construction.

While the MTB industry is quite diverse, the trends in the industry tend to cross the various different business areas, with each influencing, and being influenced by, the others. For example, the popularity of the enduro World Series (the highest level of gravity enduro racing), influences the development and manufacturing of gravity enduro bikes,

leading to an increase in the consumer uptake of such bikes, which in turn leads to increases in local attendance at similar events, which in turn leads to the development of more gravity enduro trails. These various factors all influence, and are influenced by, each other. The following summarise some key trends in the mountain bike industry:

Growing Popularity of Gravity Enduro Events

Gravity enduro racing appears to be riding a wave as the most popular competitive discipline currently. This is probably because it is closer to the type of riding that the majority of people like to do with their friends – riding the descents as fast as possible, and then riding together on the climbs and socialising. By contrast, traditional cross-country disciplines (Olympic, marathon and short-course) appear to require more commitment and discipline and appear to be less attractive and accessible to the average rider.

Bike Development

Typically, the most popular mountain bikes in the market today have 29 inch wheels, tubeless tyres, hydraulic disc brakes, 10-11 speeds (rear derailleur only) and front and rear suspension. Improvements and decreasing production costs in electric battery and motor technology is driving the increasing penetration of E-bikes (electric bikes) into the market. The real benefit of E-bikes is that they have the potential to expand the potential market for MTB trails, beyond the stereotypical adventure/thrill seeking mountain biker cliché.

Gravity Flow Trails

Increasingly, destinations are looking to invest in gravity flow trails. These trails have some cross-over with the gravity enduro phenomenon but are usually more targeted towards beginner-intermediate level riders.

Increasing Women's Participation

Women's participation in MTB is growing slowly, but many commercial tour operators are actively looking to exploit and expand this market through product packaging and cooperative marketing. For example, over the last two years Mt Buller Alpine Resort in Victoria has offered a women's MTB weekend called 'Mind, Body, Bike' that includes social rides, guided tours and skills tuition, with additional optional elements like food and wine, yoga, cooking classes, massage and mindfulness.

Growth of Pumptracks

Pumptracks are becoming more common. Once hidden in backyards of only the most dedicated MTB riders, pumptracks are now being constructed at the trailheads of MTB destinations and in urban areas where local municipal governments are seeing the value in this emerging form of recreational infrastructure.

Increasing Acceptance of MTB as a Legitimate Mainstream Sport

While MTB has been in the Olympics now since the Atlanta 1996 Olympic Games, it is reaching a new level of acceptance as a mainstream sport. Its rise coincides with a decrease in popularity of many traditional, structured sports like football, cricket, basketball etc. Specific children's MTB programs are growing in popularity all around Australia. This is possibly being driven by the increasing lack of fitness and physical activity amongst young people. Parents and teachers see MTB as a means of engaging young people in an activity that promotes physical activity and exposes them to the outdoors.

Growth of MTB Tourism as Economic Driver

MTB tourism is tourism where the primary purpose of the visit is MTB. It is similar to many other popular adventure/outdoor sports, like snow skiing, scuba diving, rock climbing, surfing and golf. Enthusiasts of these sports organise their holidays around their preferred sporting activities.

Previously, many Australian MTB riders looked overseas for their MTB holidays. Destinations such as Canada, USA and New Zealand offered some of the world's leading MTB destinations. While these destinations are still among the world's best and no doubt on the wish lists of many Australian riders, the quality and size of some Australian trail destinations is now comparable to these overseas destinations, convincing many Australian MTB riders to spend their money in Australia instead.

MTB tourism brings economic benefits. It brings money into the local economy and creates job opportunities as new businesses spring up to service the visiting riders.

With the success of MTB destinations like Derby in Tasmania, Government agencies around Australia have started to appreciate the economic value that MTB trails can bring, particularly in rural areas of Australia, where many traditional industries are declining. Looking around Australia, there are many MTB tourism projects recently completed or currently underway, demonstrating the value and benefits that government agencies see in developing MTB products.

7.5 Lessons from the Lockdown - importance of outdoor recreation

The recent impact of measures to reduce the spread of the coronavirus pandemic has highlighted just how important outdoor spaces are to the community. Anecdotal evidence from many towns and cities has highlighted the rapid increase in the use of public space and how important the opportunity to get outdoors and be active has become. It is likely this rapid shift in behaviour may result in more permanent increases in outdoor activity and exercise.

AusPlay data collected between April and December 2020 shows the impact of Covid-19 on participation in sport and recreation. With daily exercise being one of the permissible reasons to leave home during Covid-19 lockdowns, the data shows an increase in sport and recreation participation by Australian adults during April-June 2020 when compared to the same period in 2019.

Furthermore, nationally, a number of activities able to be performed socially distanced increased between 2019 and 2020⁹. Notably, these included:

- Walking – increased by 911,000 participants
- Running/ athletics – increased by 764,000 participants
- Cycling – increased by 624,000 participants
- Bush walking – increased by 493,000 participants; and
- Mountain biking – increased by 99,000 participants.

The implications of this increase mean there will potentially be more people looking for socially distanced experiences like mountain biking and bushwalking.

9

<https://app.powerbi.com/view?r=eyJrIjoibDBkOGY0N2YtZjk1NS00OTMzLTlkN2UtZTU0OGQ3YjAxMWM2IiwidCI6IjhhMmUwZjRjLTU1ZjltNGNiMS04ZWU3LWRhNWRkM2ZmMzYwMCI9&pageName=ReportSectionce2e76e235530a108d86> – page 16

8. Tourism in the Somerset Region

8.1 Tourism Statistics

As detailed in Section 3, in 2019, a total of 623,000 people visited the Somerset region, with 323,000 of these being holiday makers and 217,000 visiting friends or relatives.

One approach to calculating potential visitation to Mount Glen Rock is to apply AusPlay participation data to existing visitor numbers to understand how many of the existing visitors to the area may be inclined to participate in the activities at Mount Glen Rock. Using this method, potential visitation amounts to 53,320 visitors per year, as detailed in the table below. However, it should be noted that this figure is based on regional visitation, so it could be assumed to be higher than for Esk itself.

Trail counter data for the Brisbane Valley Rail Trail (BVRT) shows that in 2020 there were a total of 31,469 pedestrians and cyclists using the rail trail through Esk.

Research undertaken by the University of Queensland in 2021 on Brisbane Valley Rail Trail visitation¹⁰ indicates that 58.4% of rail trail users visit the rail trail for holiday/ leisure. Applying this to the rail trail counter data for Esk, approximately 18,377 of these users could be assumed to be visiting for holiday or leisure and may be inclined to access Mount Glen Rock.

Table 4: Potential visitation to Mount Glen Rock based on applying AusPlay data to Tourism Research Australia visitation data

Activity	Participation Rate (AusPlay)	Domestic Day Trip	Domestic Overnight	Potential Mt Glen Rock User (Day trip)	Potential Mt Glen Rock User (Overnight Stay)	Total Visitors
Bush walking	6.7%	458,000	162,000	30,686	10,854	41,540
Mountain Biking	1.4%	458,000	162,000	6,412	2,268	8,680
Rock Climbing	0.5%	458,000	162,000	2,290	810	3,100

8.2 Tourism Challenges

The Somerset Tourism Strategy 2021-2025 highlighted some key strengths and attributes underpinning the potential development of the region's vibrant visitor economy. Mount Glen Rock was flagged as a potential catalyst recreation and tourism attraction for the region if well planned and managed.

The Strategy also outlined some challenges facing the tourism sector in Somerset. One such challenge highlighted the lack of capacity to innovate and provide business investment due to the higher levels of social disadvantage and lower incomes. Other challenges that may impact tourism associated with the Mt Glen Rock Development include the need for:

- Visitor accommodation to support tourism generally, and BVRT users
- Support services, including food and beverage outlets, such as cafes and restaurants and shops
- Better designed and placed wayfinding and directional signage
- Infrastructure and facilities that are authentic in design (i.e. timber, not plastic)
- Engagement with tourism operators to improve and develop their capacity to deliver a high-quality product

¹⁰ The University of Queensland (2021). *Brisbane Valley Rail Trail (BCRT) Visitor Research Program Report*.

- Clear branding and direction to enhance the identify of the region.

Increasing visitation or length of stay due to opportunities at Mount Glen Rock will likely trigger a need for broader Council planning, and community response to ensure sufficient accommodation, support services, and marketing to drive the Mount Glen Rock product.

9. Benchmarking

A benchmarking exercise was undertaken to seek information about successful trail and rock climbing/ abseiling sites that would help to inform key design considerations and principles for Mount Glen Rock. Key outcomes of the benchmarking are summarised below.

9.1 Mountain Biking

Key outcomes of benchmarking undertaken by World Trail of mountain bike locations within South East Queensland is summarised in the table below.

Table 5: Mountain Biking in South East Queensland

Location	Number of Trails	Length of Trails (km)	Social Media	No. Visitors logged on Trailforks (2019)*	Rides per year logged on Trailforks*	Site Features		
Hidden Vale Adventure Park	Access Trail/Road	18	Access Trail/Road	42	14,705 Facebook followers 6,555 Instagram followers 5,472 Trailforks ride logs	457 visiting riders (100%)	1,132 (2019) 1,407 (2020)	Skills park Picnic area and shelters
	Very Easy (White)	1	Very Easy (White)	0.98				
81 Trails 123.3km	Easy (Green)	25	Easy (Green)	54.7				
	Intermediate (Blue)	29	Intermediate (Blue)	65				
Gap Creek Reserve	Access Trail/Road	27	Access Trail/Road	32	879 Gap Creek Facebook followers 1,888 alternative site followers Trailforks ride logs 28,254	640 (73.1%) local riders 236 (26.9%) visiting riders	6,761 (2019) 7,856 (2020)	Skills park BBQ Picnic area and shelters
	Easy (Green)	11	Easy (Green)	6.2				
	Intermediate (Blue)	19	Intermediate (Blue)	16.5				
	Difficult (Black)	5	Difficult (Black)	4.56				
Tewantin National Park (Sunshine Coast)	Access Trail/Road	8	Access Trail/Road	9.52	2,616 Facebook followers 9,589 Trailforks ride logs	30 local riders 445 (93.7%) visiting riders	2,016 (2019) 3,187 (2020)	
	Very Easy (White)	1	Very Easy (White)	0.76				
	Easy (Green)	8	Easy (Green)	9.77				
	Intermediate (Blue)	8	Intermediate (Blue)	12.05				
	Difficult (Black)	2	Difficult (Black)	1.64				
Sugarbag Road (Sunshine Coast)	Easy (Green)	5	Easy (Green)	3.29	808 Facebook followers 256 Instagram followers 7,076 Trailforks ride logs	313 visiting riders (100%)	1,598 (2019) 2,324 (2020)	Pump track BBQ Picnic area and shelters
	Intermediate (Blue)	6	Intermediate (Blue)	5.054				
	Difficult (Black)	6	Difficult (Black)	2.83				
	Extreme (Double Black)	6	Extreme (Double Black)	2.28				
23 trails 13.45km								

Location	Number of Trails		Length of Trails (km)		Social Media	No. Visitors logged on Trailforks (2019)*	Rides per year logged on Trailforks*	Site Features
Nerang National Park 81 Trails 123.26km	Access Trail/Road	28	Access Trail/Road	51.88	5,496 Facebook followers 937 Instagram followers 34,443 Trailforks ride logs	156 (18.3%) local riders 697 (81.7%) visiting riders	8,338 (2019) 9,963 (2020)	Picnic area and shelters
	Very Easy (White)		Very Easy (White)					
	Easy (Green)	10	Easy (Green)	11.6				
	Intermediate (Blue)	31	Intermediate (Blue)	50.17				
	Difficult (Black)	12	Difficult (Black)	9.62				
Toowoomba 127 Trails 177.25km	Access Trail/Road	56	Access Trail/Road	127.7	2,366 Facebook followers 18,239 Trailforks ride logs	22 local riders 227 (91.2%) visiting riders	4,085 (2019) 4,695 (2020)	Picnic area and shelters
	Very Easy (White)	1	Very Easy (White)	1				
	Easy (Green)	40	Easy (Green)	29.62				
	Intermediate (Blue)	21	Intermediate (Blue)	14.02				
	Difficult (Black)	8	Difficult (Black)	2.78				
	Extreme (Double Black)	1	Extreme (Double Black)	2.11				
Wyaralong (Mt Joyce) 21 trails 34.63km	Access Trail/Road	3	Access Trail/Road	8.20	1,437 Facebook followers 1,202 Trailforks ride logs	0 local riders 61 (100%) visiting riders	92 (2019) 404 (2020)	Picnic area and shelters Uplift service
	Easy (Green)	7	Easy (Green)	14.14				
	Intermediate (Blue)	7	Intermediate (Blue)	9.319				
	Difficult (Black)	4	Difficult (Black)	2.96				
Bunyaville 40 trails 36.25km	Access Trail/Road	21	Access Trail/Road	20.12	25,107 Trailforks ride logs	422 (72.6%) local riders 159 (27.4%) visiting riders	5,342 (2019) 4,074 (2020)	Picnic area and shelters
	Very Easy (White)		Very Easy (White)					
	Easy (Green)	4	Easy (Green)	1.23				
	Intermediate (Blue)	13	Intermediate (Blue)	12.06				
	Difficult (Black)	2	Difficult (Black)	2.85				

* Source: www.trailforks.com

9.2 Climbing

Climbing website, *The Crag* lists 7,154 rock-climbing routes in South East Queensland across seven regions, as detailed in the table below.

Table 6: Rock Climbing in South East Queensland (source: www.thecrag.com)

Region	Style	Routes	Height	Grades
Wide Bay Burnett	Mostly bouldering	187	28m	Beginner to Expert
Sunshine Coast	Sport climbing Traditional climbing Other styles	2,016	29m	Beginner to Expert
Brisbane	Mouldering Sport climbing Other styles	1,950	8m	Beginner to Expert
Scenic Rim	Traditional climbing Sport climbing Other styles	1,601	39m	Beginner to Expert
Gold Coast	Sport climbing Rock climbing Other styles	397	22m	Beginner to Expert
Granite Belt	Mostly bouldering	827	10m	Beginner to Expert
Darling Downs	Traditional climbing Sport climbing Other styles	173	17m	Beginner to Expert

Further detail on some popular climbing locations within South East Queensland is provided below.

Table 7: Specific site details for select rock climbing locations in South East Queensland

Location	Description	Access	Routes	Type	Difficulty	Site Facilities/ Features
Kangaroo Point, Brisbane	<ul style="list-style-type: none"> User-friendly crag Volcanic Tuff rock Long, continuous face Popular for top roping beginners 	Part of Brisbane City Council River Terrace Park. Easily accessible by public transport, active transport, car.	391 routes across 7 sites	Sport Climbing Traditional Climbing Top Roping Aid Climbing Bouldering	31 Beginner 143 Intermediate 191 Experienced 21 Expert	Bikepaths Parkland BBQs Toilets Drinking Water Carparking
Glasshouse Mountains	<ul style="list-style-type: none"> Major historical and popular climbing destination Four separate volcanic plugs (mountains) 	Accessible via car Walk in time varies amongst sites from less than 5 minutes to 20-30 minutes	813 routes across 6 sites	Sport Climbing Traditional Climbing Rock Climbing Top Roping Bouldering	139 Beginner 352 Intermediate 212 Experienced 60 Expert	Information for some sites indicates: Carparking Drinking water

Location	Description	Access	Routes	Type	Difficulty	Site Facilities/ Features
Coomba waterhole, Maidenwell	<ul style="list-style-type: none"> • Suitable for traditional climbing and bouldering • Short routes on granite • Surrounds popular waterhole • Beginner to intermediate crag • Range from 3m to 35m 	2km from Maidenwell township 70m walk from carpark	40 routes	Bouldering Rock climbing/ other climbing	11 Beginner 12 Intermediate 4 Experienced 1 Expert	Nil noted
Redcliffs, Helidon	Sandstone cliff in Lockyer Valley National Park	Walk-in only	96 routes	Top roping Traditional Climbing Sport Climbing	1 Beginner 53 Intermediate 36 Experienced 3 Expert	Nil noted

10. Key Stakeholder Engagement

The majority of engagement related to the master planning of Mount Glen Rock is being managed by Council and will occur later in the study. Discussions have been held with the following key stakeholders:

- Brisbane Off-Road Riders Alliance
- Australian Climbing Association Queensland
- Seima Safety / Pinnacle Sports
- Brisbane Valley Rail Trail Users Association (undertaken by Council officers)
- Out There Cycling (undertaken in conjunction with Council officers)
- Toogoolawah Wheelers Cycling Club Inc. (undertaken by Council officers)

The Toogoolawah Wheelers Cycling Club was invited by Council, however, to date, has not responded to the invitation.

The consultation focused on the main opportunities proposed for Mount Glen Rock, with information sought from stakeholders that may inform key master planning considerations. Key outcomes are summarised below:

Abseiling and Rock Climbing

- It will be important to separate the trail network and other uses from the rock climbing sites to avoid conflict.
- Trails should be provided close to the cliffs, but not enable walking under the cliffs. Utilise a spur trail off the main trail to access the cliffs.
- Consider a beginners area/ introductory training site, which would consist of a flat area at the bottom with enough space to safely accommodate school groups. There is a strong demand for training cliffs in Queensland.
- Consider opportunities for a mix of commercial and public climbers.
- Ensure access to sites via good walking tracks and car parking nearby. Climbers will walk up to one hour for a good climbing experience. Sport climbers prefer close access if possible, but will walk from a designated carpark.
- Mount Glen Rock has potential to cater for beginners through to advanced climbers, and sport climbers.
- In relation to the three sites identified in the Seima Safety report:
 - Site 3 is a “possible” abseiling with good potential as a training cliff. This site and also has good potential as a lookout, and user conflict needs to be considered.
 - Site 2 is considered as having the best potential to be the “main site” due to potential opportunities and the ease of access from the Francis Street greenfield site.
 - Site 1 has potential for high-end elite level sports climbing.
- Local stakeholders stressed the importance of having the rock properly assessed for rock climbing due to a belief that the rock is unstable in areas

Mountain Biking

- It will be important to ensure the mountain bike trails are of high quality to compete with other quality venues throughout South East Queensland
- There needs to be more than one trail, and trails should accommodate all types of riders and include a variety of easy rides and more technical rides

- There is interest from the local/ regional cycling community in accessing dedicated, technical mountain bike trails that complement the rail trail, with daily use anticipated
- Consider single track trails
- Potential to link to a broader network of regional mountain biking destinations
- Potential for weekly club-based rides of 10-20 riders, and occasional club-based mountain biking events attracting 50 or more riders.

Trail Head

- Include a central meeting area that enables large groups to congregate without impacting on other users and car parking areas
- Include signage with important information, including maps and information about the trails and difficulty ratings
- Sufficient parking to cater for all potential users
- Wash down area for bikes
- Toilets
- Shaded picnic areas with electric barbecues
- Shelters
- Water
- Bike parking – in keeping with the natural environment (i.e. consider the use of trees, rocks etc. rather than built parking infrastructure)
- Parking should be separate from the trail head and away from residential areas and should include a designated drop-off area and mechanisms such as drive-through, one-way in/ out, or a turning circle to accommodate coaster vehicle and trailer

General Considerations

- Capitalise on tourist values of the site, for example, the views of Esk and the surrounding countryside
- Estimate up to 200 users may visit on Saturday mornings.
- There will be a need for additional accommodation in Esk when the facilities are developed. The development may also open up opportunities for additional related tourist ventures such as bike storage, bike cleaning, food and beverage
- If done well, the people will come, and there will be event potential associated with the activities.

11. Activity Specific Considerations

11.1 Mountain Biking

Several variables contribute to the success of a mountain biking opportunity. The following provides a brief summary of factors to be considered in the master planning process:

Quality of the Trail Network

While ultimately a riders' perception and enjoyment of a trail is a matter of opinion, the quality of the construction of a trail is not.

- Does the trail have proper drainage in place? If not, it will become boggy and degraded in short time, damaging the trail but also impacting on the experience.
- Is there adequate and sufficient signage in place? If not, riders will struggle to navigate their way throughout the trails and may become lost or confused.
- Do the trails match their difficulty ratings? In some ways, the easiest trails are the hardest to construct as they require attention to detail, removal of obstacles, careful adherence to low trail gradients etc.
- Are the trails spectacular?
- Do the trails facilitate easy enjoyment of the scenery? This means making sure that the trails reach all the landmarks and features within the landscape. It also means going above and beyond to construct lookouts and rest spots, with accessories like handrails, bike stands, seating, etc.
- Are the trails landscaped? This might include rock walls, retaining walls, trail surfacing, rock armouring and rock features like jumps, chokes and corrals. Many of these features have important roles in trail sustainability, but also create a sense of high quality trail construction.



Figure 15 Derby Trails – an example of a quality trail (photo credit: World Trail)

Extent of the Trail Network

The size of the trail network is an important consideration. The ideal goal is to create a trail network that can't be ridden easily in one day's visit, encouraging riders to make a return trip or to stay overnight. This is referred to as the 'Tipping Point' – i.e. the length of trail that can't be easily ridden in one day. The tipping point is generally somewhere in the order of 85 km of trail, but is influenced by topography, terrain, soils, style of trails and difficulty rating of trails.

Variety Offered by the Trail Network

The best trail destinations offer a variety of trails to ensure they cater to the widest possible market of MTB riders. This means offering a variety of trail types/styles (including cross-country, gravity flow, DH etc.) and also a variety of trail difficulty ratings within each of these different trail types/ styles. The wider the offering, the bigger the potential market of trail users.

Location of the Trail Network

The most popular trail destinations in Australia are within around 3-5 hours driving time from major capital cities and 1-3 hours driving time from large regional towns.

Marketing of the Trail Network

Being a non-traditional and still maturing sport in Australia, MTB has always occupied a low-key position in the mainstream sporting world. As such, most marketing of MTB destinations has been aimed at the dedicated enthusiasts and through dedicated MTB media such as magazines, websites and social media. However, marketing is becoming more commonplace with all the leading Australian MTB destinations recognising the value of marketing and engaging in some degree of marketing, albeit still largely targeted at the dedicated enthusiasts.



Figure 16. Stonefly advertising Mt Buller (photo credit: World Trail)

Supporting Services and Infrastructure

Supporting services and infrastructure includes accommodation, food and beverage, bike hire, shuttle services, visitor information centres etc. While these don't generally influence riders to travel to a destination, if they aren't in place

they can be a deterrent to travel. Furthermore, exceptional businesses in this area can be an attraction in their own right – micro-breweries, unique accommodation offerings, the ability to hire and trial high end mountain bikes etc.

Provision of Information About the Trail Network

High quality information about the trail network (and supporting services and infrastructure) needs to be available and easily accessible to riders pre-visit. This is typically done through websites, but some destinations (like Blue Derby, TAS) are even developing their own smartphone apps with interactive trail maps that could be used to provide detailed information pre-visit.



Figure 17 Derby Trail Head (Photo credit: World Trail)

MTB Events

MTB events are an important motivator for many visitors and can often be the way that many riders visit a destination for the first time. This includes both elite (for example, the Enduro World Series held in Derby in 2017 and again in 2019, which is an elite level event, but attracts many, many spectators) and mass-participation events (for example, 24-hour cross-country enduro style events).

Availability of Non-MTB Tourism Product

Having non-MTB tourism products available also adds to the attractiveness of a destination and broadens the market base. It increases the appeal of a destination particularly for the family/leisure segment, who may not want to ride every single day of their visit. It also means that there are other activities for non-riding members of the travel group, again making the destination more attractive for families or groups.

Maintenance and Ongoing Investment in the Trail Network

This variable is linked to quality – if a high-quality trail network isn't maintained, it won't stay that way for long. Well maintained trails always feel fresh, new and looked after and invite repeat visitation, contributing to the overall experience of visitors.

Trail destinations need to keep investing in their trail network to ensure they remain current and progressive, providing reasons for people to return time and time again. This doesn't necessarily mean constantly expanding and adding new trails. Instead it might mean a rebuild of an existing trail, the addition of some optional ABC lines or jumps, the refurbishment of bridge or boardwalk and so on.



Figure 18 Derby trail maintenance (Photo credit: World Trail)

11.2 Rock Climbing

The Queensland Adventure Activity Standards provide guidance in relation to the safe planning and conduct of outdoor adventure activities. The standards for rock climbing and abseiling include a number of site considerations to determine whether or not a location is suitable for rock climbing, bouldering and abseiling. The following checklist provides an overview of key considerations:

- Is the site already a recognised site for this activity?
- Will local people, land managers and traditional owners support the site being used for this activity?
- Will the use of this venue be supported by other activity providers in the region?
- Is the site clean enough to use without excessive gardening as part of risk management?
- Are there suitable tracks and group access to the site and between the top and bottom of the site?
- Are there suitable trail heads and car parking?
- Can the activity be undertaken without impact on the manageable safe participation by other recreational users?
- Are there suitable anchor points for safe abseiling or rock climbing?
 - Regular inspection procedures for all anchors and connections should be implemented. Safety for anchors and connections should include the following considerations:
 - Anchors are capable of supporting their intended loads
 - Inspection and testing regimes for artificially installed anchors are established
 - Procedures for checking each attachment during the activity are required. The selected method should prevent unplanned disconnection.

The standards state that if the answer to any of these questions is 'no', then further consultation with peak industry bodies is required to be documented in environmental and risk management plans before a final decision to continue or discontinue is made.¹¹

Based on the above, the following is noted:

- Engagement with Traditional Owners is recommended.
- A detailed assessment of the sites would be required to determine whether or not they are clean enough for use. Some vegetation removal may be required at some locations.
- The Master Plan will need to incorporate suitable car parking and trail heads to support rock climbing use.
- The Master Plan will need to incorporate trail access to the climbing sites.
- The Master Plan will need to consider the impact of climbing activities on other proposed activities within Mount Glen Rock, and vice versa, and plan the design accordingly to reduce undesirable impacts.
- Suitable anchor points would need to be installed to ensure suitability for the proposed activities in accordance with assessments undertaken by qualified professionals.

¹¹ Queensland Adventure Activity Standards - Abseiling, Queensland Outdoor Recreation Federation, 2014

12. Warranties and Disclaimers

The information contained in this report is provided in good faith. While Otium Planning Group has applied their own experience to the task, they have relied upon information supplied to them by other persons and organisations.

We have not conducted an audit of the information provided by others but have accepted it in good faith. Some of the information may have been provided 'commercial in confidence' and as such these venues or sources of information are not specifically identified. Readers should be aware that the preparation of this report may have necessitated projections of the future that are inherently uncertain and that our opinion is based on the underlying representations, assumptions and projections detailed in this report.

There will be differences between projected and actual results, because events and circumstances frequently do not occur as expected and those differences may be material. We do not express an opinion as to whether actual results will approximate projected results, nor can we confirm, underwrite or guarantee the achievability of the projections as it is not possible to substantiate assumptions which are based on future events.

Accordingly, neither Otium Planning Group, nor any member or employee of Otium Planning Group, undertakes responsibility arising in any way whatsoever to any persons other than client in respect of this report, for any errors or omissions herein, arising through negligence or otherwise however caused.

Appendix 1: Ecological Maps

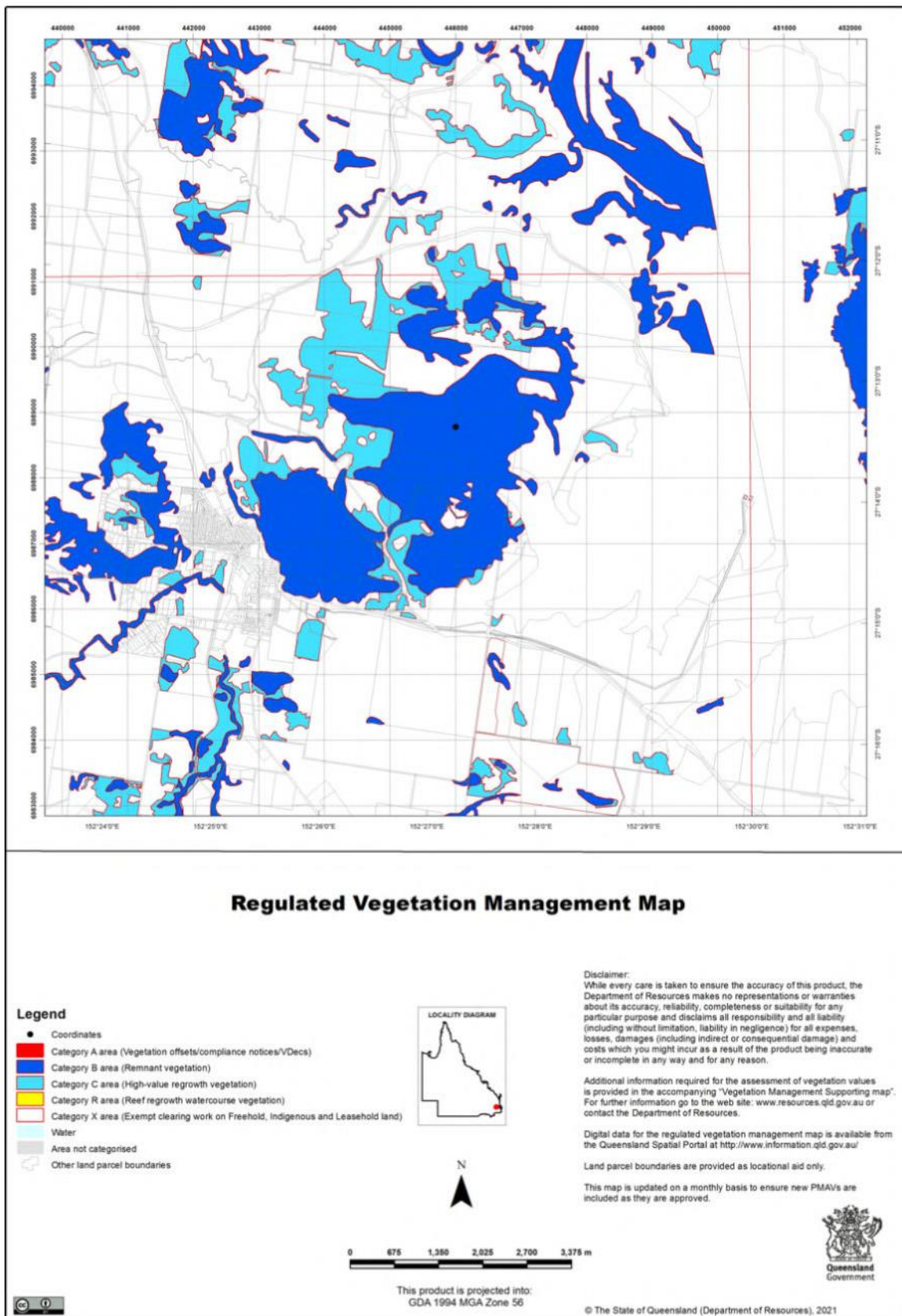


Figure 19: Regulated Vegetation Management Map for Mount Glen Rock study area

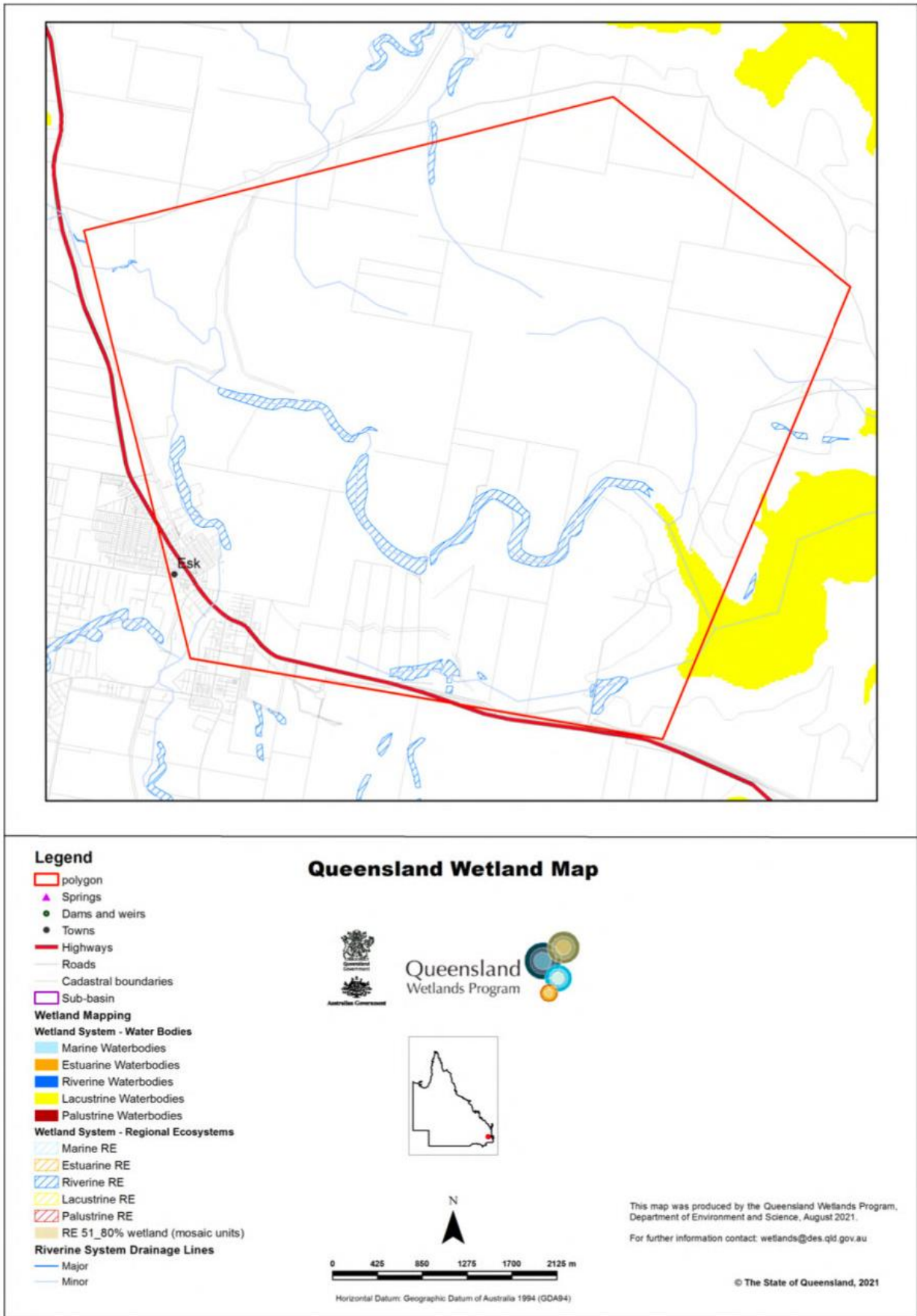
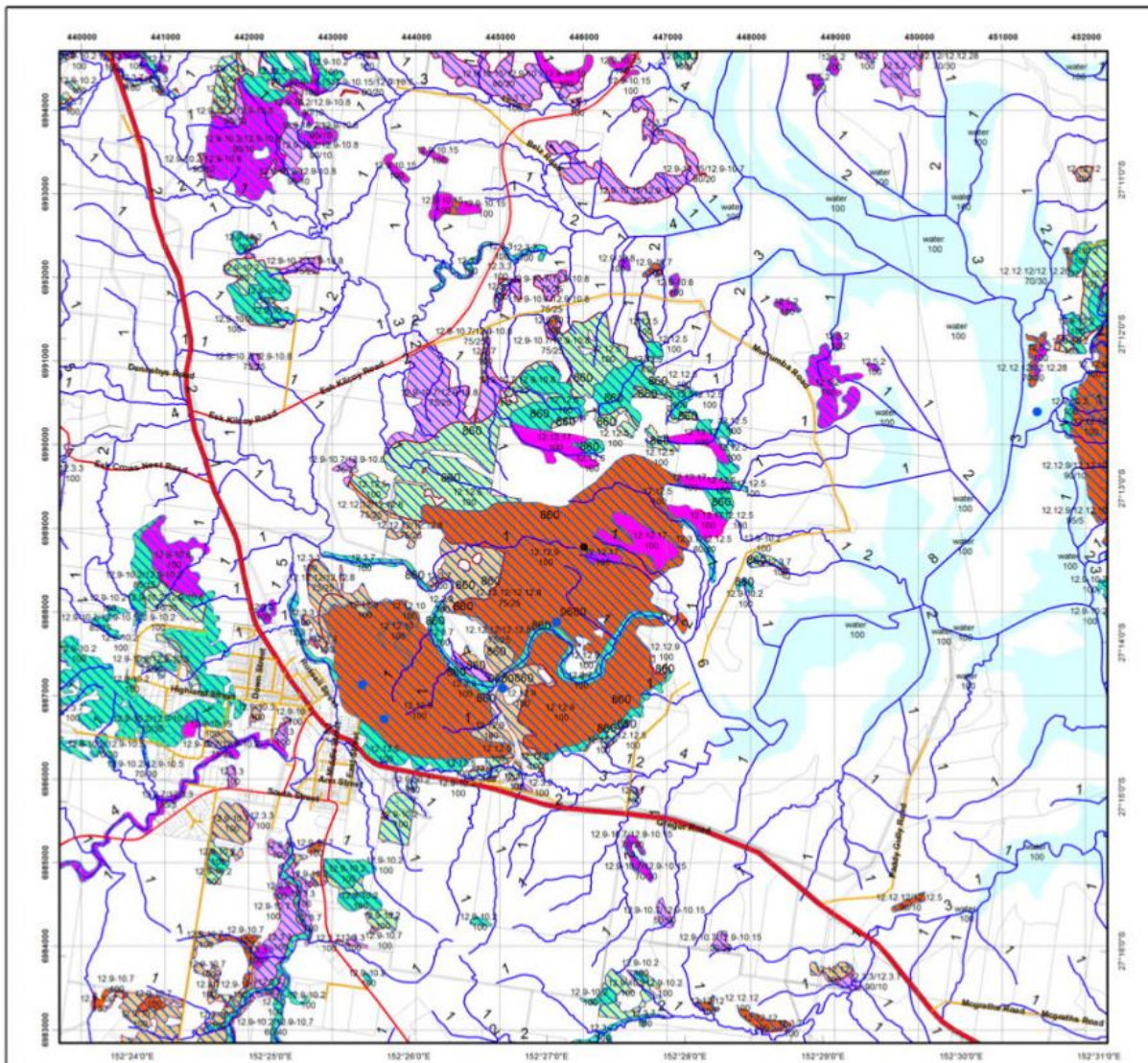


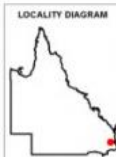
Figure 20: Queensland Wetland Map for the Mount Glen Rock study area



Vegetation Management Supporting Map

Legend

- Coordinates
- █ Category A or B area containing endangered regional ecosystems
- █ Category A or B area containing of concern regional ecosystems
- █ Category A or B area that is a least concern regional ecosystem
- █ Category A or B area under Section 20AH
These areas are edged in yellow and filled with the remnant RE Status
- █ Category C or R area containing endangered regional ecosystems
- █ Category C or R area containing of concern regional ecosystems
- █ Category C or R area that is a least concern regional ecosystem
- █ Category C area under Section 20A1
These areas are edged in purple and filled with the remnant RE Status
- █ Category X area
- █ Water
- █ Wetland on the vegetation management wetlands map
- █ Essential habitat on the essential habitat map
- Essential habitat species record
- █ Watercourses and drainage features on the vegetation management watercourse and drainage features map
(Stream order shown as black number against stream where available)
- █ Highway
- █ Connector
- █ Street/Local Road
- █ National Parks, State Forest and other reserves
- █ Other land parcel boundaries



0 480 960 1,440 1,920 2,400 m

This product is projected into:
GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

Disclaimer:

While every care is taken to ensure the accuracy of this product, the Department of Resources makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

Land parcel boundaries are provided as locational aid only.

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Figure 21: Vegetation Management Supporting Map for the Mount Glen Rock study area showing watercourses protected under the *Vegetation Management Act 1999* (Qld)

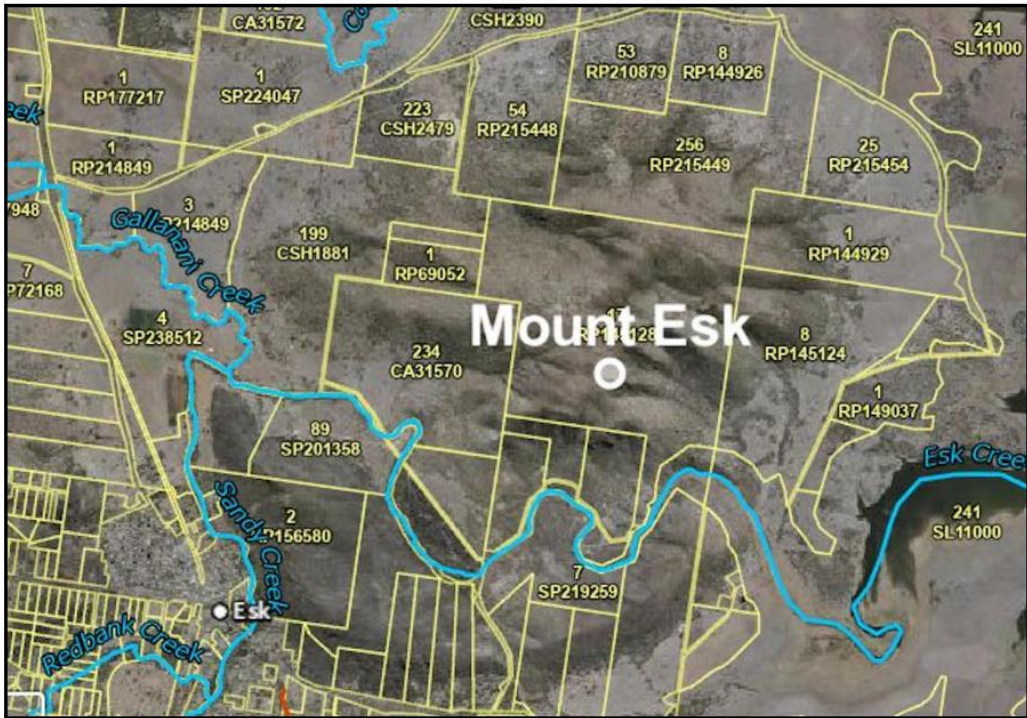


Figure 22: Watercourse Identification Map – Watercourses protected under the *Water Act 2000* (Qld)

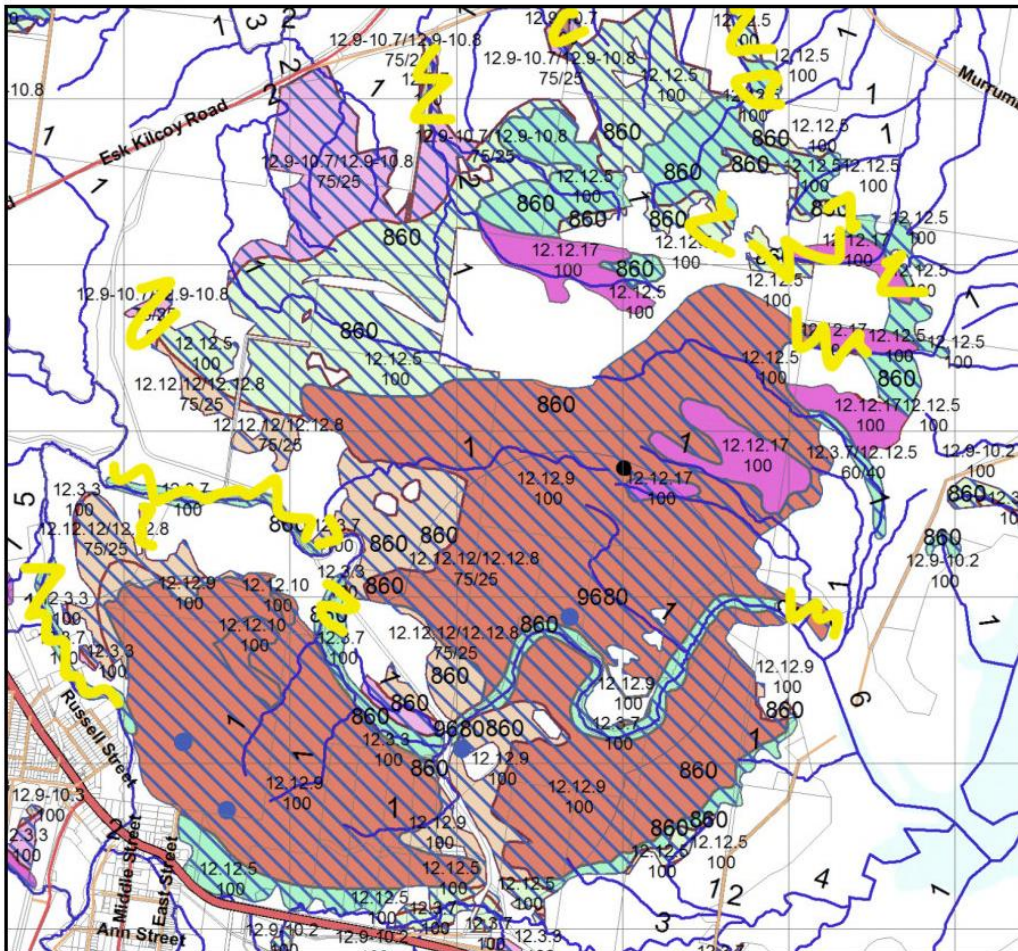


Figure 23: Screenshot of Vegetation Management Supporting Map for the Mount Glen Rock study area showing areas to avoid in yellow as these are likely to be less than 100m wide

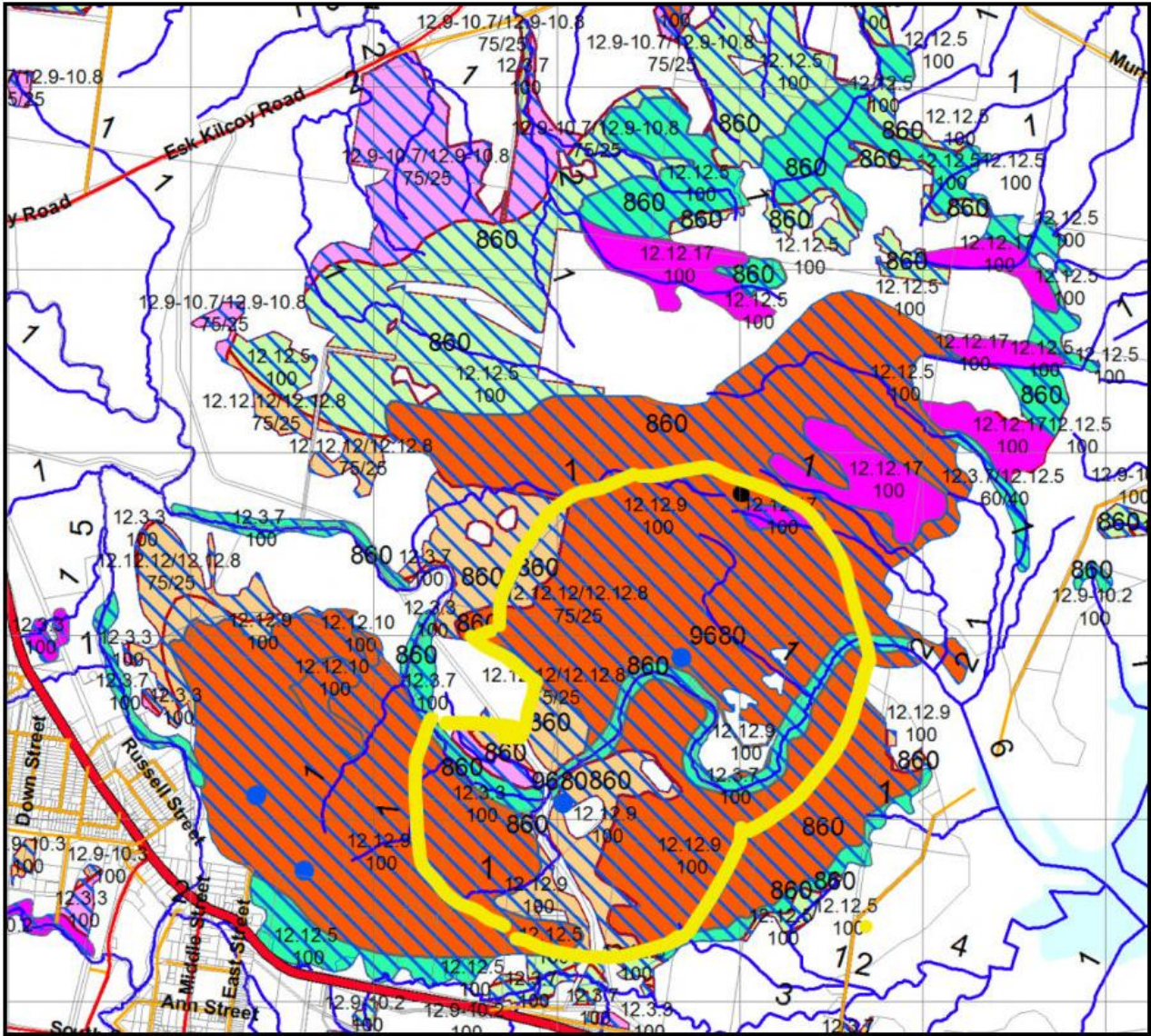


Figure 24: Screenshot of the Vegetation Management Supporting Mao for Mount Glen Rock study area. Area designated in yellow is essential habitat for Lloyd's Native Olive, *Notelaea lloydii*, with tow records of this species designated by the blue dots within the yellow mapped area

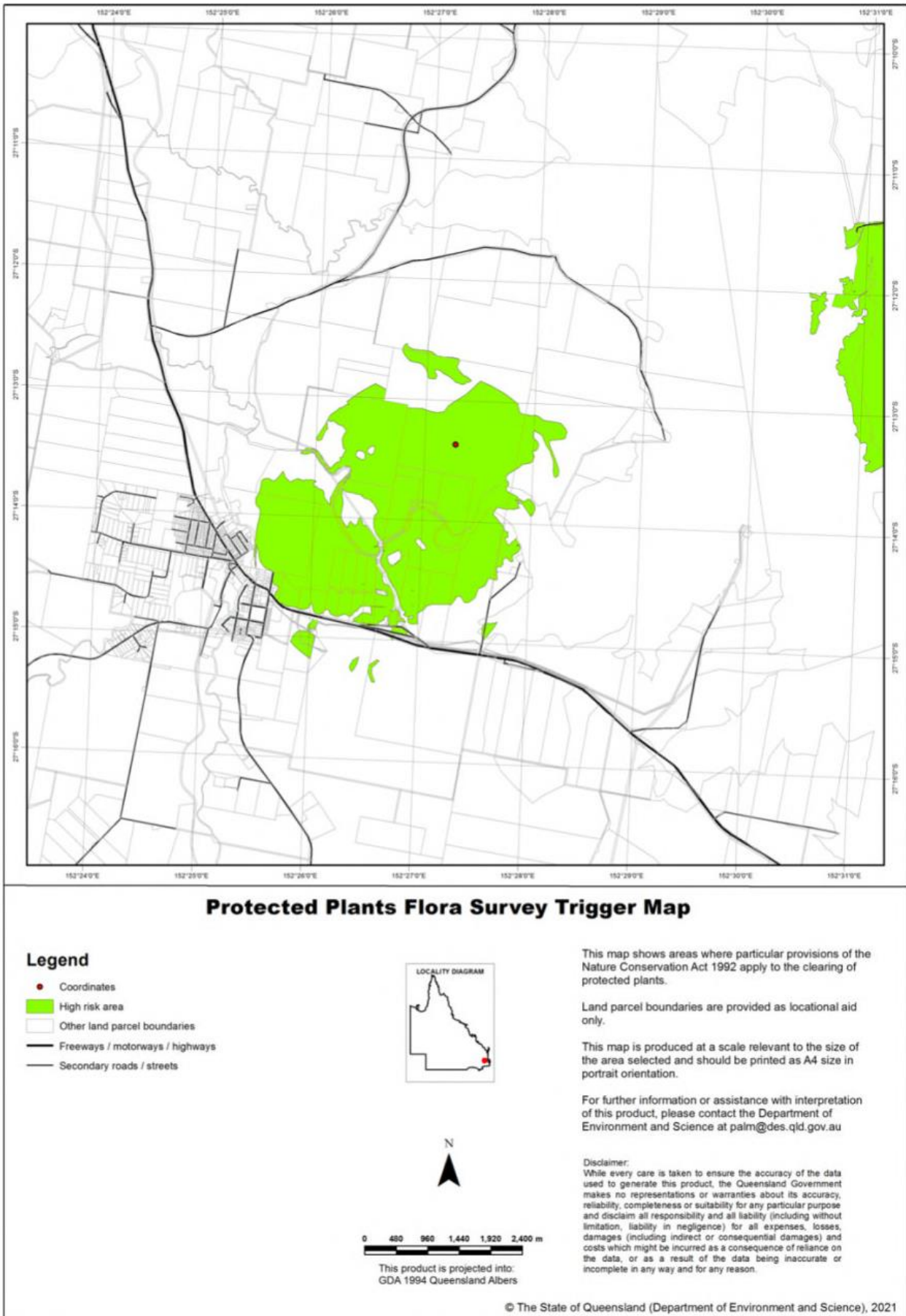
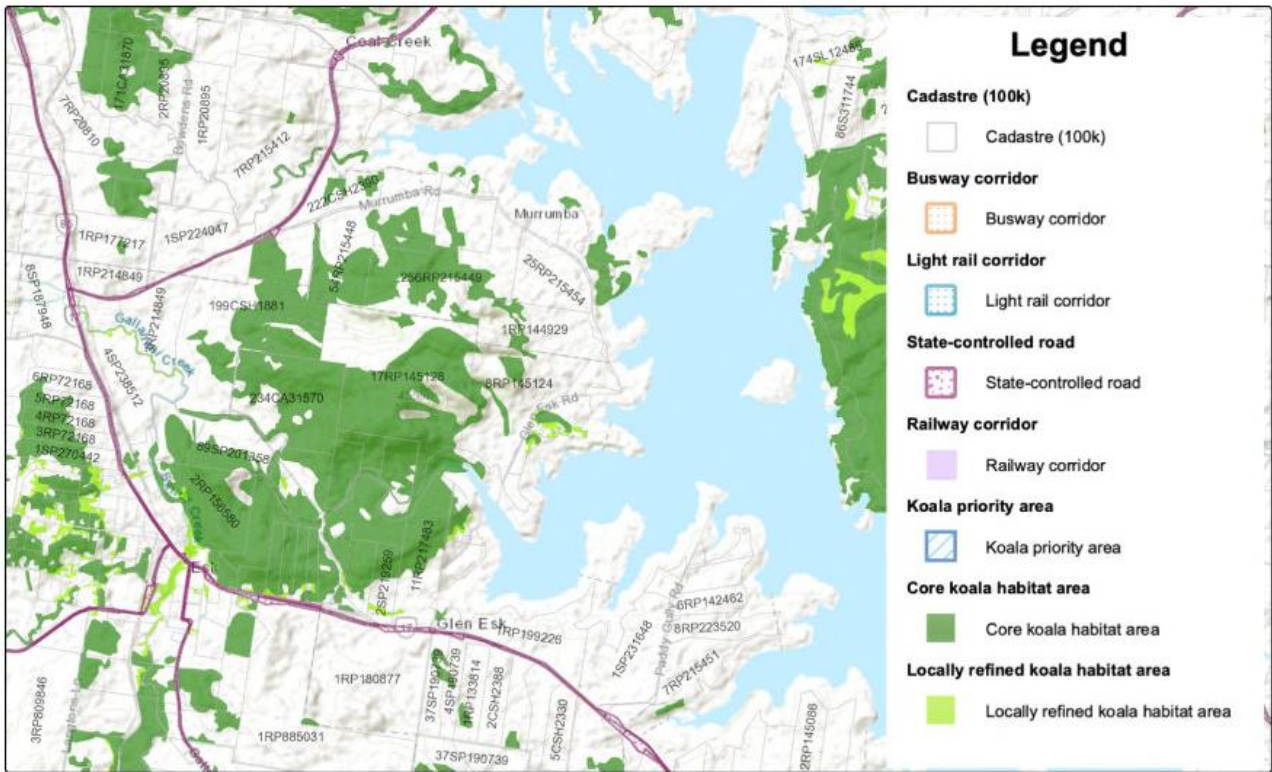


Figure 25: Flora Survey Trigger Map for Protected Plants protected under the *Nature Conservation Act 1992* (Qld)



DA Mapping System – Print Screen



Queensland Government
© The State of Queensland 2021.

0 1,100 2,200 3,300 4,400

Metres
Date: 27/08/2021

Disclaimer:
This map has been generated from the information supplied to the Queensland Government for the purpose of the Development Assessment Mapping System. Note that this is a print screen only. The map generated has been prepared with due care based on the best available information at the time of publication. The State of Queensland holds no responsibility for any errors, inaccuracies or omissions within this document. Any decisions made by other parties based on this document are solely the responsibility of those parties. This information is supplied subject to the full terms and conditions available on the department's website.

Figure 26: Koala Habitat Map (Queensland Government mapping)

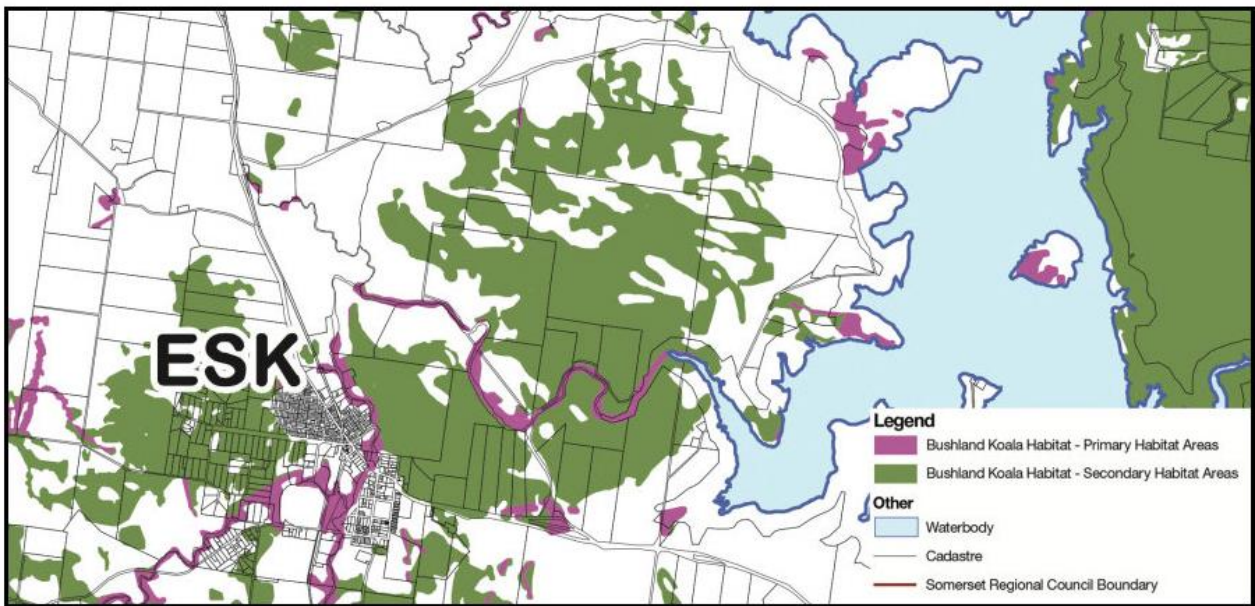
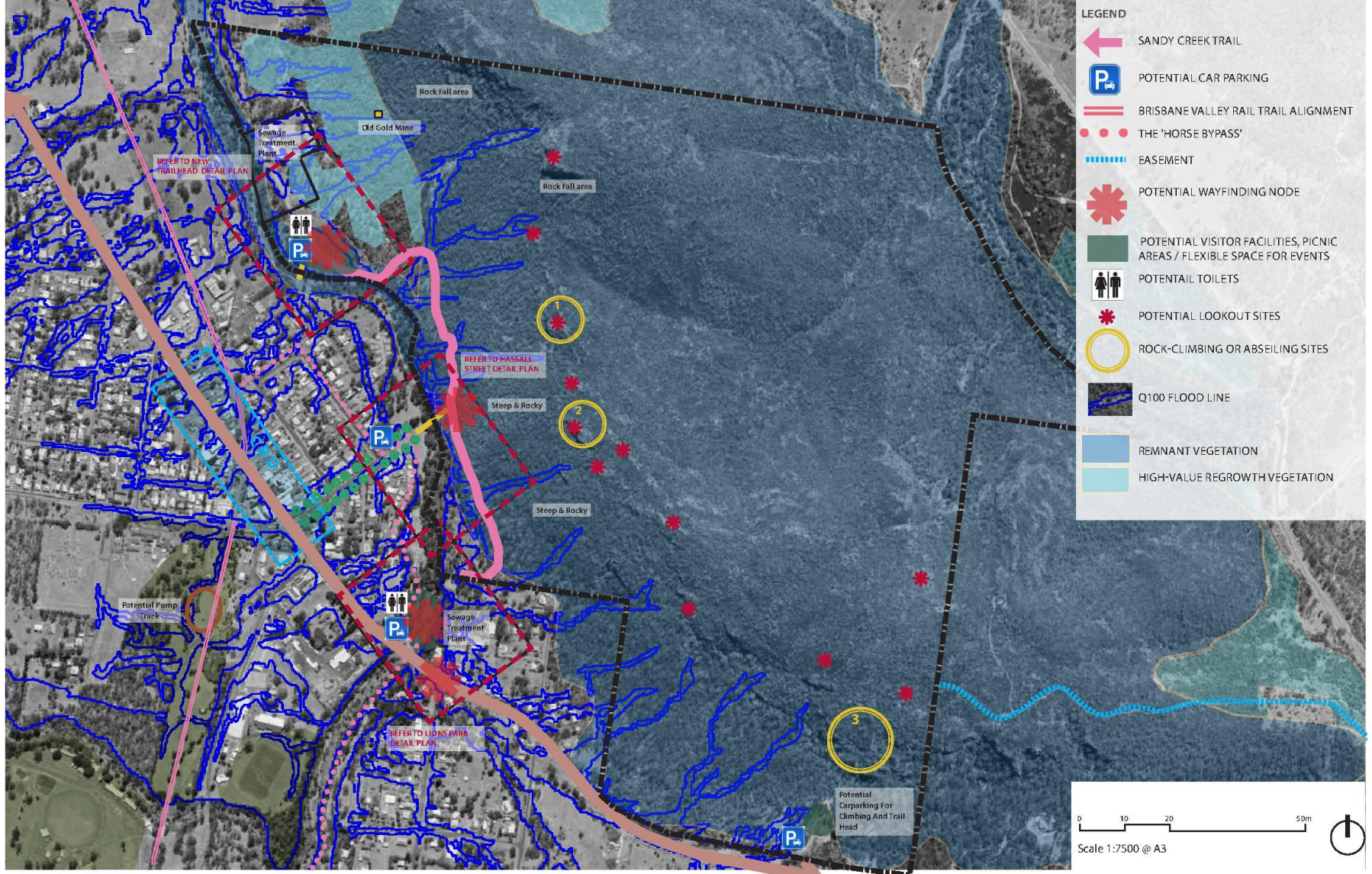


Figure 27: Koala Conservation Overlay Map (OM-003) in the Somerset Region Planning Scheme 2006

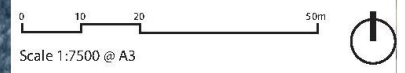
Appendix 2: Opportunities and Constraints Plan

SITE WIDE LANDSCAPE OPPORTUNITIES & CONSTRAINTS



LEGEND

- ← SANDY CREEK TRAIL
- P POTENTIAL CAR PARKING
- BRISBANE VALLEY RAIL TRAIL ALIGNMENT
- THE 'HORSE BYPASS'
- EASEMENT
- POTENTIAL WAYFINDING NODE
- POTENTIAL VISITOR FACILITIES, PICNIC AREAS / FLEXIBLE SPACE FOR EVENTS
- POTENTIAL TOILETS
- POTENTIAL LOOKOUT SITES
- ROCK-CLIMBING OR ABSEILING SITES
- Q100 FLOOD LINE
- REMNANT VEGETATION
- HIGH-VALUE REGROWTH VEGETATION



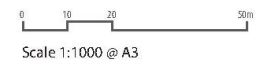
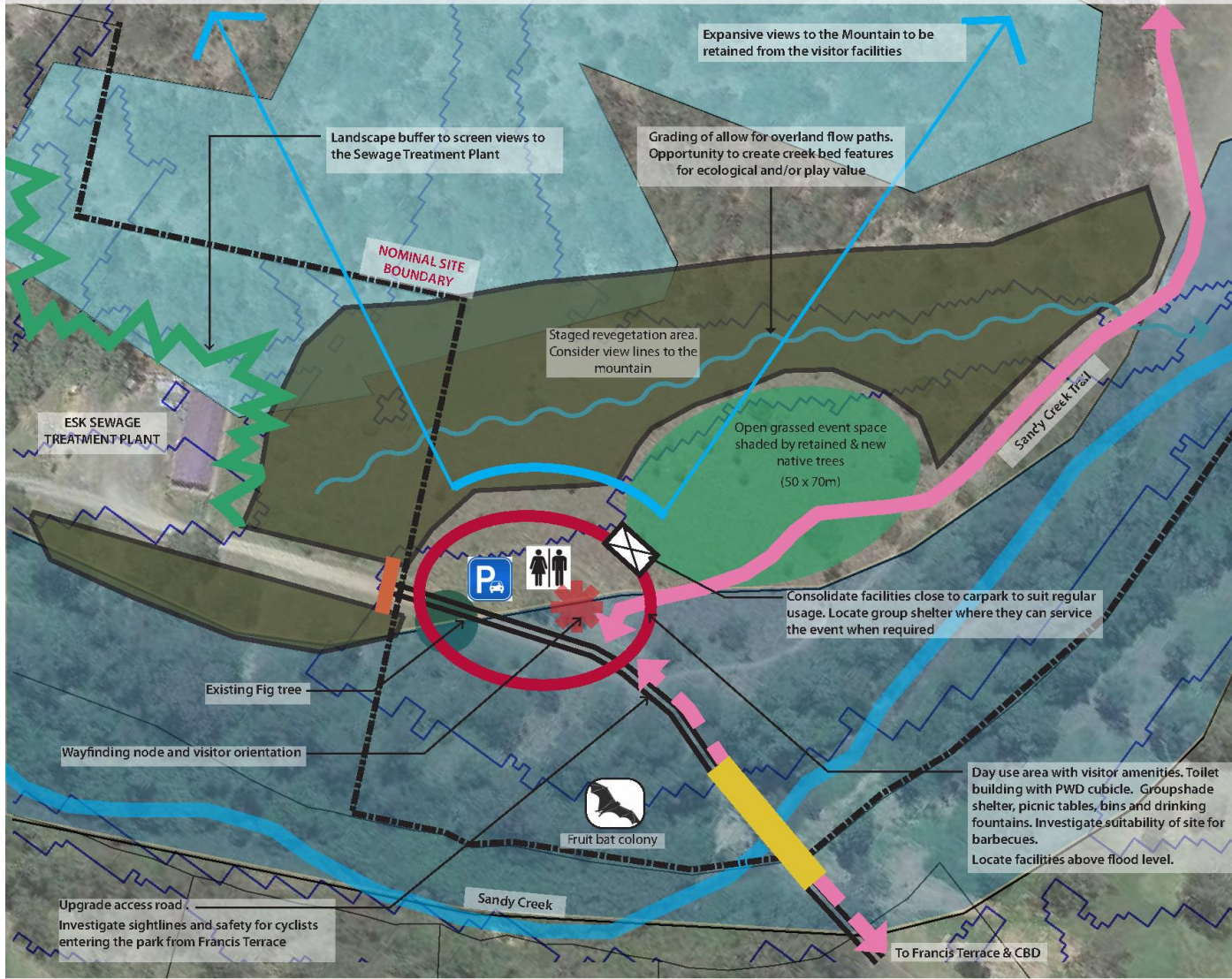
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NEW TRAILHEAD OPPORTUNITIES & CONSTRAINTS (FRANCIS TERRACE)

LEGEND

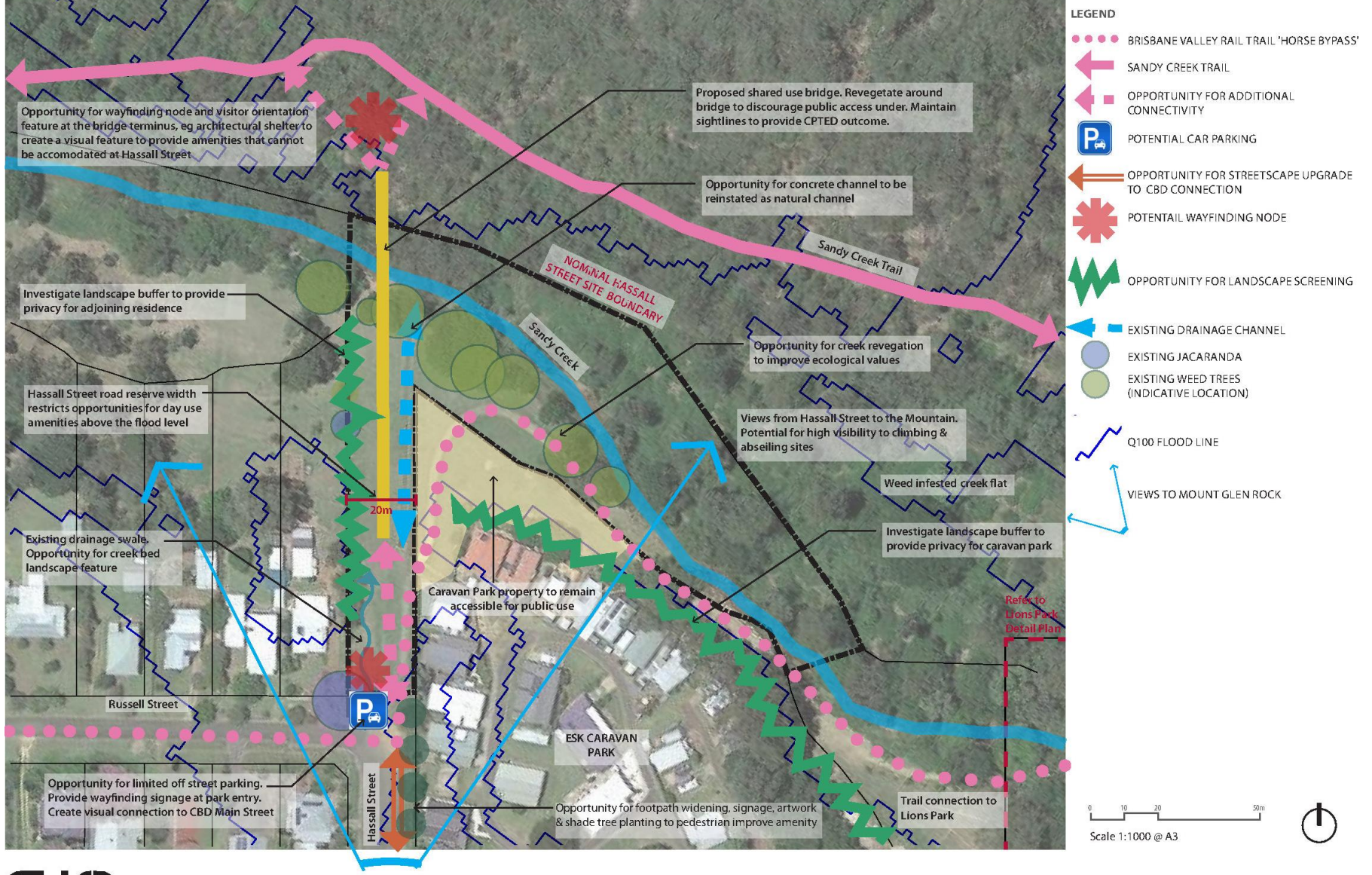
-  SANDY CREEK TRAIL
-  OPPORTUNITY FOR ADDITIONAL CONNECTIVITY
-  POTENTIAL CAR PARKING
-  EXISTING VEHICLE CIRCULATION
-  POTENTIAL WAYFINDING NODE
-  POTENTIAL VISITOR FACILITIES
-  POTENTIAL TOILETS
-  POTENTIAL PICNIC AREAS / FLEXIBLE SPACE FOR EVENTS
-  OPPORTUNITY FOR LANDSCAPE SCREENING
-  OPPORTUNITY FOR REVEGETATION
-  REMNANT VEGETATION
-  HIGH-VALUE REGROWTH VEGETATION
-  Q100 FLOOD LINE
-  VIEWS TO MOUNT GLEN ROCK



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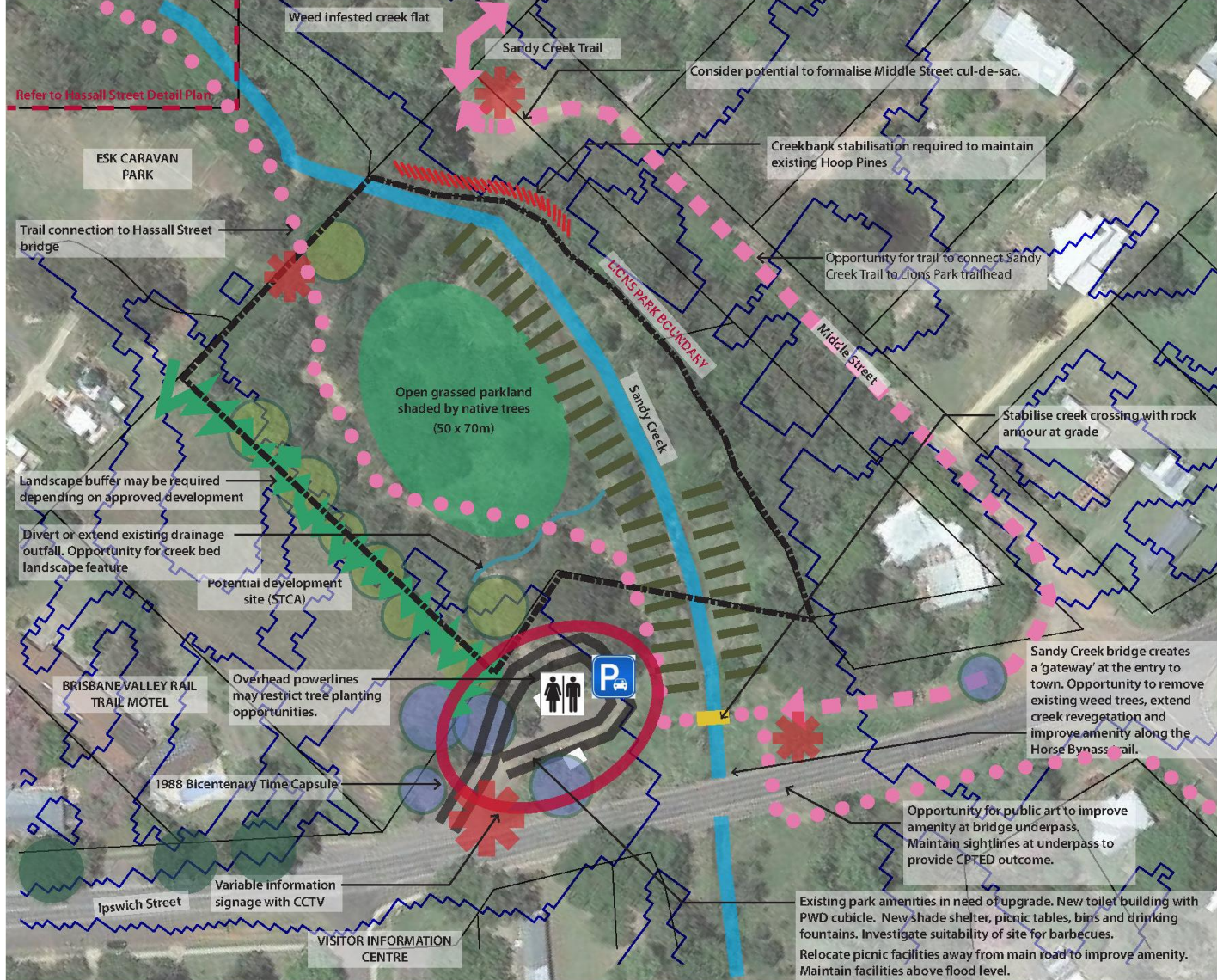
HASSALL STREET OPPORTUNITIES & CONSTRAINTS



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LIONS PARK OPPORTUNITIES & CONSTRAINTS



LEGEND

- BRISBANE VALLEY RAIL TRAIL 'HORSE BYPASS'
- ← SANDY CREEK TRAIL
- ↔ OPPORTUNITY FOR ADDITIONAL CONNECTIVITY
- P POTENTIAL CAR PARKING
- EXISTING VEHICLE CIRCULATION
- ✳ POTENTIAL WAYFINDING NODE
- ⤴ POTENTIAL VISITOR FACILITIES
- ♂ ♀ POTENTIAL TOILETS
- POTENTIAL PICNIC AREAS / FLEXIBLE SPACE FOR EVENTS
- ⚡ OPPORTUNITY FOR LANDSCAPE SCREENING
- EXISTING REVEGETATION
- EXISTING BUNYA PINES
- EXISTING JACARANDA
- EXISTING WEED TREES (INDICATIVE LOCATION)
- Q100 FLOOD LINE

0 10 20 50m

Scale 1:1000 @ A3



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