Metro Road
Off-road Vehicle Area

July 2019
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GOVERNMENT OF WESTERN AUSTRALIA

Department of
Sport and Recreation

Recreational Trailbike Riders' Association
RTRA

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Acknowledgements:

Consultants Trail Bike Management Australia prepared this Concept Plan for the Department of Sport and Recreation with input provided by a working group consisting of the Department of Parks and Wildlife, the Recreational Trailbike Riders' Association and riders familiar with the area, Motorcycling WA and the Department of Sport and Recreation.

Disclaimer:

This Off Road Vehicle Area Concept Plan for Metro Road has been prepared by Trail Bike Management Australia (TBMA) based on assumptions as identified throughout the text and upon information, data and conclusions supplied by others. While all due care and consideration has been used in the preparation of this report TBMA is not in a position to, and does not, verify the accuracy of, or adopt as its own, the information and data supplied by others.

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OVERVIEW

This is a concept plan for the management of a proposed regional off road motorcycling facility (referred to here as "Metro Road") to provide a legal, structured and sustainable facility for trail and quad bike riders in the greater Perth metropolitan area.

This Project

This project has resulted from the recognition of the need to create a large-scale regional facility for trail bike riders[1], the Off Road Vehicle Land Planning Study which identified the Metro Road area as the most suitable location[2], and the need to better manage existing and future rider activity in the area for purposes of safety, capacity and environmental sustainability.

Off-Road Vehicle Areas

Off Road Vehicle Areas are a legal instrument enabled by the Control of Vehicles (Off-road Areas) Act 1978 ("The Act"). They are areas designated to provide a legal opportunity to ride on public land for riders of non-road-registered motorcycles and quad bikes, and people (including juniors) who do not hold a rider's licence.

The purpose of these areas is twofold:

1. To lessen the incidence of illegal riding of unregistered bikes in state forests, national parks and other areas where environmental and social concerns are felt,
2. To provide facilities for a popular and growing outdoor recreation activity.

As such they play an important element in the control of trail and quad bike riding in Western Australia.

Eight such areas were gazetted when the Act was proclaimed in 1978, however the increasing suburban footprint and liability fears arising from the insurance crisis of the early 2000s saw several of these close and one (Chidlow) removed from public access via an exclusive lease to a motocross club. The net result is that there is now less total area gazetted for Off Road Vehicle use than there was in 1978, despite a large increase in the number of bikes and riders.

This problem was identified in the State Trail Bike Strategy, with the recommendation (2.021) that existing ORV areas be redeveloped with planned facility design. To date, two such redevelopments have occurred – the York and Pinjar Motorcycle Areas – and the positive results confirm the benefits of this model.

The Act specifies that the relevant Local Government Authority is to be responsible for the administration of the Act within its boundaries. In the case of the Pinjar and Gnangara ORV Areas (which are both within State Forests), this responsibility has been transferred to the Department of Parks and Wildlife.

The Metro Road precinct is also wholly within State Forest and Parks and Wildlife expect to retain administrative control.

[1] State Trail Bike Strategy: Recommendation 2.022
[2] Swan-Collie Offroad Vehicle Land Use Plan 2011, Department of Environment and Conservation

This Concept Plan

Historically, Off Road Vehicle Areas were simply identified on a map as places where people could ride. There was little or no attempt to develop or manage them as recreational facilities, and the lack of structure, user guidance and maintenance resulted in a predictable degradation to a state where they became unattractive, under utilised and in many cases unsafe areas. All of which means the areas do not meet their objectives.

Trail bike riders typically associate terms like 'freedom' and 'exploration' with their objectives in riding[3]. This can be seen as being at odds with the concept of a planned and structured facility, but the two concepts are not mutually exclusive.

What is required is a planned approach to creating and managing a facility that can evolve to provide an expanding inventory of trails. The scheduled introduction of new trails will:

1. Provide new opportunities for exploration
2. Cater for growth
3. More effectively disperse riders for safety and trail sustainability
4. Reduce the need for additional Off Road Vehicle Areas to be developed to cater for the same region

The design and development of a sustainable ORV area therefore requires an iterative approach.

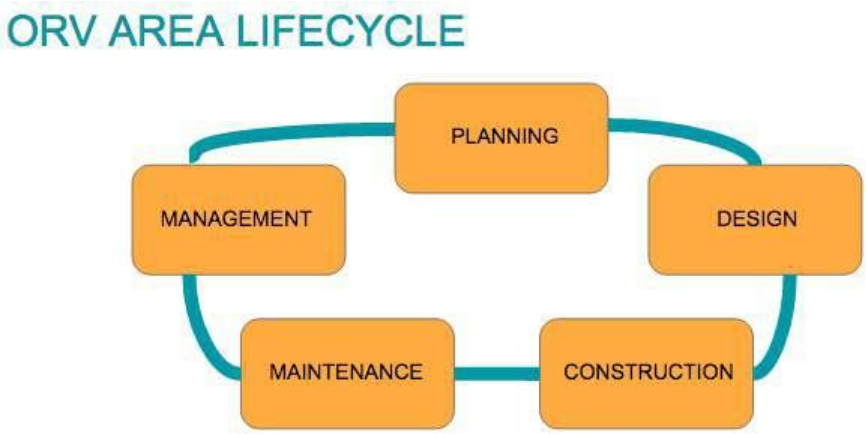


Figure 1: The ORV Area Lifecycle

The initial planning stage is perhaps the most important, as this stage is the most influential on the eventual outcome of the area. With this in mind, the objectives of this Concept Plan are:

1. To address issues of risk.
2. To consider supply and demand to establish the appropriate positioning for the Metro Road area within the context of the greater Perth metropolitan region
3. To create an area development plan that will deliver:
    a. a satisfying experience for riders and their families
    b. a safe environment within the constraints of the inherent risks associated with off road vehicle use
    c. a sustainable environment that can maintain its attractiveness over time
    d. the ability to cater for increasing number of users
4. To establish funding and management mechanisms that place the area on a sustainable footing.
5. To transition the area from its current, unmanaged, state to achieve the long-term vision

[3] State Trail Bike Strategy, p71

Department of Parks & Wildlife - Trail Development Process

In a bid to standardise the way trails proposals are evaluated, approved and implemented across Department of Parks and Wildlife estate the Department has developed a planning framework that is applicable to all forms of recreational trails. Building rigour into the development process will ensure that trail proposals are transformed into professional and sustainable products on the ground.

STAGE	OUTCOME	
1 PROPOSAL	The proposed area is either supported in principle for trail development, or is not supported due to environmental, social or cultural constraints. Or proposal to identify suitable areas.	Desktop
2. FRAMEWORK	A project outline, developed by project steering group (stakeholders), including: project objectives, project management model, stakeholder roles, target market, requirements, standards, execution, and ongoing trail management model.	
3 SITE ASSESSMENT	Undertake a broad scale study of the area and identify constraints, soil types, vegetation etc.	Field
4 CONCEPT PLANNING	Identify opportunities and conceptual trail plan including infrastructure requirements produced. Broad trail corridors are physically flagged in the field.	
5 CORRIDOR EVALUATION	Detailed assessment of corridor.	
6 DETAILED DESIGN	Detailed trail design produced and physically flagged in the field, including: trail classifications, technical trail features (TTFs), construction types and specifications.	
7 CONSTRUCTION	Trail is constructed in line with the detailed design.	
8 MANAGEMENT	Management plan implemented detailing maintenance and monitoring requirements.	

Figure 2: Trail Development Process Summary

To date a Steering Group consisting of representatives from the Recreational Trailbike Riders' Association, Motorcycling WA, Department of Sport & Recreation and Department of Parks & Wildlife have convened to develop the Framework for proposed trails development (*see Appendix 1*). The Department of Parks & Wildlife are undertaking initial environmental impact and site assessments.

This Concept Plan is Stage 4: Concept Plan in the process.

Scope

The full scope of this project is as defined in the Parks & Wildlife Development Framework (Appendix 1). The project area for this Plan is the Flint forest block, bounded by Brookton Highway, Flint Conservation Park (proposed), McCallum Road and Watershed Road.

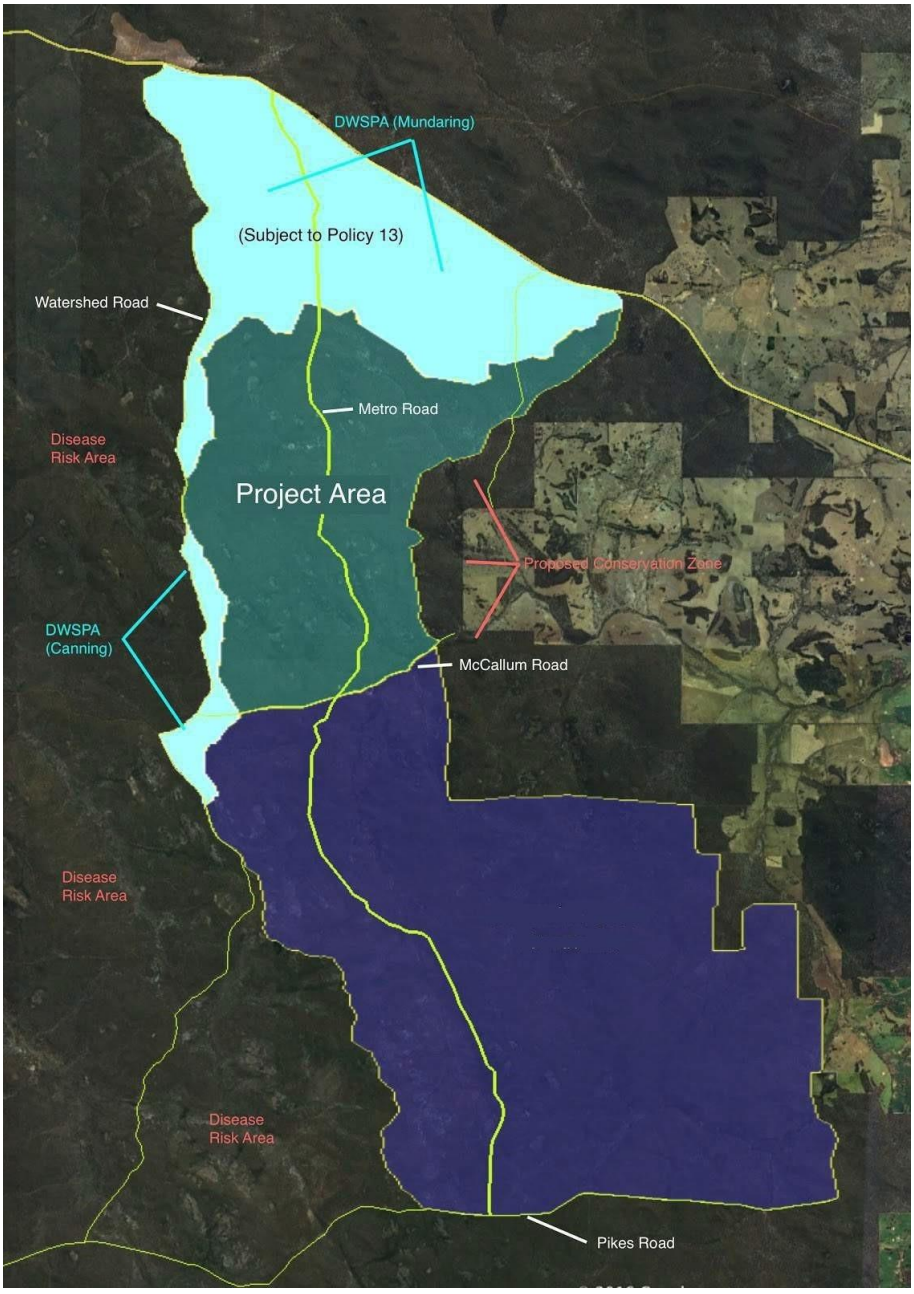


Figure 2: Project Area

Guiding Principles

The development of a successful ORV area requires the successful application of:

- **Providing for the riders' needs**

Satisfied riders recognise they have something good that they can be proud of and look after. They are more likely to comply with rules, peer pressure for compliance increases, volunteering increases, vandalism and hoon behaviour decreases as does the need for enforcement. Management spends less time dealing with problems and more time developing opportunities.

This Plan - *will define the targeted user segments (types of riders) and their requirements and then identify experiences that can be reasonably and sustainably provided, aiming for varied, high-quality and high-fun factor - Part 2 Requirements.*

➢ **Designing for sustainability**

Sustainability of the experience requires sustainability of the trails within the constraints of available resources and funding. Effective trail design delivers trails that flow in harmony with the landscape; that have effective drainage to minimise impact and erosion; that are durable and maintainable.

When properly managed and maintained the environment will be protected; the quality of the riding experience will be preserved, management and maintenance will be cost-effective and volunteers will be managed and available.

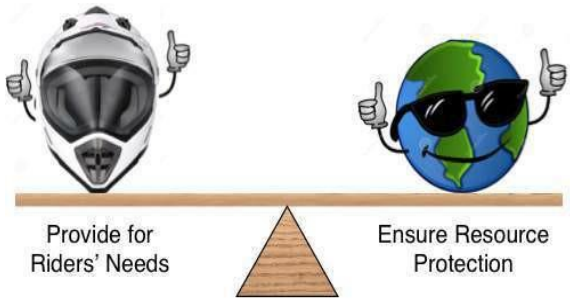


Figure 3: Balancing requirements

The area and trails inevitably require adaptive management for rehabilitation or as use patterns and user needs change. Some experiences (eg hills) will be less sustainable but provide high value and require balancing mitigation.

This Plan - *will design the area and provide trail planning principles for land and experience sustainability and provide management and budgeting recommendations for resource and financial sustainability - Part 3 Area Concept Plan and Part 4 Management*

➢ **Developing and implementing an effective operations and maintenance program**

The trail system needs regular evaluation and maintenance and the application of timely adaptive management to prevent escalation of problems. Trails are built on a dynamic landscape so the trail and its management must be dynamic; there is always need for change. This requires volunteers, materials, equipment and funding.

The users require ongoing information and education to increase compliance with area rules and rider code-of-conduct.

This Plan - *will outline management, inspection, maintenance, risk management, signage, volunteer, funding, education and enforcement plans - Part 4 Management*

EXECUTIVE SUMMARY

To be written for the final draft.

CONTEXT

Project Background

"Metro Road" is the colloquial name given to a region of undulating Wandoo native woodland approximately 75 km Southeast of Perth.

The area has a long history of trail bike use, having been used for competitive enduro events from the early 1970's until 2006. In the early days the events were held in the mid section and to the north near the Brookton Hwy. In more recent times the area was restricted to the southern area closer to Albany Hwy.

In addition to organised events, the area has been extensively used for recreational riding, much of it by unlicensed riders and / or unregistered vehicles in contravention of the CALM Act 2002 and Road Traffic Act 1974.

While the area is not officially sanctioned, it has been seen by land managers throughout the metropolitan and peri-urban areas as a 'least worst' option to direct trail and quad bike riders who might otherwise be riding in areas with greater conservation values and / or on designated non-motorised trails. As a result, Parks & Wildlife and local Shire Rangers often (unofficially) suggest the area to riders who are intercepted while riding in problematic areas.

Use of the area has been increasing, and in the absence of any planning or management there is significant damage to wandoo vegetation occurring, and an increasing safety risk.

There is an inconsistent approach by visitors to rubbish. Some do the right thing, others discard their rubbish on site.

Some camping occurs, particularly in the southern section, and this is not always associated with riding activities. Rave parties have been known to be held in the area.

The area has the potential to support several of the State Trail Bike Strategy recommendations:

- The development of two additional ORV areas – south metro and east / hills (Rec 2.022)
- An additional regional ORV area (Rec 2.023)
- Designated trail systems that include some limited sections open to Junior licence holders (Rec 2.026)
- Trails and circuits within ORV areas for quads only and consider areas or routes suitable for a 'destination trail' for quads (Rec 2.027)
- Selected public trails as ORV areas so that they can be used by ORV-registered vehicles and junior riders to deliver the destination trail ride concept to family groups (Rec 2.028)

The Offroad Vehicle Land Planning Study commissioned by DEC in 2011 identified the Metro Road area as the most suitable location for development as a sanctioned trail and quad bike riding precinct.

A 16km signed 'Pilot' Trail was developed in 2012 to test sustainable development principles. The Pilot Trail has been monitored and maintained and evaluation has been positive. A 'Traker' Trail counter was installed and recorded 5,284 passes between May 2012 and August 2014. An online survey of riders reported over two-thirds of rider respondents felt that the trail was the right length and degree of difficulty. 97% claimed to have ridden in the 'preferred direction' of the trail.

Regulatory Environment

An understanding of the regulatory environment that applies to off road vehicle use is helpful in framing the significance of this project. Relevant regulations include:

- Control of Vehicles (Offroad Areas) Act 1978
- Road Traffic Act 1974
- Department of Parks and Wildlife:
    - Conservation and Land Management Act 2002
    - Policy 18: Recreation, Tourism and Visitor Services
    - Good Neighbour Policy 2007
    - Policy 53 Visitor Risk Management
- Department of Water
    - Metropolitan Water Sewerage and Drainage Act
    - Policy 13: Recreation within public drinking water sources areas on Crown Land

Control of Vehicles (Off-road Areas) Act 1978

WA is unique amongst Australian states in that it is the only state that declares Off Road Vehicle Areas (ORVAs) on public land for the benefit of riders of bikes and quads that are not road registered, and for riders, especially juniors, who do not possess a rider's licence.

The mechanism for this is the Control Of Vehicles (Off-Road Areas) Act 1978.

The Act was proclaimed in 1978 when the growing popularity of trail bike riding and concerns over social and environmental impact prompted the need for some legislative control over the activity.

The intention of the Act was to enable Local Government Authorities to declare prohibited areas where the riding of non road registered vehicles could be disallowed, while establishing more suitable areas where the activity could take place. Vehicles must be ORV registered, which provides access to the gazetted ORVAs as well as vehicle identification which can aid in recovery of stolen vehicles. Registration costs $15 per year.

Initially seven areas were gazetted, however several of these were subsequently de-gazetted due to the expansion of the metropolitan area and/ or concerns over public liability.

There are currently five designated off road vehicle areas for riders from the Perth metropolitan region and one small area in York. These areas are:

AREA	APPROX SIZE	DESIGNATED FOR:
Lancelin (inc Ledge Point)	400 Ha	ORVs of all classes and sizes, including buggies
Gnangara	350 Ha	Motorcycles, Quads
Pinjar	320 Ha	Motorcycles, Quads
Chidlow[4]	N/A	Junior MX
Medina (Kwinana)	20 Ha	Motorcycles
York	2 Ha	Motorcycles

[4] Vested in the Junior Motocross Club – juniors only motocross track and not available to the public.

It can be seen that at a potential 4,200 Ha, the Metro Road project area dwarfs all other Off Road Areas within the Perth metropolitan area.

The Control of Vehicles (Off Road Areas) Act 1978 (CVOAA) is administered by the Department of Local Government and is guided by an Advisory Committee consisting of representatives from Local Government, off road vehicle and 4WD users, and the agency responsible for administering the CALM Act 1984.

Metro Road Off-Road Vehicle Area - *the area based on the boundaries specified in this Concept Plan will need to be gazetted as a "Permitted Area" under the The Control of Vehicles (Off Road Areas) Act 1978. This would be proposed by the Department of Parks & Wildlife and supported by the Shire of Beverley. The Department of Local Government has advised that the Act itself does not need to extend to the whole of the Shire of Beverley but may be applied only to the area to be permitted. This will reduce any management responsibility under the Act for the Shire to enforce the Act across the whole Shire (unless they so wish). Appendix 2 provides Policy on Applications to Extend the Area of Operation of the Act and Applications for Permitted Areas.*

Road Traffic Act 1974

The Road Traffic Act governs rider licensing and vehicle registration. Riding a non road registered vehicle on a road , or riding without a valid rider's licence is an offence, and the Confiscation of Vehicles Bill 2016 provides harsh penalties, including permanent loss of the motor vehicle even for a first offence. The passage of this new Bill through Parliament in November 2016 has increased the importance and urgency of providing legal areas for riders who, by dint of their age, are not able to obtain a riders licence or ride a registered motorcycle.

Conservation and Land Management Act 2002

The Conservation and Land Management Act 2002 ('CALM Act') makes it an offence to ride 'or bring into' any non road registered vehicle on any estate managed by Parks and Wildlife. Like the Road Traffic Act this makes illegal any riding in State Forests by riders under licensable age.

Policy 18

Policy 18 governs Parks and Wildlife's approach to recreation on the estate managed by their agency. In broad terms, the policy encourages the most diverse recreational use possible, within the overriding consideration for sustainability and compatibility with other uses.

Good Neighbour Policy 2007

As a major land manager Parks and Wildlife has many thousands of neighbouring properties. The Good Neighbour Policy aims to build and maintain good relations with all of its neighbours, and to set out the way in which the Department deals with common cross-boundary issues.

Policy 53 Visitor Risk Management

Department of Parks and Wildlife also have a corporate responsibility for visitor risk management on the lands that it manages. Broadly speaking the department has a responsibility to plan and implement visitor facilities and activities to enhance visitor safety and adhere to relevant legislation, policies and standards so as to minimize the potential for injuries to visitors to CALM Act Lands.

Metropolitan Water Sewerage and Drainage By-laws 1981

The By-laws are intended to protect the quality of drinking water supplies and make it an offence to drive on any road that is not "graded, gravelled, sealed or primed" within a Drinking Water Surface Protection area. The southernmost portion of the Mundaring Catchment area extends 4.9 km from Brookton Highway along Metro Road.

Policy 13

Policy 13 is the Department of Water's policy on recreation within Public Drinking Water Areas. It lists trail bikes as an 'incompatible' activity in Reservoir Protection Zones and in P1 and P2 catchment areas.

Strategic Environment

The development of the Metro Road precinct is supportable on its own merits, but becomes more significant when viewed in the broader strategic context of trail and quad bike issues in Western Australia.

The WA State Trail Bike Strategy

Escalating community tensions and rider concerns over the perceived shrinkage of legitimate riding opportunities led to the development of the State Trail Bike Strategy in 2007. This project supports and aligns with many of the Strategy's recommendations (full detail available in *Appendix 3*).

Trail Riding Options

The options available to trail bike riders depend primarily on whether the rider (a) has a rider's licence and (b) is riding a road-registered motorcycle. In combination, this is deemed 'road legal'.

Road Legal

A *road legal* rider can legally ride on any trail or track that is open to the public. This includes old and overgrown tracks such as old logging roads, but not 'single trail' created by the riders or past events.

The options of riders who are not *road legal* are much more limited – private property with the consent of the owner, or gazetted Off Road Vehicle Areas.

The gazetted Off Road Areas have been listed above. Two broad options fit the definition of private property – club-leased motocross tracks and commercial ride parks.

Club Tracks

Several motocross clubs operate within the greater metropolitan area. These clubs lease properties and maintain circuits and facilities for use by members for competition and practice. Club membership can cost several hundred dollars per annum and there are restrictions on private practice, including the need to provide practice supervisors.

The advantage of club tracks is that they are purpose-designed, built and maintained for competitive motocross racing. They are inspected annually and must conform to international safety guidelines.

It is not anticipated that Metro Road would offer experiences for this segment of the market.

Commercial Ride Parks

Commercial Ride Parks are constructed facilities where the owners or occupiers of the land create a riding precinct and charge a fee for its use.

There are four main commercial ride parks within practical proximity to Perth:

Ride Park	Location	Hours from Perth	Size	Experience Provided
West Coast Trail Bike Park	Kirup	2	485Ha	Mostly single trail (80km) plus natural terrain motocross and junior circuits
West Moto Park	Wyalkatchem	2	40Ha	Motocross circuits, one enduro loop approx 10km
Dirt Riders' Heaven	Mogumber	1.5	60Ha	Motocross circuits
The Duck's Nuts	Popanyinning	1.75	40ha	Motocross circuits

Of these, all but Dirt Rider Heaven offer camping.

West Coast Trail Bike Park is the only facility with a focus on the trail riding experience. The other parks have a circuit-based focus.

Costs average around $50 per day for adults and $30 per day for teens. A family of two adults and two teens would expect to pay $150 plus for a day at any of these facilities.

The advantage of these commercial facilities is the provision of camping, the regular maintenance, and the constructed motocross circuits and (in the case of West Coast Trail Bike Park) constructed and maintained single trail. There is also an expectation of assistance in case of accident, and a sense of greater safety from one-way trails and a more managed environment.

The disadvantages are cost, distance, and lack of variety.

Metro Road can be positioned amongst these options as a place that is free to use and offers a more varied trail experience. It is not intended that Metro Road would compete with the commercial parks for the motocross experience market (refer *Positioning* in Part 3).

Summary: Regulatory & Strategic Environment - *The regulatory and strategic environment is favourable for the Metro Road area, with no identified regulatory obstacles. Metro Road complements the offerings of commercial ride parks, with the larger area providing the potential of a trail touring experience that cannot be matched by private providers.*

PART 1: SITE ASSESSMENT

Area Description

Name	Colloquially known as “Metro Road”
Location	Mundaring State Forest, south of Brookton Highway, east of Watershed Rd, west of Warrahdale Rd, extending to portions of Youraling State forest southwards towards Albany Hwy.
LGA	Project Area: Shire of Beverley Possible Future Area: Shires of Brookton, Wandering
Approx Area	Project Area: 4,226 Ha Possible Future Area: 10,050 Ha
Area Perimeter	Project Area: 36 km Possible Future Area: 50 km
Land Tenure	State Forest, vested in Conservation Commission of WA, under the management of Parks & Wildlife. Flint, Gibbs, and Brady Blocks. Area is under two mining tenements: Alcoa AML7000001 (western edge) and BHP Billiton AM 7000258 (bulk of the area). These are due to expire in 2024 and 2025 respectively. To the north of the Project Area is the southern extremity of the Mundaring Drinking Water Source Protection Area. This area is subject to Statewide Policy 13 and has currently been excluded.
Status	Currently treated as a ‘least worst option’ by Parks and Wildlife. Rangers unofficially refer riders to this area when they are intercepted riding in more sensitive areas.
Terrain	Generally flat or gently undulating. Ground surface varies from sand to laterite and laterite gravel.
Facilities	None. In the absence of constructed or designate car parking / unloading areas users have created several unofficial areas for parking. The main three such areas are within the Mundaring water catchment area. It is estimated that approximately 65,000 m^2 of vegetation has been lost through the uncontrolled expansion of unauthorised parking / unloading areas over the years.
Phone Coverage	Inconsistent. Available in some areas at some times, but majority is no coverage.
Maintenance	Metro Road itself is occasionally graded, however with the exception of portions of the Pilot Trail Bike Trail, none of the trails receive any maintenance. The RTRA has undertaken cleanups of the car park and road verge areas with the financial and resource support of Parks and Wildlife.

Site Assessment

Overview

Metro Road was assessed in the Off Road Vehicle Land Use Planning study (DEC, 2011) as being the most suitable area for off road vehicle use in the Swan – Collie region. The reasons for this are apparent when viewed in the context of the environmental constraints map.

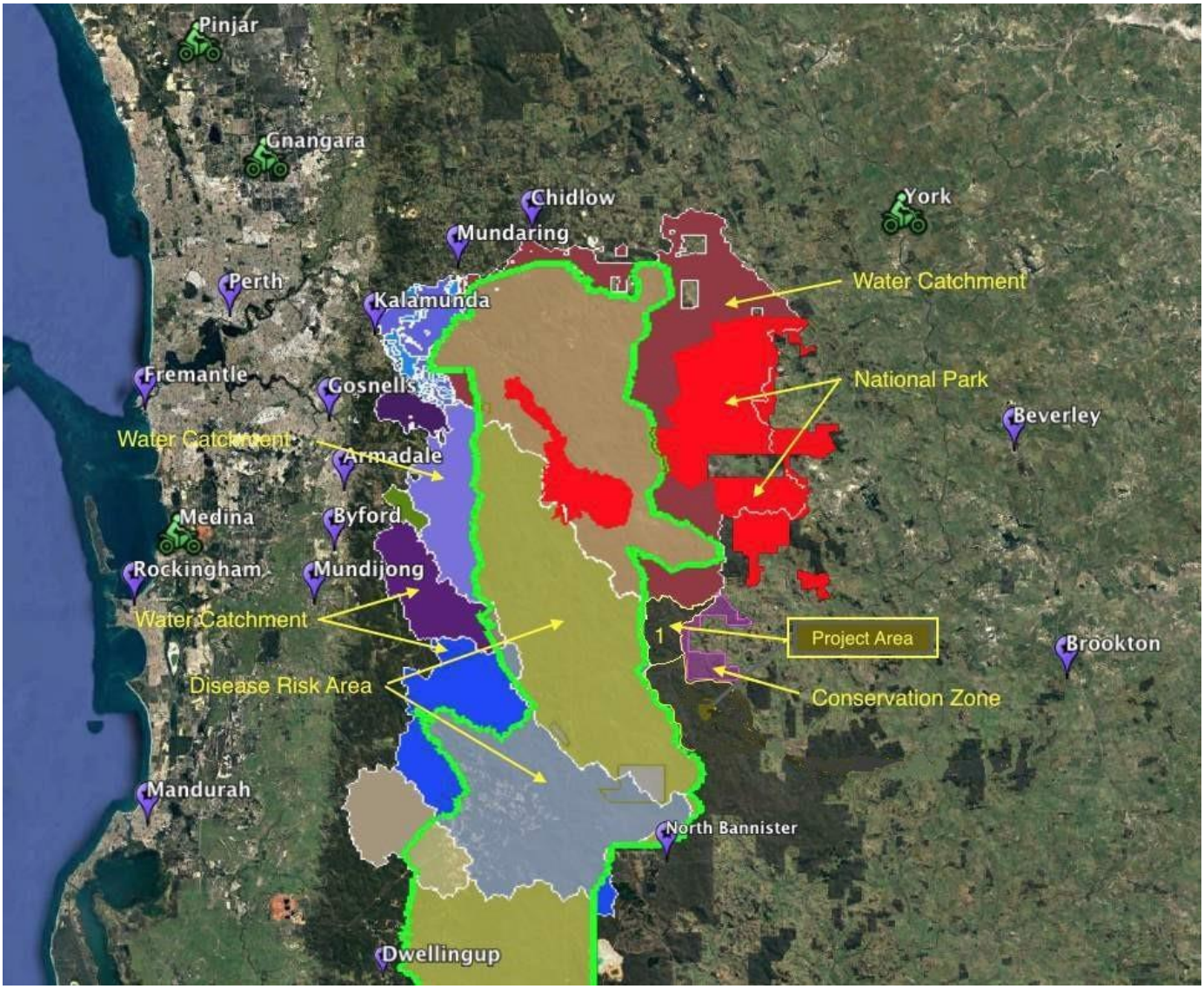


Figure 4: Regional Constraints Overview

When broad constraints such as Disease Risk Areas, Water Catchment and National Parks are considered, the Metro Road area between Brookton Highway and Albany Highway can be seen as the only viable State Forest area north of Dwellingup.

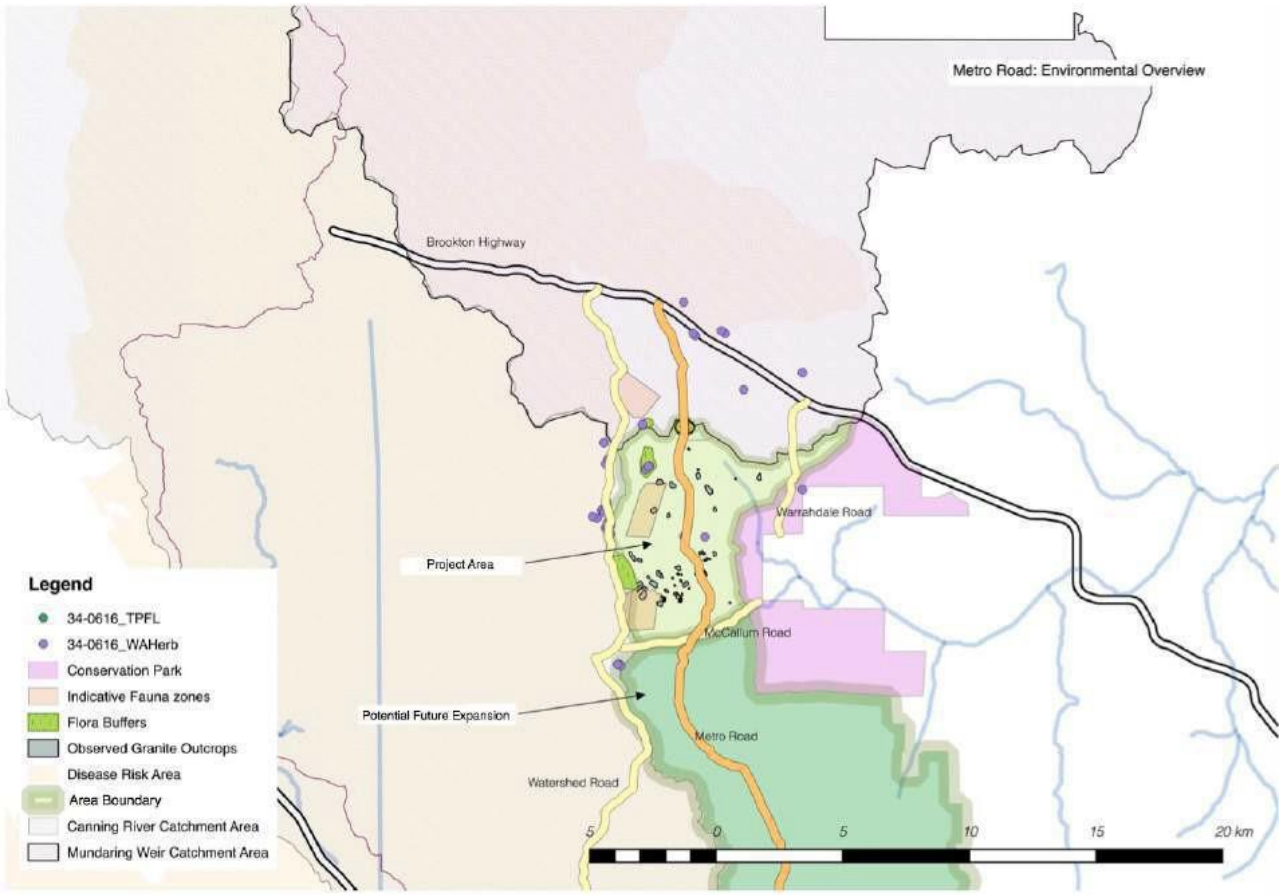


Figure 5: Environmental Overview

Disease Risk Areas

The eastern boundary of the Disease Risk Area aligns roughly with Watershed Road which is the western boundary of the subject area.

Flora

Seven flora buffer zones have been identified within the Project Area, and two indicative fauna habitat areas.

There are two locations identified on the Threatened and Priority Flora List (TPFL):

- Priority Three: Poorly-known species – Tetratheca similis
- Priority Four: Rare, Near Threatened and other species in need of monitoring – Stylidium striatum

Parks and Wildlife is currently undertaking a flora survey which will update this data.

Fauna

Two indicative fauna zones exist within the Project Area.

Hygiene Surveys

The last known hygiene survey was conducted in 2011 for the Pilot Trail development. This indicated a status of uninfested (protectable) in relation to the trail alignment proposed at the time.

It is expected that further hygiene assessment will be required based on proposed alignments for new trails.

Water Protection

The Canning Drinking Water Source Protection Area (DWSPA) follows Watershed Road but extends eastward by up to 900m. While Watershed Road itself is a gravelled road and therefore access is permitted within the DWSPA, any trails or tracks connecting to Watershed Road would need to cross the DWSPA. For this reason, the western boundary of the riding precinct has been aligned to the Canning DWSPA boundary.

The Mundaring DWSPA extends south of Brookton Highway by approximately 6km along Metro Road. As can be seen by the network of current trails, the area to the immediate south of Brookton Highway is the most extensively used, largely due to its proximity to the highway for tow vehicles.

Given the current boundaries of the Mundaring DWSPA and the deemed incompatibility of motorised recreation under Policy 13, the Project Area has been drawn to align to the southern boundary of the Mundaring DWSPA.

There is an advantage to this, in that it relieves any responsibility for the management and remediation of the land within the DWSPA, enabling the creation of a new trailhead on a 'greenfield' location. However it is also the case that positioning the trailheads (and parking / unloading areas) closer to Brookton Highway would be both more convenient for visitor and safer as there would be less contention between tow vehicles and motorcycles on Metro Road itself. Accordingly, the option to relocate the trailheads closer to Brookton Highway should be reserved as an option in the event that there is any short term change to water protection policy, or any re-drawing of the southern boundary of the Mundaring DWSPA.

Environmentally Sensitive Areas

There are no designated Environmentally Sensitive Areas (ESAs) within the proposed Project Area.

There are two designated environmentally sensitive areas (ESAs) in the southern part of the possible future area. These cover approximately 1.6 Ha combined.

Aboriginal Heritage

A search of the Department of Aboriginal Affairs Aboriginal Heritage Inquiry System reveals two sites of interest in the south-west portion of the proposed Project Area:

Site ID	Site Name	Status	Site Type
3497	Metro Road	Registered Site	Engraving
3496	Metro Road Factory	Lodged	Artefacts / Scatter, Engraving, Quarry

An existing trail crosses the western portion of Site 3496, and it is tentatively proposed to use this trail as part of a route. Further investigation will be required to determine whether a formal heritage survey will be required.

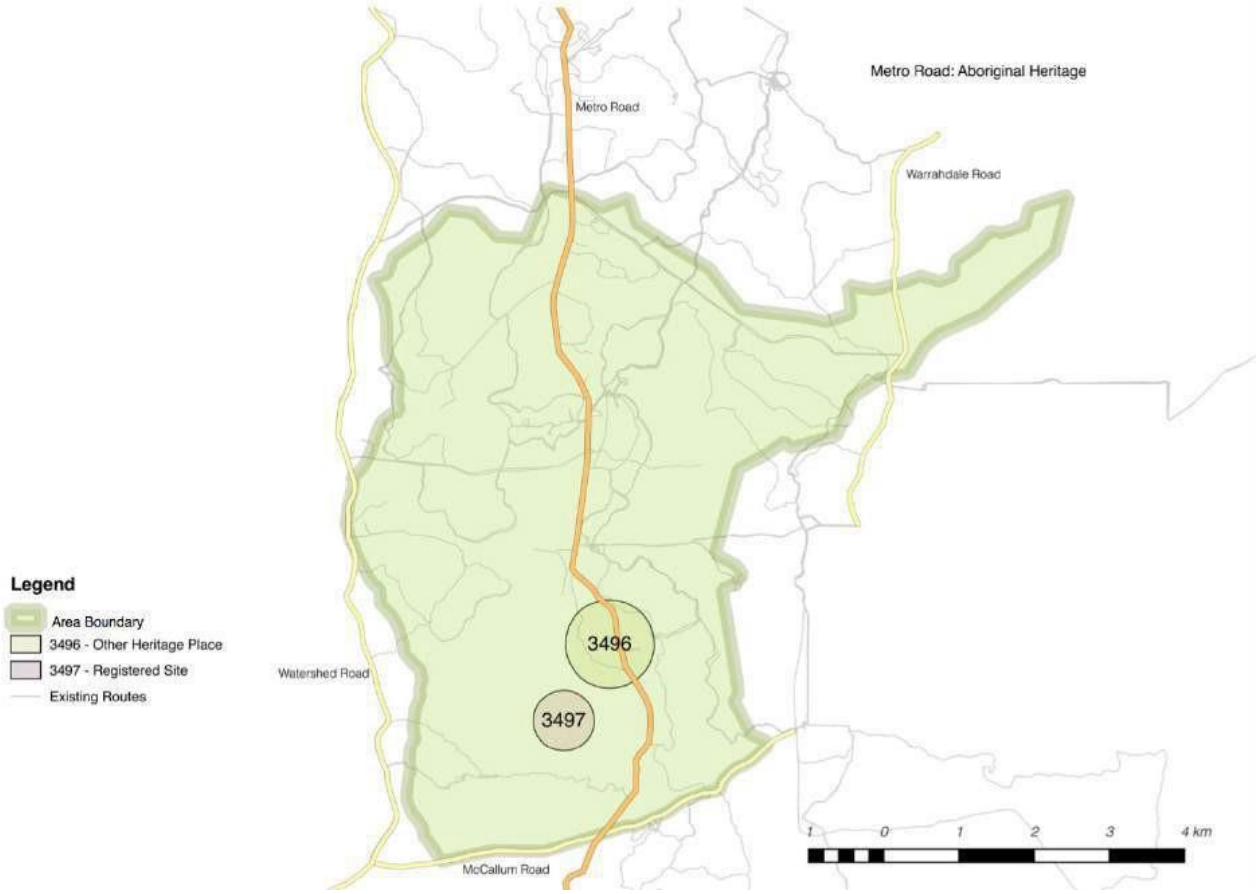


Figure 6: Aboriginal heritage sites

Cultural Significance

There are no known areas of non-aboriginal cultural significance.

Burn Plans

Parks & Wildlife have an Autumn 2017 burn planned which would impact the north-western quadrant of the proposed Project Area, including about two thirds of the current Pilot Trail. This will have a significant impact on existing trail signage.

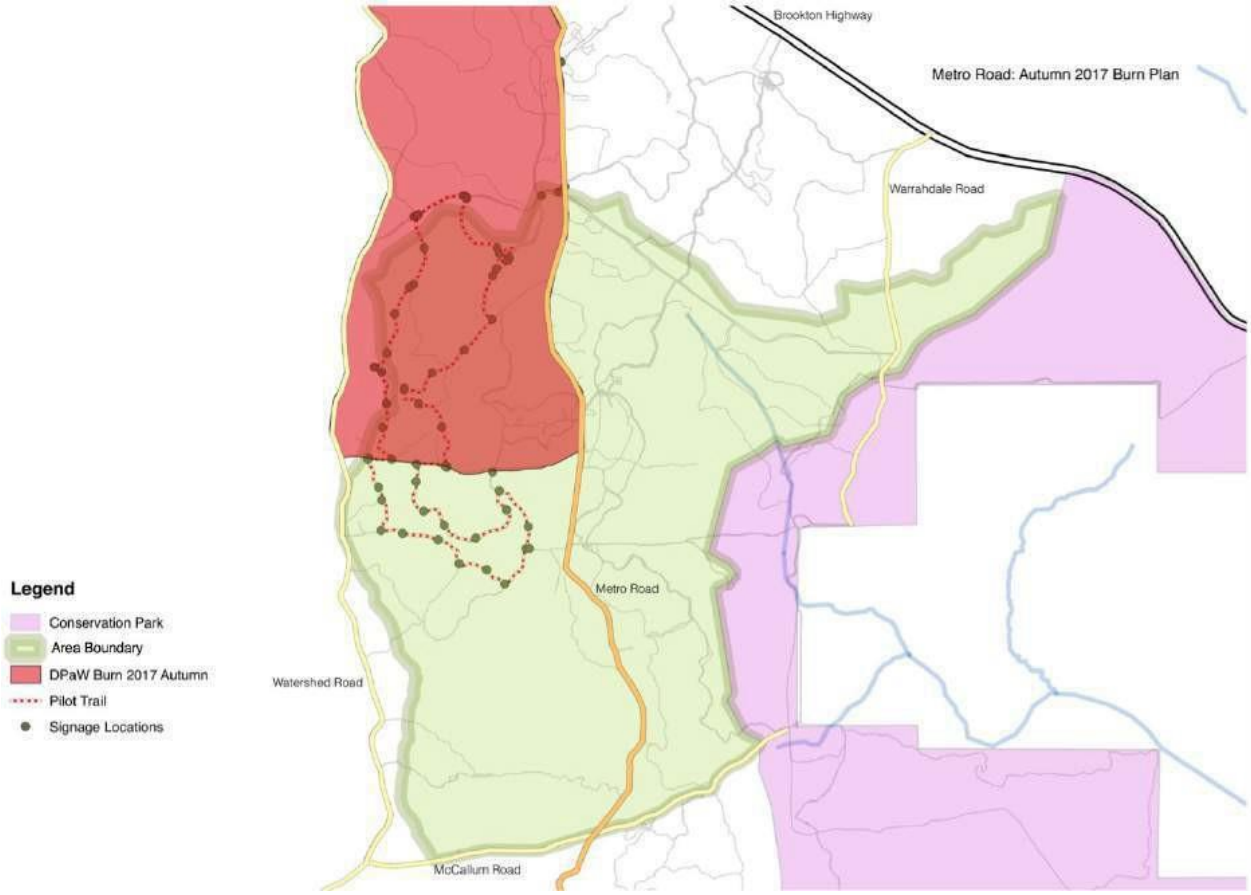


Figure 7: Burn Plan

Neighbouring Properties

Private property lies to the east and north-east of the proposed Project Area. The closest assumed residence is 6 kilometres from the proposed Project Area trailhead / parking area and 2 kilometres from the closest trail point.

Winds tend to be easterly in the morning and westerly in the afternoon, mainly in Spring and Winter, with Autumn having lighter winds and Summer being predominantly easterly. Wind measurements from Wagin have been used as a proxy, being the closest non-coastal weather data provided by the Bureau of Meteorology.

The combination of buffer zones, proposed trailhead and trail locations, and generally favourable wind conditions suggests that noise is unlikely to be a concern.

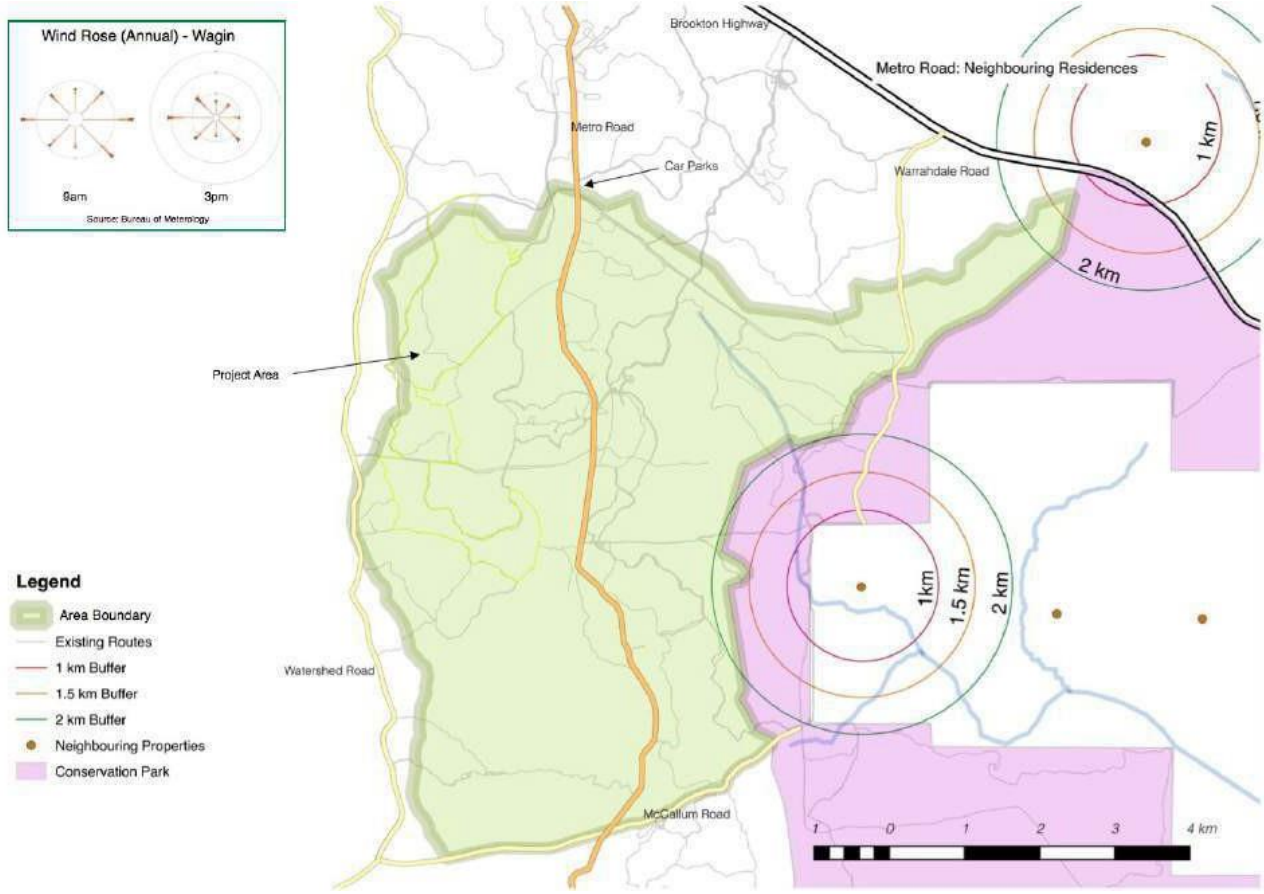


Figure 8: Distance to private properties

Summary: Site Assessment - *Pending further environmental surveys being conducted by Parks & Wildlife, the site assessment is positive. Environmentally sensitive areas can be avoided through trail alignment, the subject area is outside Water Catchment and Disease Risk Areas and there is adequate distance between the proposed area and the nearest neighbours.*

Constraints

As outlined in the Off Road Vehicle Land Planning Study 2011, few constraints apply to the Metro Road area, making it the most attractive option in the near metropolitan area.

While the area covers two mining leases the Department of Mines and Petroleum has consulted with affected mining interests and has determined that this proposal raises no significant issues with respect to mineral and petroleum resources, geothermal energy, and basic raw materials. However the Department notes that in the longer term, mining may be proposed within this area and this needs to be acknowledged.

Given the lack of certainty regarding when, if, and at what scale mining may occur it is recommended that this be discarded as a constraint for current and medium-term planning.

All other environmental and heritage constraints have been dealt with under the relevant headings.

Summary: Constraints

- ❑ Disease risk - nil to negligible as outside disk risk area.
- ❑ Flora - Seven flora buffer zones have been identified within the Project Area, and two indicative fauna habitat areas.
- ❑ Fauna - Two indicative fauna zones exist within the Project Area.
- ❑ Hygiene Surveys - further hygiene assessment will be required based on proposed alignments for new trails.
- ❑ Water protection - the western boundary of the riding precinct has been aligned to the Canning DWSPA boundary and the northern boundary has been aligned to the Mundaring DWSPA boundary.
- ❑ Aboriginal heritage - two sites of interest in the south-west portion of the proposed Project Area.
- ❑ Cultural significance - nil.
- ❑ Environmentally sensitive areas - nil within the proposed Project Area.
- ❑ Burn plan - Autumn 2017 burn planned which would impact the north-western quadrant of the proposed Project Area, including about two thirds of the current Pilot Trail.
- ❑ Neighbouring properties - The closest assumed residence is 6 kilometres from the proposed Project Area trailhead / parking area and 2 kilometres from the closest trail point. The combination of buffer zones, proposed trailhead and trail locations, and generally favourable wind conditions suggests that noise is unlikely to be a concern.
- ❑ Mining leases - two leases on the area but no plans in the short or medium term.

Current Utilisation

There is no definitive research to quantify or classify current utilisation. Observation indicates that a mix of road registered trail bikes and unregistered trail and motocross bikes are the major vehicles using the area, with quad bikes and mini / fun bikes representing a large minority.

Social and family groups are prevalent, with group sizes from two to six most common.

Some camping occurs, generally well south of the three main car parks. With the exception of the campers, the typical Metro Road visit duration is (again by observation rather than research) half a day.

User-created motocross-style circuits have been created adjacent to each of the unofficial car parking areas. Like the car parks themselves, these circuits have expanded in an uncontrolled way over the years as users create new sections of track to bypass whooped out segments or to extend the circuit.

Situational Analysis

Strengths

Proximity to Perth

- Metro Road is a practical distance for a half day outing, being less than 1.5 hours drive from most suburbs in Perth.

Origin	Distance	Time[5]
Perth GPO	79 km	1h 19 m
Rockingham	96 km	1h 25 m
Mandurah	118 km	1h 32m
Armadale	59 km	0h 54m
Joondalup	106 km	1h 27m
Midland	75 km	1h 7m
Canning Vale	70 km	1h 5m

Area Size

- Ability to provide multiple loop trails, each of 20+ kilometres, potential to rotate trails with progressive new developments.
- Ability to cater for a variety of different ride experiences and skill levels
- Room for riders to disperse, for safety, quality of experience
- Opportunity to create a sense of exploration, with multiple configurations of trails into routes

Varied and Attractive Vegetation

- Well vegetated with a variety of scenic landscapes.
- Some elevation changes with aesthetic as well as ride flow attraction

Relatively Stable Surface

- Compared with the coastal plain, the laterite-based surface is firmer, more durable, easier and more satisfying to ride – especially for younger riders on small wheeled bikes.

Historic Use

- A pragmatic approach to sanctioning selected former enduro tracks and single-trail could see a substantial trails inventory established quickly and with little or no displacement of vegetation.
- Already well known and well used by the WA trail bike riding community.

[5] Travel distance and time: Apple Maps

Weaknesses

Historic Use

- Having been used constantly for several decades, and with no trails maintenance, many of the existing trails are in poor condition.
- Long-term visitors to the area may rail against trail closures or designation of travel direction. Or, for that matter, any 'rules' that seek to impose order on what has been a totally unstructured area.
- Network of existing and former trails creates many intersections – will make one-way system difficult to enforce.

Restrictions due to Mundaring Water Catchment

- Under current policy, there is no opportunity to position car park/trailheads adjacent to Brookton Highway for sealed road access or to combine parking with toilet facilities along the highway.
- Car park positioned 4 km along Metro Road prevents opportunity to separate cars and motorcycles
- Emergency egress compromised in case of fire
- High likelihood of users parking / unloading in other than designated car parks

Patchy phone coverage

Opportunities

The significant opportunity at Metro Road is to transform the area into the pre-eminent large scale regional trail riding area that deliver a different riding experience to Pinjar and other ORV areas by focusing on trails rather than circuits.

This would naturally attract riders away from more environmentally sensitive areas and would help protect water catchment and disease risk areas.

Metro Road also presents the opportunity to pilot the concept of an Off Road Vehicle Area being described as one or more trails, rather than the area perimeter as is currently the case.

Specifically this project has the opportunity to:

- Plan, develop and promote a legal, high quality, sustainable, low maintenance and permanent regional trail riding precinct;
- Provide a single use trail network of predominantly single track riding opportunities;
- Provide a trail network and associated infrastructure to significantly expand the inventory of legal riding opportunities for families and junior riders;
- Restore damaged areas of vegetation and adopt a more environmentally sustainable model for the area to protect environmental and heritage values;
- Design and build a trail network that protects the environmental and other values of the project area, and the amenity of neighbouring landowners.
- Provide for trail-oriented riding disciplines that deliver a different riding experience to Pinjar and other ORV areas by focusing on trails rather than circuits.
- Provide camping facilities and multi-day use not available in other public ORV areas..
- Help reduce the amount of illegal riding in more environmentally sensitive areas.
- Improve safety of riders in the area, by progressively replacing the current proliferation of high-speed logging roads with purpose-built, signed trails.
- Improve safety for riders currently riding elsewhere, by providing a safer alternative with a better riding experience.
- Develop a model for large scale, trail-based recreation facilities that can be utilised at other suitable locations.

Threats

- Potential for future mining
- Destruction of signage and any built infrastructure by fire
- Creation of unsanctioned trails by riders within and beyond designated area

STRENGTHS	WEAKNESSES
❑ Close proximity to Perth - 1.5 hour drive ❑ Size - 10 times the size of other ORVAs ❑ Ability to cater for a different experiences and skill levels ❑ Room for riders to disperse, for safety, quality of experience ❑ Opportunity to create a sense of exploration, with multiple configurations of trails ❑ Varied and attractive vegetation ❑ Relatively stable surface ❑ Historic use with existing trail networks and favourably known to the trail bike riding community.	❑ Historic use with unmaintained and degraded trails. ❑ Long-term users may object to any 'rules' that seek to impose order. ❑ Existing and former trails has many intersections. ❑ Exclusion of area adjacent to Brookton Hwy (Water Catchment) means users will need to travel further down Metro Road to access car parks, trails and facilities. ❑ Patchy phone coverage
OPPORTUNITIES	**THREATS**
❑ Transform the area into the pre-eminent large scale regional trail riding area. ❑ Deliver a different riding experience to Pinjar and other ORV areas by focusing on trails rather than circuits. ❑ Predominantly single track riding opportunities ❑ Legal riding opportunities for families and junior riders. ❑ Restore damaged areas of vegetation and adopt a more environmentally sustainable model. ❑ Provide camping facilities and multi-day use. ❑ Improve safety of riders.	❑ Potential for future mining ❑ Damage by fire ❑ Unsanctioned trails within and beyond designated area

Current Management and Budgets

Budgets

The is no current known Parks & Wildlife budget for management or maintenance at Metro Road. In past years Parks & Wildlife has funded the RTRA to conduct cleanups of the area.

The Beverley Shire's expenditure on road maintenance is not known.

PART 2: RIDER SEGMENTS & REQUIREMENTS

Market Size

Off Road Vehicle registration captures only a small proportion of the number of non-road-registered bikes and quads and there is no 'central registry' of vehicles. In 2008, the State Trail Bike Strategy estimated the total number of trail bikes and quads in Western Australia at 50,000.

An updated estimate based on an average of 2013-2015 new bike sales (FCAI data), multiplied by an assumed ten year average usable life, indicates **58,000** adventure, trail, motocross, quad and mini bikes in Western Australia.

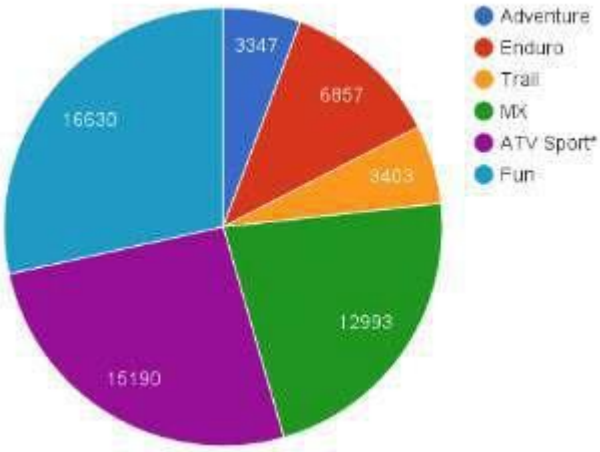


Figure 9: Derived Estimates of off-road motorcycles and quad bikes in Western Australia

Rider Segmentation

Creating distinctions simply by type of motorcycle has only limited use – people can use one type of bike for a variety of different purposes.

The distinction between registered / licenced and unregistered / unlicensed does not of itself assist in the segmentation. It is more valuable to segment the market based on the different riding experiences sought.

Trail bike riders generally seek the same type of outdoor recreational experience as many other outdoor recreators. Freedom, getting away from it all, adventure, exploring, stress relief, relaxation, challenge, testing yourself, skills improvement, adrenalin, thrill, excitement, getting off the beaten track, exercise and fitness and enjoying the outdoors, environment and scenery are all motivations for trail bike riding.

Based on the user segments identified in the Metro Road "Framework for proposed trail development" (Appendix 1) the following are the different riding experiences and rider segments to be used in the development of area facilities.

- Single track explorers
- Trail bike tourers
- Family explorers
- Quad tourers
- Mini riders
- Novices

SingleTrack Explorers

Challenging riding centred around a particular area. Bikes are:

a) Road registered trail / enduro bikes (and licensed riders) as per Trail Bike Tourers - legal if ridden on public open road or trails
b) Non road registered trail bikes and motocross bikes - not legal unless ORV registered and operating in a gazetted ORV area.

"Single trail" sections where the track is literally only the width of a motorcycle tyre tread and winds its way through the bush are highly valued as these test the skill of the rider and can be especially satisfying to ride. Single track exploring is more about the fun and challenge than the destination. Gnarly hills and tight single-trail provide the challenge these riders crave.

Research undertaken in Western Australia and in Victoria shows a preference for single track trails.

The 'Ride for Tomorrow' research (DSE Victoria Trail Bike Initiative) made the following comments:

> *"Single track riding delivers a sense of freedom, self indulgence, provides the opportunity for riders to express themselves, demonstrate leadership, be admired, and most powerful of all, gives them a sense of control. All things that general touring cannot. Asking riders to give up single track in favour of general touring removes a significant amount of the emotional gratification they currently feel."*

This observation is an important consideration in the conceptual design of Metro Road. Many kilometres of former enduro single track trails exists throughout the precinct. These are still regularly used by riders and comprise part of the Pilot Trail Bike Trail. With decades of use and no maintenance many of these trails are now whooped out and wider than necessary, yet they are still popular because of the unique flow and challenge that single-track delivers.

By far the most common request from riders is for quality, one-way, single track. Satisfying this need at Metro Road will require a pragmatic approach to trail rehabilitation and new trails development.

Priority - High.

Family Explorers

Trail bike touring, on a smaller scale, for family groups. Currently this segment rides illegally outside of gazetted off-road vehicle areas as there are no legal areas large enough to support it and therefore all such riding on Parks and Wildlife managed land is currently in contravention of the CALM Act[6].

The size of Metro Road and the potential of the longer trails will provide the first legal long trail experience for families including unlicensed riders and non-road registered bikes. This group is the primary reason for seeking gazettal as an Off Road Vehicle Area.

Participants enjoy the freedom of exploring bush trails, quality family time and an element of challenge. Family groups usually have a parent as Lead rider and Sweep, with children in the middle of the convoy. Often experienced in groups of families. Camping is commonly associated with this experience.

[6] Section 52

It is desirable for Metro Road to be a family-friendly area. The presence of younger riders encourages a more responsible attitude by all riders, and family groups give the area a more social tenor. Additionally, as has been demonstrated at Pinjar, family groups both deter littering and are more likely to volunteer for cleanups and maintenance.

Priority - High.

Quad Tourers

Trail touring on quad bikes. Currently this segment rides illegally outside of gazetted off-road vehicle areas as there are no legal areas large enough to support it and therefore all such riding on public land is in contravention of the CALM Act.

The trails required are as per Trail Bike Tourers but less distance and quad riders also enjoy single track.

The size of Metro Road and the potential of the longer trails able to be provided will provide the first legal trail long trail for ATV riders. This segment has considerable overlap with Family Explorers as family groups may have a mixture of bikes and quads.

Priority - High.

Trail Bike Tourers

Day or overnight point to point rides on road registered trail / enduro style motorcycles. Trail or enduro motorcycles are able to be road-registered, but are not designed for long distance road use.

Trail bike tourers enjoy the satisfaction of reaching a destination via a mix of open and technical trail sections. The nature of the bikes enables them to navigate overgrown, rough or very minor trails. Four wheel drive 'twin-track' tracks are popular, as is single-track, but a good destination ride is likely to include every kind of trail from the tightest single track to sealed roads.

Technical challenge is provided by hill climbs and descents, river crossings and rough terrain but the 'challenge' component of a destination ride may only be 10% of the distance travelled or time elapsed. Typically, the 'challenge' sections are linked by longer sections of more flowing, cruisy riding.

The limitation of the ORV area in relation to this market segment is that it is loop rather than destination based. This could be partially overcome by suggesting destination areas to give a sense of an 'out and back' trail.

The key will be keeping the trails fresh and well maintained. The Trails Zone should ideally be able to be set in different layouts with sections opened and closed on a regular basis to provide riding variety.

The use of the proposed 2-way connector trails will enable riders to mix and match various trails for a varied riding experience.

Priority - Medium

Mini Riders

Junior riders not yet ready to hit the trails and / or children with 50-100cc mini-bikes, supervised by parents. The bikes are not able to be road-registered as they are not ADR compliant.

These riders want a smooth, short circuit or trail where they can ride at their own pace without feeling intimidated by faster riders and bigger bikes.

The key consideration is safety. Parents want their junior riders to get an enjoyable and safe introduction to riding. Strategies include:

- Riders of the same age and bike type riding together
- Riders all going the same direction with no cross-trails
- Riding in an area that can be viewed continuously from a family-friendly location such as a picnic area.
- Riding on a maintained track with no dangerous obstacles, logs, rocks or large bumps.
- Riding without the pressure of competition (note that age is no barrier to entry in competitive motocross)
- Parents want to be able to maintain visual contact for at least most of the circuit and be able to gain access to the trail to pick up a fallen rider.

The reality is that children will be easily pleased, so this market segment is the *parents* of the children.

This category has been targeted in the Pinjar ORVA developments with good outcomes and significant lessons have been learnt that can be applied from Pinjar to Metro Road.

Priority - Medium.

Novices

Novices can be found in all age groups and are defined by their experience and capabilities. Novices prefer wide, formed, graded and hardened trails. Speeds will be lower and the trail will have less technical challenges.

Historically, novices at Metro Road have remained within the boundaries of the user-created car park areas and on the main road. The difficulty of most trails and the risk of becoming lost discourage novices from venturing out onto the trails themselves. This current situation is undesirable as it creates a dangerous mix of unskilled riders and other motor vehicles.

Novice riders are commonly brought to an area by a more experienced rider and the Metro Road precinct provides the opportunity for graduated trails where riders can move to progressively more challenging trails as their confidence and competence increases.

Priority - Medium.

Out of scope and excluded

The Metro Road "Framework for proposed trail development" (Appendix 1) specified the following as out-of-scope and te be excluded from use of trails and facilities at Metro Road:

- Cross country (i.e.; off-trail) riding, racing, competitive events
- Motocross - as an area with a trails focus, it is not considered appropriate to create practice motocross circuits.
- Side by Side ORVs. These larger, heavier and fast machines are not considered by Parks & Wildlife to be compatible with motorcycles.
- 4WDs, horses, mountain bikes
- Adventure riders - Long distance day or multi-day on-road / off-road rides on larger (typically between 650cc and 1200cc) road registered motorcycles designed to be ridden long distances on a mix of sealed and unsealed roads. These bikes are not excluded and may well enjoy the trails and facilities but they are not specifically catered for or targeted in the design of trails and facilities.

User Requirements

An understanding of the preferences of each segment is necessary to ensure that Metro Road trails satisfy the objective of becoming a preferred option for riding.

Segment	Priority	Requirements
Single track explorers	High	Good quantity of high quality single track with diversity of design from more open and flowing to tighter and more technical to rocks and hills. Stacked loop format incorporated with twin track and open trails.
Family explorers	High	Routes of 20, 40 or 60km. Mostly open and flowing with optional single track and more difficult sections. Looped trails of varying length and difficulty. Skills trail of 2-3 km, close to the car park / trailhead.
Quad tourers	High	Up to 60km twin track / logging track / forest trail loops plus single trail suitable for quads.
Trail bike tourers	Medium	Up to 60kms of twin-track / logging track / forest trail loops. A one day ride is around 140kms so a variety of trails and loops that can be configured to provide a different experience.
Mini riders	Medium	Beginners - smooth and well maintained, one way short (approx 200 m) circuits and longer (approx 1.5 km) loop trail for mini riders only. Experienced Minis: one-way trails and circuits with small technical features such as jumps and opportunities for exploration. Focus on fun, not speed. In sight of car park or picnic area.
Novices	Medium	Easy 'green rated' trails, with firm, relatively smooth surface.

Land Manager Requirements

As land manager, the Department of Parks and Wildlife has a desire to maximise recreational opportunities while ensuring the long term sustainability of the environment.

This is a greater challenge for higher impact activities such as motorised recreation, which partly explains the difficulty in identifying suitable locations.

Parks & Wildlife is, understandably, concerned with minimising a series of risks:

- Risk to the environment – the key charter responsibility of the Department
- Risk to participant and non-participant visitors
- Risk to the reputation of the department
- Management risk – the financial and resourcing cost of ensuring ongoing order
- Financial risk – particularly in maintenance costs

While each of the above risks is present in a development such as Metro Road, it can also be seen that if successful, Metro Road can substantially *reduce* these risks in other areas – many of which have a higher risk probability and severity.

Risk management of the Metro Road Area is dealt with in Part 4: Management Plan.

Funding is required by the land manager to address the capital and operational costs of the area.

Assistance with maintenance is required, particularly labour-intensive tasks such as litter removal.

PART 3: AREA CONCEPT PLAN

Positioning of the Area

Metro Road is best positioned to deliver experiences that can't be offered by other Off Road Vehicle Areas, clubs or commercial ride parks.

The size of the specified Metro Road area enables family-friendly trail bike touring, while the ground conditions are conducive to the development of extensive networks of highly sought after single track.

Circuit-based activities such as motocross practice tracks *can and are* provided by clubs and commercial parks and are not proposed to be included at Metro Road. Deliberately not catering for this type of experience at Metro Road will assist in creating a clearer trails-oriented positioning for the area.

Metro Road should be positioned as a nature-based experience, with minimal built infrastructure. It should attract predominantly half to full day visits, potentially with natural camping areas.

Vision Statement

Metro Road will be progressively developed as a large-scale, family friendly, trail bike touring and single track facility that delivers a high quality experience to riders.

Through quality design and trail construction the impacts will be manageable and the trails and facilities maintainable within budgeted resources.

Metro Road Objectives

- To plan, develop and promote a legal, high quality, sustainable, low maintenance and permanent regional trail riding precinct.
- To provide for trail-oriented riding disciplines that deliver a different riding experience to Pinjar and other ORV areas by focusing on trails rather than circuits.
- To provide a trail network of predominantly single track riding opportunities.
- To provide a trail network and associated infrastructure to significantly expand the inventory of legal riding opportunities for families and junior riders.
- To provide camping facilities and multi-day use.
- To improve safety of riders in the area, by progressively replacing the current proliferation of high-speed logging roads with purpose-built, signed trails.
- To restore damaged areas of vegetation and adopt a more environmentally sustainable model for the area to protect environmental and heritage values
- Design and build a trail network that protects the environmental and other values of the project area, and the amenity of neighbouring landowners.
- To assist in reducing illegal riding in more environmentally sensitive areas.
- To improve safety for riders currently riding elsewhere, by providing a safer alternative with a better riding experience.
- To develop a model for large scale, trail-based recreation facilities that can be utilised at other suitable locations.

ORV Trail Development Principles

Before looking at the detail of the Area Concept Plan it is important to consider some specific trail development principles for off-road vehicles.

Rider Dispersal

Dispersing riders out over the whole ORV area is important. Having less riders on any given section of trail reduces trail maintenance, impact on that area and reduces the number of encounters with other riders thereby increasing the quality of the experience and improving rider safety.

Apart from area size and length of trail systems, dispersal can be achieved by providing multiple loops or trail junctions which act as a decision point for rider to select their route. The more decision points, the greater the chance of dispersal. When trail junctions are provided near the trailhead or car park, the more quickly the riders can disperse.

This Plan - *the Area Concept Plan includes loops and trail junctions and considers rider dispersal.*

Mileage and Variety

Motors mean ORV riders can travel further than human or horse powered trail users and so require more trail mileage. To keep riders on trail and reduce user-generated trails, sufficient quantity of trail must be provided. One way to increase mileage is to reduce the average speed the trails can be ridden, which also has safety benefits and reduces trail impacts.

Whilst trail mileage is important, the overall recreation experience can be enhanced via viewpoints, interpretive sites, scenic landscapes, picnic areas, spectating time and skills building opportunities.

Expanding the variety of trails adds to the quality of the experience and caters to different levels of riders and vehicle types. Trail variety can be expanded by adding loops, trails of different widths from single trail to twin-track to fire-breaks and roads. Using topographical features such as hills and different trail surfaces can add to the user experience. Providing beginner areas, learner loops, skills training sections and technical challenge courses provides variety.

This Plan - *the Area Concept Plan includes capacity indicators and a variety of riding experiences.*

Trail Difficulty Classification

A gazetted ORVA should provide both easy and difficult trails to spread visitors and meet a range of needs. By indicating the length and difficulty of trails with a clear signage system, visitors will be able to locate their preferred type of trail easily.

Segmentation by age, gender, bike type or size, or even years of riding experience are not valid criteria. A skilled 12 year old on an 85cc bike may well be able to successfully negotiate terrain that might stop a less confident adult on a 450.

A significant attraction of a commercial ride park or gazetted ORVA is that families can ride together, so segmentation needs to be by capabilities and expectations rather than age or bike size or type.

Capabilities determine the type of terrain that a rider is capable of competently and safely negotiating, while *expectations* are both those of the rider in wanting an appropriate level of challenge, and those of management in requiring riding attitudes consistent with the intent of each level of trail.

	Novice Riders	Intermediate Riders	Advanced Riders	Management
Green Trail (easy)	Will negotiate trail safely and comfortably	Will enjoy for a cruisy, less challenging ride	Will ride for a warm-up or wind-down or with less experienced family members / friends	Will expect all riders to ride with care for novices and at a cautious pace
Blue Trail (more difficult)	May require some assistance, will feel physically challenged	Will negotiate trail safely and comfortably but with some challenging sections	Will enjoy for a cruisy, less challenging ride	Will allow a faster pace but anticipating less experienced riders
Black Trail (most difficult)	Will struggle, need assistance, will feel overwhelmed and probably not enjoy.	May require some assistance, will feel physically challenged	Will negotiate trail safely but with some challenging sections	Will anticipate a fast pace or more aggressive style

The above matrix discourages novices from attempting Blue trails unless in the company of a more experienced rider, and discourages novices from attempting Black trails under any circumstances. Advanced riders, however, are not discouraged from riding Blue or Green trails but are expected to ride them at an appropriate pace.

Note that a trail may be predominantly Green or Blue, but may have optional sections of a higher level. Where such branching occurs, it is important to ensure that the lower level trails do not have any unexpected obstacles, so the more advanced riders can temporarily leave the less experienced riders in their party confident that they will meet up again where the trails re-converge.

See *Appendix 4: Principles of trails classification and grading* for further details.

This Plan - *the Area Concept Plan provides a percentage allocation of different trail classifications for the area.*

Trail Class

Trail Class describes the extent of trail development, from minimally developed to fully developed and is useful for describing the level of construction to be undertaken in order to provide the required user experience. The Trail Class Matrix (Appendix 5) is adopted from the US Forestry Service and is proposed for use in the context of describing Metro Road trails.

This Plan - *Trails within the Metro Road precinct will generally be Class 2 (Moderately Developed) and Class 3 (Developed). Only beginners and junior trails will be Class 4 (Highly Developed).*

One-Way Trails

This is a controversial topic. Riders, land managers and risk assessors will usually request one-way trails. Traditional thinking was that they are safer because they reduce the risk of head-on collisions. Riders want to ride as fast as possible, using the whole trail without fear of oncoming traffic.

However there is a counter view that suggests one-way trails should be the exception and not the rule[7]. This view is based on the following considerations:

a. One-way trails give a false sense of security, as there is *always* a risk of collisions on ORV trails.
b. You can never guarantee no on-coming traffic, so riders should always ride in a manner that they can take avoidance action.
c. Riders will change their riding behaviour (slow down, stay left) if there is a possibility of a bike coming in the opposite direction, meaning a two-way trail can be safer than one-way.
d. Two-way trails increase the trail inventory and double the mileage because trails ride differently in different directions.
e. Teaching riders to ride defensively, anticipating oncoming bikes is good practice for when riding outside of ORV areas or on unmanaged/unmarked trails.

There are facilities where it is appropriate to have one-way trails - generally shorter learner loops and peewee circuits or technical challenge single track, but they require:

- A limited number of controlled access points - Dufourd (NOHVCC) 2015 claim there should be no more than two.
- Increased signage, with increased monitoring and replacement, to warn and educate riders as to the direction of travel.

The Metro Road Pilot Trail was designated as a 'preferred direction' trail. Signs indicate the direction of travel with a triangle sign pointing the trail direction to the oncoming rider when travelling in the preferred direction. A rider travelling in the opposite direction is faced with a sign warning of oncoming traffic.

Rider research indicated an almost universal compliance with the preferred direction[8]:

In the direction of the arrows	97.30%
In the opposite direction to the arrows	2.70%

It is recommended that for the future trails this concept be strengthened. While not creating *expectations* that the trails are one-way, riders should be more explicitly discouraged from riding contrary to the signed direction. The exception to this will be the designated two-way 'connector' trails which will be clearly signed as such, and the Class 4 beginner and junior trails where single direction travel will be enforced.

This Plan - *the Area Concept Plan describes designated trails in the area as one-way except for those connector trails specifically designated two-way. The Signage Plan will consider signage for both.*

[7] Great Trails: Providing Quality OHV Trails and Experiences. Dick Dufourd with the National Off-Highway Vehicle Conservation Council (NOHVCC) p12.
[8] RTRA Pilot Trail Research 2013-2016

Metro Road Area Plan

As a 'trails' precinct, Metro Road should provide a range of trails experiences, from relaxed cruising to challenging single track.

The area will need to undergo a transition from its status of being illegal but not policed, to one of legal, more responsible use. The fastest way of achieving this would be to simultaneously create an extensive new network of purpose-built trails while closing and rehabilitating all existing trails that are no longer required for management purposes.

While this option is not to be dismissed, a more realistic development scenario will be a progressive transitioning – with new trails being added and old trails retired according to demand and rider feedback.

Accordingly, the proposed Area Plan recognises the co-existence of new and existing trails, including the development of trail routes that combine both.

Proposed Uses

SUPPORTED USES	NOT SUPPORTED

● 'Mini-riders' beginners and learners
● Novice riders
● Older children / teens
● Family explorers
● Single track explorers
● Trail bike tourers
● Quad bike tourers
● Vehicle types accommodated
  ○ Motorcycles
  ○ Quad bikes
	● Practice motocross circuits
	● Freestyle / jumps
	● Racing
	● Vehicle types not accommodated
	  ○ 4WD
	  ○ Buggies
	  ○ Side by sides

Trails Concept plan

The following indicative site plan illustrates the separation of riding levels into precincts as well as the types of circuits and trails envisaged. The plan and associated trail alignments are subject to review based on an environmental site survey and detailed corridor surveys.

The trails concept plan avoids having trails cross Metro Road, but aligns the trails relatively closely to provide emergency access at various points. Signage would highlight these emergency exit routes.

The conceptual plan suggests a Family Zone to the east of Metro Road and a Trails Zone to the west. This positions the existing Pilot Trail, an intermediate difficulty trail, in the Trails Zone and positions family riders closest to the Conservation Reserve boundary.

Following the model established at Pinjar there would be two separate car park / trailheads to reduce the need for motorcycles to ride on or cross Metro Road to access the trails.

The trailheads are positioned immediately to the south of the water catchment boundary. This enables a simple riding instruction that 'anything south of the car park is OK'.

Trails could be connected in various ways to provide a diverse collection of routes that would satisfy the preferred trail length requirements outlined under User Requirements.

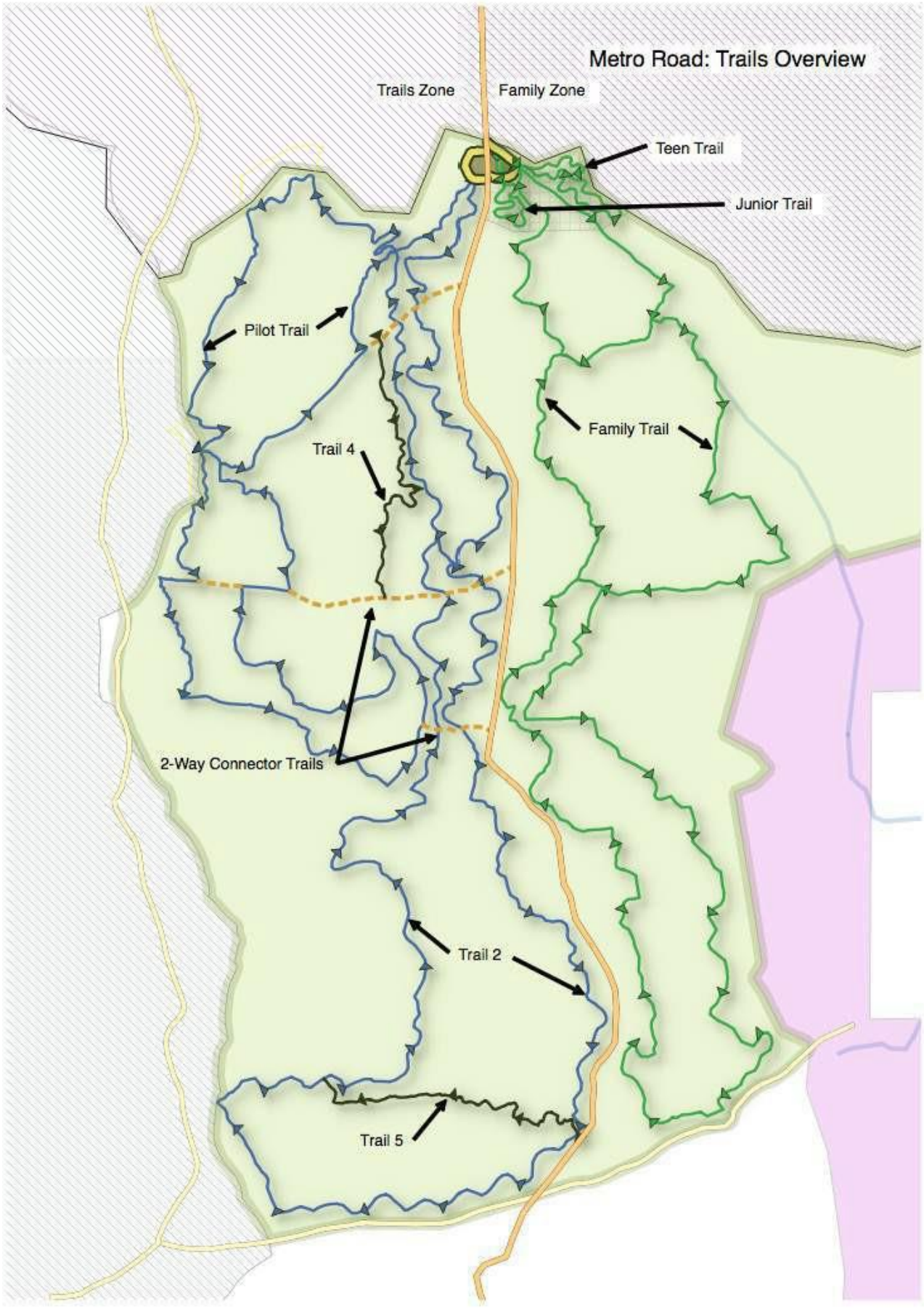


Figure 10: Indicative Trails Network

Family Zone – East of Metro Road

The Family Zone will have a 'Slow Zone' in the area immediately surrounding the car park / trailhead. The following trails are envisaged:

Trail	Approx Length	Difficulty	Trail Class	Description
Beginners	200 m	Green	4	A small, smooth, firm circuit for child learners. Ideally separated from all other riders such as by being located on the inside of the parking area.
Juniors	1400 m	Green	4	A highly developed trail similar in concept to the popular PeeWee circuit at Pinjar.
Child / Teen "Skills trail"	2800 m	Green	3	This trail would introduce terrain likely to be encountered on the main trails, but in a controlled way and with easier options. Its intent is to prepare young riders who have progressed beyond the Juniors Trail to be ready to go exploring further with their family
Family - Trail 3	5 / 11 / 25 km	Green	3	This stacked loop trail with at least three length options will be the main trail in the Family Zone. Over time it could be further developed with optional sections of greater difficulty (Blue level)

Trails Zone – West of Metro Road

The Trails Zone will be more intensively developed, for intermediate and advanced riders of all ages.

Trail	Approx Length	Difficulty	Trail Class	Description
Pilot Trail - Trail 1	9 / 13 / 19 km	Blue	3	The Pilot Trail will need minor re-alignment to remove it from the Mundaring and Canning catchments. This will also entail a new access trail from the car park / trailhead.
Trail 2	4 / 10 / 14 / 28 km	Blue	3	This will be the primary single-track trail for the precinct, with approximately 90% new construction. Cleared width approximately 1.5 metres; tread width will generally wear in at approximately .5 metres. Shortcuts and loop repeats will be facilitated by existing major trails that cut east-west across the trail at various points. These 'connector trails' will be designated as two-way traffic and signed accordingly
Trail 4	3 km	Black	2	Trail 4 runs parallel to a section of Trail 2 and will use approximately 2 km of existing trails. Technical terrain features will be added to the trail to provide the level of challenge required for a 'Most Difficult' rating
Trail 5	3 km	Black	2	At the southern end of the precinct this will be an optional single-track route branching from Trail 2.

The trails as identified would become ‘designated’ trails under this plan. It is proposed that they would follow the alignment of existing trails where appropriate, in order to reduce the amount of new clearing required, but only where such an approach is consistent with the user experience planned for that trail.

The following map shows the trails network overlaid on the environmental constraints:

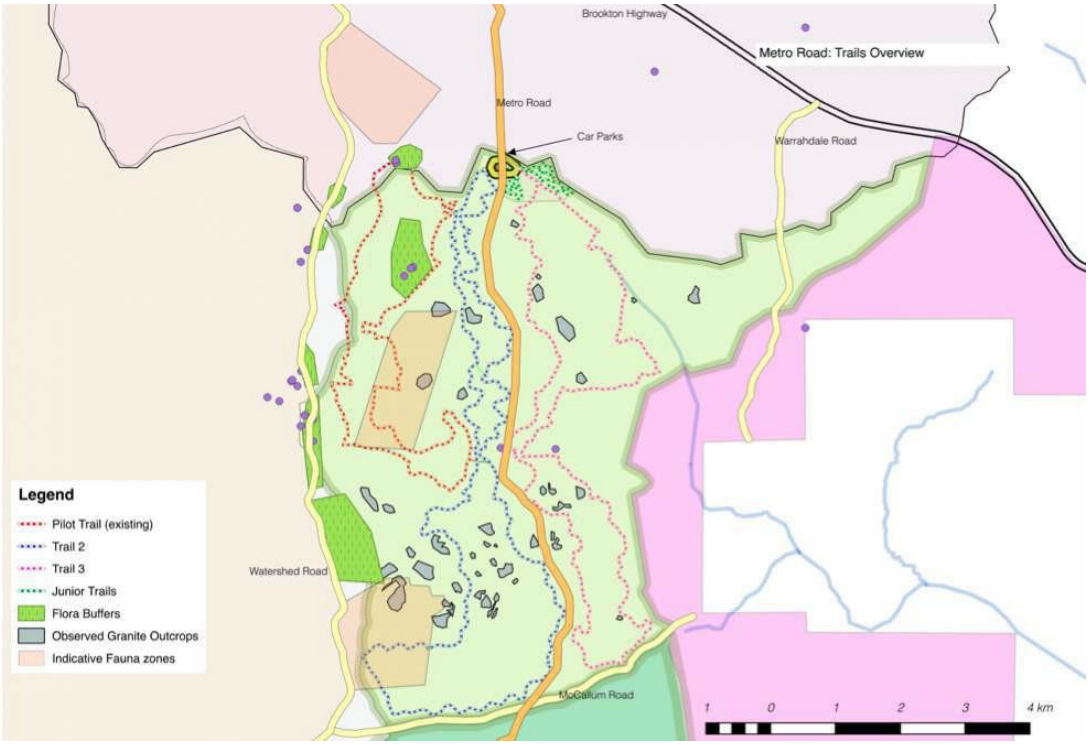
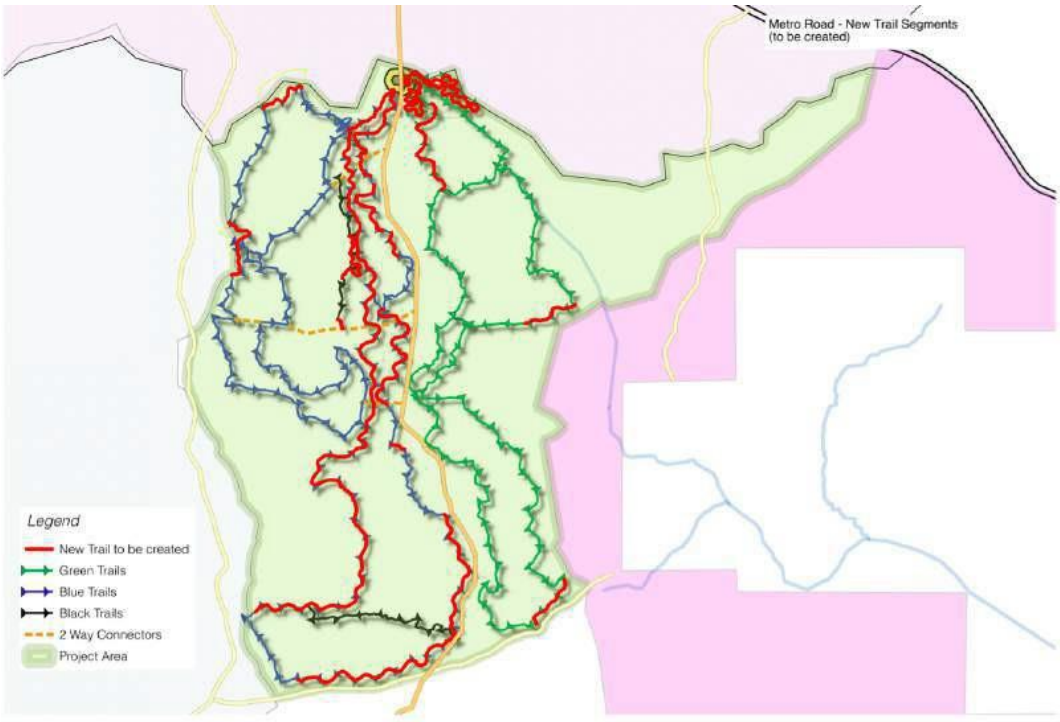


Figure 11: Concept trails overlaid on environmental constraints

Based on the assumed corridors, it is estimated that 34 km of new trail alignments would be required. The following map indicates the new trail segments (in red):



Existing Trail & Rehabilitation Recommendations

With a trail bike history spanning back to the 1970s, the Metro Road area has an extensive network of tracks and trails. Some are old logging or management tracks, others are former enduro loops, while still others are routes that have been user created as short cuts or to link sections of trails.

Over 100km of trails have been identified within the precinct boundaries.

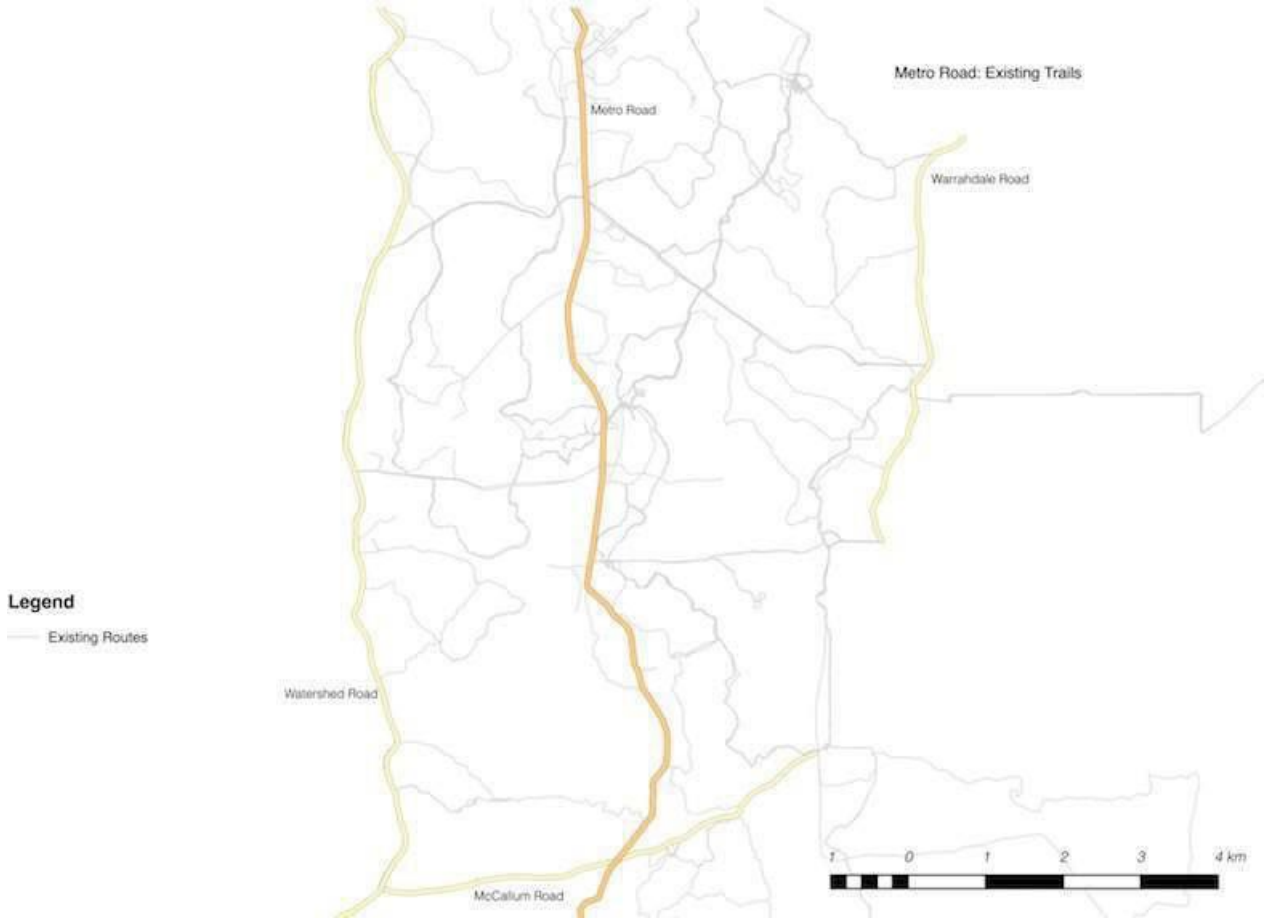


Figure 12: Identified existing tracks and trails

Developing Metro Road as a designated trail riding precinct can have environmental benefits, but that will entail rationalising the number of trails and rehabilitating[9] certain areas, particularly where the environment is more susceptible to long term damage.

The intention should be to maintain or increase overall trail mileage while decreasing the impact. This can be achieved by **repairing** or **replacing** existing trails.

Repairing existing trails may remediate the damage that has occurred over the years, but it can miss the opportunity to adopt modern best practice principles of trail design.

Trails that were created for logging purposes or for enduro events were not aligned with long term use in mind. They typically have little or no water shedding features such as grade reversals, rolling dips or planned outslope. Repairing the trail can fix the symptoms, but not the cause, of erosion.

[9] The term 'rehabilitation' in the context of this plan means the closure of a trail to vehicles and the return of the trail corridor to a natural state.

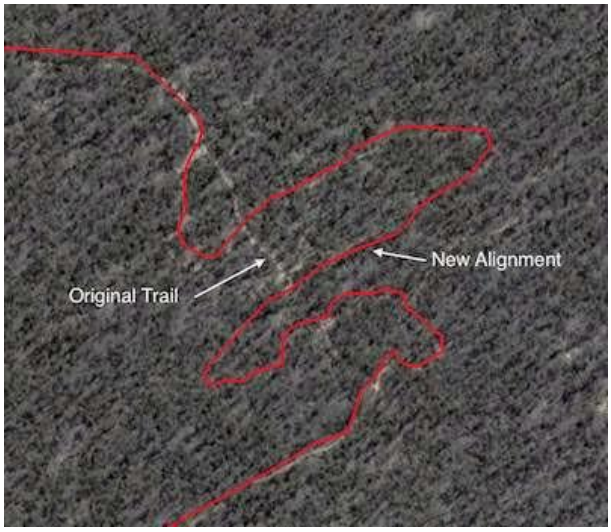
Additionally, work undertaken for the Pilot Trail indicates that remediation of sections of whooped out trail tends to have only temporary benefits. The soil replaced to fill the valleys in the whooped section is not as compacted as the peaks, and the whoops quickly return.

Section of Pilot Trail graded in 2012

Same section with 30cm whoops returned, 2015 after approx 5,500 passes

Replacing trails may in many cases be a more cost-efficient approach in both the short and long term.

By way of example, a new section of single-track was created as part of the Pilot Trail Bike Trails' research agenda. The new section replaced an existing section of trail that ran straight down a hill, and which provided no water shedding. The new section of approximately 930 metres was aligned with grade reversals and climbing turns. Ongoing monitoring has revealed relatively little soil displacement and the trail has remained in very good condition over the same period. It also provides riders with a much more interesting section of the Pilot Trail.



This new section of trail also demonstrated the economies of constructing new trail versus remediating existing trails that are in poor condition. The trail alignment was pin-flagged then mown, leaving low grassy vegetation to consolidate the ground surface. It was then 'ridden in' by riders and soon had established a narrow tread.

Figure 13: New section of single-track after two+ years' use

Where an existing route or trail is to be used as the basis of a designated trail in this concept plan, a repair or replace decision will need to be made for each trail segment when considering the alignment of new routes. Each decision should be influenced by

a. The comparative cost
b. The likely effectiveness – ie sustainability of the repair or new segment
c. Net environmental gain
d. Enhancement of the riding experience

Where an existing trail or segment does not form part of a designated trail, a decision will need to be made to either leave the trail as a non-designated open trail, or close and rehabilitate the trail.

By default, existing trails should remain open and un-designated. This will avoid a rapid decrease in trails inventory, will reduce the onus of responsibility on the land manager, avoid the cost of closure and rehabilitation, and will preserve options for future trails development using existing trails as a basis. Un-designated trails would not be signed or maintained, nor would they appear on area maps. Riders would be made aware that these trails do not form part of the managed ORV Area.

Not all existing trails would remain open. Trails to be identified for immediate closure and rehabilitation are those that:

1. Risk permanent damage to sensitive areas such as water course and rock middens.
2. Lead directly from the riding precinct boundaries into unauthorised areas such as water catchment, DRA or conservation reserve. Trails that are wholly within unauthorised areas would remain the

responsibility of the restricting agency – ie, the Water Corporation would retain responsibility for enforcing exclusions in the water catchment area.

Closure would require ripping of at least the entrance and approximately the first hundred meters of the trail, and effective concealment of the entrance.

Capacity indicators

It is important to estimate the maximum 'carrying capacity' of the facility. Unfortunately there are many influencing variables and little hard research upon which reliable predictions can be based.

The following model provides a basis for estimating capacity that can be refined with observation.

The model assumes a minimum average spacing between riders on each type of trail or circuit, then allows for the fact that riders tend to alternate between riding and resting / refuelling / maintaining / eating etc. The more strenuous the circuit the more time is spent between riding sessions. The average spacing figures are probably conservative, as riders tend to ride in groups or 'platoons', with spacing of 20-50 m between riders.

PRECINCT	LENGTH	SPACING	TRAIL CAPACITY	ROTATION	USER CAPACITY
Beginner	200 m	20 m	10	1:2	20
Junior	1,400 m	20 m	70	1:2	140
Teens	2,800 m	40 m	70	1:3	210
Family	25,000 m	100 m	250	1:2	500
Pilot	19,000 m	100 m	190	1:2	380
Trail 2	28,000 m	100 m	280	1:2	560
Trail 4	3,000 m	50 m	60	1:4	240
Trail 5	3,000 m	50 m	60	1:4	240
				TOTAL	**2,290**

The above table indicates an estimated capacity to cater for over 2,000 visitors at any one time. Assuming that 50% of the riders visit for a full day and 50% for half a day the concept plan should be able to cater for up to 3,000 riders per day. While exact current visitor numbers are not known this is likely to be many times more than the facility currently attracts and substantially more than the anticipated patronage, at least in the short-medium term.

Infrastructure

Consistent with the natural experience sought and to emphasise the conservation priority, infrastructure and constructed technical terrain features should be kept to a minimum and with a focus on utilising natural features.

Access

Access to Metro Road is via Brookton Highway. The proposed parking / trailhead is 5 km from Brookton Highway, along Metro Road. Metro Road is a 9 m wide graded gravel surfaced road.

Parking and trailheads

The Mundaring Catchment extends south of Brookton Highway, precluding the positioning of parking and trailheads closed to the Highway. Two separate parking loops are proposed, servicing the Family Zone (east of Metro Road) and the Trails Zone (west of Metro Road).

It is recommended that these use the model developed for the Pinjar Motorcycle Area, where a 6 m surfaced loop road services an outer ring of parking bays.

The bays should be approximately eleven meters in length to allow for car and trailer, with a further seven meters allocation for unloading / setting up.

A 3-4m wide two-way 'loop trail' forms the outermost ring, providing access to the trails without the need to ride on the car park road. A barrier such as a fence or logs should be installed to funnel rider to the trails only at the trail entry points.

Ideally, around half of the bays should be designated for utility parking, with either a built-up and buttressed ramp, or a spoon depression to facilitate loading and unloading. This will encourage ute drivers to use the car park and to reverse park and unload in the preferred manner.

The concept design provides parking for over 60 vehicles. It may be possible to stage the development of parking, by developing the eastern (family) side first and then developing the western side as demand dictates.

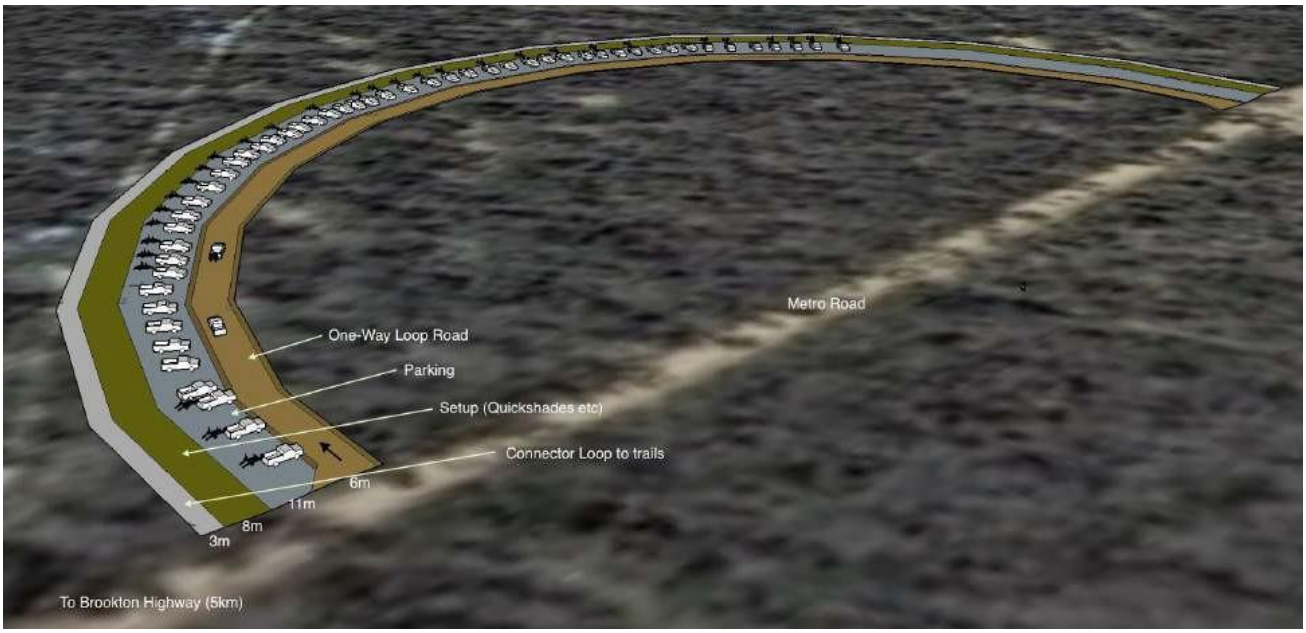


Figure 14: Trailhead and car parking

Camping Sites

The desire by families for the opportunity of on-site camping is noted, as is the initial consideration of this as a possibility by Parks & Wildlife. Further consideration of location, risk and associated amenities is required and so no recommendations for camping are included in this report.

Information bay

It will be important for riders and visitors to have an understanding of the nature of the area and the associated risks. Prominent signage should be installed on Metro Road just off Brookton Highway,

notwithstanding the fact that the boundary of the Off Road Vehicle Area itself is 5 km further on. The warning signage should be repeated at the boundary of the trails precinct.

Within the car park area should be an information shelter with full details of the code of conduct for the area, along with maps of the trails and explanation of the trail signage.

Interpretive Sites

Attractive, shady rest areas should be identified along the trails, especially on the Family Trail, and marked. Ideally these should coincide with an opportunity for nature interpretation or a relevant explanation of the need to protect the landscape in that location.

Picnic facilities

Areas for picnicking should be provided at the trailhead / car park and at locations along the Family Trail if practical. Consistent with undeveloped nature of the precinct, these should be natural in construction and robust.

Toilets

Toilets should be provided, at least in the Family Zone. These would need to be robust, vandal resistant and consistent with the natural theme of the area.

Water

There is no requirement for potable water, as riders will be responsible for providing their own supplies.

Architectural Theme

Any developments should be consistent with the Recreation Opportunity Spectrum (ROS) designation of ‘roaded, natural’ for trailheads and ‘semi-primitive, motorised’ elsewhere on the estate.

PART 4: MANAGEMENT PLAN

Management Model

Ongoing management is required for Metro Road for both the physical amenities (trails, parking areas, toilets, signage) and social/behavioural management of the area users and visitors.

Area Owner

The entirety of the trails inventory will be within State Forest, with the Department of Parks & Wildlife the responsible land manager.

Area Operator

The RTRA will be the Area/Trail Operator in partnership with Parks & Wildlife via a Trail Adoption Agreement.

"Friends Of…"

An active local management program is critical to the ongoing effectiveness of the area and it is recommended that a "Friends Of Metro Road ORVA" be established by the RTRA as has been done for Pinjar.

Joining the "Friends Of Metro Road ORVA" provides a sense of belonging and ownership, self management and self regulation as well as volunteers to assist with practical work. Members would be rewarded with special events such as rides, manufacturer days.

The RTRA (Recreational Trailbike Riders' Association) can incubate and manage the "Friends of" Group as it does for Pinjar and assist with the membership drive via RTRA members. On-site signage would point to an online signup form. An initial Committee would be selected, suitable for the initial re-development.

Proposed goals for the "Friends Of Metro Road ORVA" are:

1. To provide a resource base of volunteers to make a significant contribution to the management, maintenance and development of the area.
2. To work with Parks & Wildlife to fulfill the objectives for the area.
3. Guiding and promoting desired rider behaviour.

A mandate for the "Friends Of Metro Road ORVA" and a Memorandum of Understanding between the RTRA and Parks & Wildlife would be required to establish obligations and responsibilities with regards to management of the area.

Management Committee

A Management Committee with representatives from the RTRA, "Friends Of Metro Road ORVA" and the Department of Parks & Wildlife would provide focus and direction on area and trail development, maintenance, environmental improvement programs, user education and information programs and enforcement.

Volunteers

Volunteer programs modelled on the Bibbulmun Track Foundation and the Munda Biddi Foundation would provide volunteers for track maintenance, trail guides, environmental improvement programs and marketing and education programs. Volunteers would work within Parks & Wildlife's existing Volunteer Program.

Trail / Area Ambassadors - Trail Guides

"Friends Of Metro Road ORVA" would provide volunteers as trail ambassadors, guides or hosts who provide information and engage with riders on the importance of responsible riding and minimal impact. They would also lead introduction rides around the area.

Trail Guides need to be able to ride and would undergo training in policies, regulations, code of conduct, minimal impact riding behaviours and need to relate well to people and understand that they are not enforcement officers. Their primary objective is to provide information, guidance and mentoring in responsible riding and act as a role model.

The trail guides would be rostered on and be provided with identifiable riding jerseys. They would also lead introduction rides around the precincts. Because they are riders, they can more effectively apply peer pressure as visitors will identify more with the ambassadors than rangers.

Roles and Responsibilities

The following roles and responsibilities are suggested for each of the entities involved in the management and governance of the Metro Road off-road vehicle area.

RTRA:	**Role**: The Area Operator **Mission**: To support the management of the Metro Road ORVA so that it continues to meet its objectives. **Specific responsibilities**: ❖ Provide and manage volunteers ❖ Undertake scheduled development works in coordination with Parks & Wildlife ❖ Maintenance schedule management ❖ Monitor environmental sustainability in conjunction with Parks & Wildlife. ❖ Rider education and mentoring ❖ Trail ambassador and trail guide program ❖ Undertake surveys and monitor trail counters
Parks & Wildlife:	**Role**: The Area Owner for all trails, infrastructure and facilities on Parks & Wildlife estate. **Specific responsibilities**: ❖ Trail and trailhead development ❖ Visitor Risk Management ❖ Owner of the trail standards ❖ Monitor environmental sustainability in conjunction with the RTRA ❖ Assist RTRA with volunteer training, insurance for volunteers and ensuring that volunteer management is consistent with Departmental policy and processes. ❖ Assist RTRA with maintenance works. ❖ Marketing & promotion as part of the Department's current marketing.
Management Committee:	**Role**: Governance and direction **Specific responsibilities**: ❖ Focus and strategic direction ❖ Plan of works for trail and trailhead development ❖ Financial management

Risk Management

The overriding objective of any risk management strategy is to minimise the likelihood of misadventure or injury to a visitor.

All trail and quad bike riding involves some risk. Most risk is within the control of the rider – ie the rider's responsibility to know the capabilities and limitations of the vehicle and to ride within his or her limits of strength, experience and skill. The land manager's duty of care is limited in this regard, as the participant is assumed to understand the risks of the activity and to be making his or her free choice to engage in it. In the case of minors, the decision – and responsibility – is deemed to be that of the parents or guardians.

There are other risks that are not inherent to the activity, but which derive from the nature of the environment. These are the risks of greatest concern to the land manager, for it can be said that these are risks that are – or should be – known to the land manager but which cannot be expected to be known intuitively by the rider and are therefore not 'obvious' risks. These risks are greater for first-time participants to an area, but it cannot be assumed that a returning visitor will be aware of risks encountered previously, particularly when conditions change according to weather, erosion, trails development and the impacts of other vehicles on the trails.

Some of these risks can be eliminated by developing a one-way trail where required or by removing the hazard or modifying the trail, for example where a line through a corner is optimised to apex later and therefore avoid running wide towards an obstacle.

Other immoveable hazards are identified and risk reduced by the placement of specific warning signs.

The majority of minor hazards, and the non-specific risks are accepted, with risk transferred to the participant both implicitly through the participant choosing to engage in what is considered to be a dangerous recreational activity, and explicitly through appropriate general warning signage.

To support this risk transfer and to maximise the safety of participants an effective induction program is essential by way of information provided to the rider before they go to the area and once at the area - see Compliance - Education and Communication.

Department of Parks and Wildlife has a well established Risk Management process which would be followed for the risk management of the trails. (*Further information is provided in Appendix 6*).

Risk Management and the Metro Road Environment

Site visits and information provided by users of these areas indicates the following general hazards and risks specific to the Metro Road ORVA:

- Exposed tree roots
- Rocks, buried or loose on trails
- Deep 'whoops' on some trail sections
- Trees in close proximity to the trails
- Fallen branches, often with sharp ends protruding onto trails
- Many 4 way intersections, often with limited sight-lines
- Riders riding alone
- Riders not wearing appropriate protective gear
- Riders travelling too fast for their level of skill and the conditions
- No separation by age or riding skills
- Cars and 4WD vehicles on access roads

Insurance and Liability

There are two requirements for insurance – liability for the area manager and indemnity for the volunteers. Riding on public land managed by Parks & Wildlife would be covered by Parks & Wildlife insurance.

Volunteers working on Parks & Wildlife land would be covered by Parks & Wildlife's OHS and public liability insurance, provided that the volunteers is appropriately registered and inducted and signed on.

Recommendation: Risk Management - *A risk assessment to be undertaken as part of each trail development project and incorporated into Inspection, Maintenance and Evaluation processes.*

Signage

Parks and Wildlife has a set of signage standards developed for Pinjar and subsequently adopted at Gnangara and for the Pilot Trail at Metro Road. It is proposed that this suite of signs also be used for the expanded Metro Road development.

Sign content covers directional, information, warning and control requirements. The signs are mounted on flexible Ezydrive posts and are either corflute (direction signs only) or Alucobond. They have proven to be relatively durable in the field.

Sign posts will have a unique sign ID which can be used to locate the rider on a map, as well as a QR code and an indication of whether or not that location is within phone coverage. Emergency services will be provided with a map and .KML / .GPX file showing the sign locations.

Following the model initiated for the Pilot Trail, each directional sign will feature a numbered triangle, corresponding to the trail number.

Rider 'reassurance' signage – confirmation that a rider is still on their selected trail – will be positioned at the following intervals.

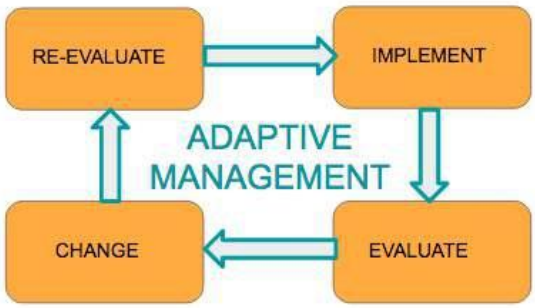
Class 2	Class 3	Class 4	2-Way Trails
1 km	500 m	250 m	250m

Directional signage will be installed at all trail branches and crossings, including on non-designated trails on the approach to a crossing or intersection with a designated trail.

Recommendation: Signage - *A comprehensive Signage Plan will be developed for the first trail development project following Department of Parks and Wildlife standards as used in their Off-Road Vehicle Areas.*

Inspection, Maintenance and Evaluation

A trail is placed in a dynamic environment - both in terms of the land and the users.



Facilities and Infrastructure Maintenance

Any trailhead development and facilities would have to be in consideration of lifecycle costing, built to require minimal maintenance. Periodic grading of Metro Road itself leading to the trailhead would be required and would be undertaken by the Shire of Beverley as is currently the case.

Trails Maintenance

Trails within the nominated precincts support an intensive riding style and will therefore require regular maintenance. Any trails gazetted for Family Explorers will also need to be maintained at a consistent standard.

Trails maintenance is best done regularly and lightly. If small problems such as ruts or water pooling are dealt with in a timely manner they do not become bigger erosion problems later on.

Minor trails maintenance would be identified, planned, managed and undertaken by the RTRA as per its agreement with Parks & Wildlife. Parks & Wildlife would provide some overview for process and environmental priorities.

Improvements to trails, ie. beyond pure maintenance, could be separately funded and contracted out.

Audit & Inspection Schedule

The trail audit should detail any trail surface issues that require maintenance and any drainage problems, vegetation regrowth on the trail, condition of signage and record all trails and built structures and their condition.

For evaluation and risk management purposes all signed trails should be inspected on a regular basis. The frequency should be determined on a trail by trail basis, taking into account the trail traffic, demographic (a Family trail would need more frequent inspection) and consequences of hazards or missing signs.

Evaluation

Evaluation is more than inspection and maintenance. Evaluation provides an assessment on how well the area is meeting its stated objectives. What's working and what isn't regarding trail design and location, rehabilitation efforts, signage, rider behaviour, rules compliance, rider satisfaction, maintenance, infrastructure and facilities, trailheads and level of demand.

Evaluation is an ongoing process through user, volunteer and land manager feedback - easy access needs to be made available to users to record issues preferably via an online system that enable logging and geo-positioning of major issues encountered on the trails.

Quantifying trail traffic is also an important means by which to understand and ultimately predict trails impacts. Offroad Vehicle-specific counters use the magnetic field of a passing vehicle and time/date stamp each pass to provide valuable data on visitor patterns. At least one trail counter should be installed on each designated trail.

In addition a yearly online survey should be undertaken amongst area users along with formal interviews of the volunteers, and land manager to determine development plans, changes to current practices, remediation plans and adaptive management strategies.

Recommendation: Maintenance -

- *Maintenance should be regular and ongoing to prevent small issues becoming bigger problems.*
- *A formalised and documented Inspection Schedule to be developed for the first trail development project following Department of Parks and Wildlife standards as used in their Off-Road Vehicle Areas and as part of any formal Trail Adoption Agreement between the RTRA and Parks & Wildlife.*
- *Regular exception reporting can occur through visitors and volunteers, but formal audits should also be undertaken at a pre-determined frequency*
- *Evaluation should include trail traffic quantification, visitor satisfaction and land manager interviews.*

Compliance - Education & Communication

> *A basic premise is that educated riders are responsible riders, and responsible riders keep riding opportunities open and reduce impacts.*
>
> Management Guidelines for Off-Highway Vehicle Recreation, Tom Crimmins, NOHVCC

Management of an Off Road Vehicle Area has to deal with certain issues that don't arise on the public roads network or in a competition venue and structure such as those operated under the umbrella of Motorcycling Australia.

Visitors to an ORVA don't need to have an MA licence, nor do they need a road licence. As such there is scope for many visitors to have or claim ignorance of basic signage or vehicle etiquette principles that experienced riders take for granted.

This makes the process of rider induction and education all the more important. Rider education is undertaken to:

- Increase compliance with area rules and required codes-of-conduct; and
- Reduce conflicts and resource impacts; and therefore
- Increase the quality of the rider experience; and
- Ensure safety and enjoyment for all.

Information and Messages

Visitors need to know:

General Risk Warning – including the fact that visitors (whether they are riding or not) may be injured and / or have their property damaged, and that such injury or damage may not be through any fault of their own (eg in the event of a collision with another rider)

Mandatory safety gear – current legislated minimum is helmet only, however a higher level of mandatory safety gear – eg boots, long pants and tops – could be imposed as a Local Area rule. In addition to the mandatory level there should be a *recommendation of* supplementary protection such as gloves, goggles, body armour etc.

Trails Precincts and Trails Network – what riders can expect during their ride eg types of riding available, trail difficulty and other users they may encounter. A trails map should be developed indicating the Precincts and their definition, with colour coding to represent trails difficulty level, a numbering system to supplement trail names, and clear identification of any two-way trails. Providing information about riding loops and the trail network will encourage riders to ride further away from unloading areas. Without this information riders who are unsure of the location will tend to ride in a smaller area located near the unloading area – creating congestion, disturbance and collision risk.

Area Boundaries – clear delineation of area boundaries is required via the main signage, boundary signage and information brochures explaining why riders need to stay within the boundaries.

Explanation of Area and Trail Signage – Every visitor needs to understand the meaning of the signs used throughout the ORVA. This can be included in the Trails Map and on the main information signage.

Speed Limits and Zones – Visitors need to understand where speed restrictions apply (for example through car parks and unloading zones), including the expectations that speeds will be reduced in Family Zones and on Green trails to allow for the presence of novice riders.

Code of Conduct – a list outlining the required Code of Conduct for riders and their families and supporters.

Off-road vehicle registration – what it is, why the bike needs it, how to get it, where the money goes.

No rubbish dumping – message for both riders and potential

.dumpers including fines and phone numbers to call.

Emergencies – procedure for fire and accident emergencies and associated phone numbers. Nearest first aid facilities.

Minimising environmental impacts - riding behaviours that minimize environmental impacts such as staying on the trail, using toilet facilities, no rubbish.

Noise emissions - the level of noise emissions that are socially and legally acceptable.

Interpretive information - What is unique about the area including features, species, historical and cultural interpretative information.

Code of Conduct

Would include safe riding measures, low environmental impact riding behaviour, mandatory and recommended safety gear and the no alcohol regulation. Includes a phone number to call to report hoon / illegal behavior.

Recommendation: Code of Conduct - *Adopt the RTRA Code of Conduct as used in other Off-Road Vehicle Areas.*

Information Media

Unless an area is permanently staffed, there is no mechanism to *ensure* that riders have received or understood the safety and control messages.

Accordingly the Metro Road ORVA must rely on signage on-site and information provided (or made available) to visitors before their visit. Riders can be educated at the start of their ride by providing them with maps, interpretative information and the area's rules and regulations.

Printed Materials - Trail Map

Trail Map and Information Brochure that could be widely distributed by on site volunteers, rangers, Local and State Government offices, motorcycle and accessory shops and online and can be kept in an on-site weather proof map box in the information bay. Includes:

- Location of the Metro Road ORVA
- Trail and Precinct Map explaining the riding experiences, trails labelled by name with difficulty indicated by color and travel direction (one-way or two-way).
- Trailheads, campgrounds, shelters, viewpoints, interpretive sites and other features.
- Allowable vehicle uses.
- Code of Conduct
- Off-road vehicle registration required and how to get it
- General risk warning
- "Friends of Metro Road", what they do, how to recognize a volunteer, how to join.
- Mandatory and recommended safety gear.
- No alcohol / No rubbish dumping
- Area and trail signage explanations
- Where speed restrictions apply
- Procedure for fire and accident emergencies and associated phone numbers. Nearest first aid facilities.
- Riding behaviours that minimise environmental impacts

- The level of noise emissions that are socially and legally acceptable
- Emergency phone numbers, how to report a fire, damage and risks, rubbish.

On-site Main Signage – in the car parks

- Trail and Precinct Map
- General risk warning
- Boundaries and staying within them
- Code of Conduct
- Off-road vehicle registration required and how to get it
- "Friends of Metro Road", what they do and how to join.
- Mandatory and recommended safety gear.
- No alcohol.
- Current conditions including trails or areas open/closed.
- Area and trail signage explanations
- Where speed restrictions apply
- Procedure for fire and accident emergencies and associated phone numbers. Nearest first aid facilities.
- Riding behaviours that minimize environmental impacts
- The level of noise emissions that are socially and legally acceptable

On-site Entrance Signage

- Name of the area
- Types of vehicles permitted
- "Stop" read the signs – risk message
- No rubbish dumping
- Boundary signage – to advise riders that they are leaving the area and the implications.
- Trail signs – as described earlier in this report.
- Precinct Signs – when entering a precinct.
- Interpretive signs - What is unique about the area including features, species, historical and cultural interpretative information.

Other forms of on-site communication include:

- "Friends of Metro Road" - One of the roles of the Trail Ambassadors is to provide visitor induction and education. This would be done by handing out printed material, taking tours around the area, outreach programs, relationship building and good will and mentoring of visitors.
- Rangers - Additional ranger presence is required to provide a greater presence on site to assist with education and information – as well as enforcement.
- Technology – such as bluetooth downloads at the main unloading areas of latest trail information, GPS coordinates, recorded messages or text replies accessed via mobile phone or even low powered 'tourist radio' broadcasts.

Web Site

Web content should provide information on:

- Location of the Metro Road ORVA
- Trail and Precinct Map explaining the riding experiences at each site. Maps can be interactive with Google Earth overlays, GPS co-ordinates that riders can download (many riders have GPS on their bikes).
- General risk warning
- Boundaries and staying within them
- Code of Conduct
- Off-road vehicle registration required and how to get it
- "Friends of Metro Road", what they do and how to join.

- Mandatory and recommended safety gear.
- No alcohol.
- Types of vehicles permitted
- No rubbish dumping messages
- Current conditions including trails or areas open/closed. This facility could collect information from riders about trail conditions and warnings that can be relayed to the RTRA and Parks & Wildlife for inclusion in maintenance plans.
- Area and trail signage explanations - where speed restrictions apply, procedure for fire and accident emergencies and associated phone numbers, nearest first aid facilities, riding behaviours that minimize environmental impacts, the level of noise emissions that are socially and legally acceptable
- What is unique about the area including features, species, historical and cultural interpretative information.

Recommendation: Education - *develop an Education Program for the first trail development project and should follow Parks & Wildlife standards as used in their other Off-Road Vehicle Areas.*

Compliance - Enforcement

Both the general community and the trail bike riders have expressed concern over “nuisance” and illegal behaviour. This behaviour comes from the area users as well as car “hoons” and members of the community dumping rubbish.

People visiting the areas need to see both police and ranger presence to indicate that “nuisance” and illegal behaviour will not be tolerated.

Effective enforcement results in:

- Increased compliance
- Increased land manager visibility
- Less vandalism (and less resources directed to damage impacts)
- Increased rider security
- Support for volunteers

Enforcement is required to address and stop:

- rubbish dumping
- car dumping
- car and motorcycle hoon behaviour eg riding at speed on access roads or through car parks
- Large bikes riding at speed on mini-rider circuits and novice trails
- cars accessing the areas beyond the car parks

and to enforce compliance of:

- the wearing of mandatory safety gear
- area boundaries
- speed restrictions in applicable precincts
- off-road vehicle registrations
- noise emission levels
- alcohol restrictions

While the entire designated precinct will be gazetted as a ‘Permitted Area’ for Off Road Vehicles, Parks & Wildlife can still apply the CALM Act and Regulations selectively, in order to maintain the principle of not permitting off-trail riding.

“Friends Of Metro Road”

Volunteer patrols via trail guides and trail ambassadors would provide an on-the-ground presence for requesting visitors adhere to local area rules and the code of conduct but they are not an enforcement option. These patrols will be known to rangers and police and they would be provided with ranger and police numbers to call when they require support.

Parks & Wildlife could establish a “Metro Road Watch” for riders to report rubbish dumping by getting area users to text car license plates to an established number.

Recommendation: Compliance - *develop an Enforcement Program with local Police, Shire and Parks & Wildlife Rangers and work with the volunteer patrols.*

PART 5: IMPLEMENTATION PLAN

Work Priorities

Its regional significance and the requirement to transform Metro Road to reshape rider attitudes and behaviour will require a substantial initial scope of works. Trailhead facilities and parking must be developed concurrently with the Project Area trails.

The positive impact that this area can have on reducing the incidence of illegal trail bike riding, and riding in more environmentally sensitive areas will largely depend on how well Metro Road is initially implemented.

Initial Works Package
MOU (Trail Adoption Agreement) between DPAW and RTRA for management of the area.
Control of Vehicles (Off Road Areas) Act 1978 (CVOAA) ● Extend coverage of the Act to the nominated area (or the Shire of Beverley) ● Apply for the area to be gazetted as a "Permitted Area"
Hygiene survey and corridor evaluation
Detailed design: ● Family Zone car park ● Family Zone trails ● Trails Zone trails
Construction: ● Family Zone car park ● Family Zone trails and circuits ○ Beginners 200m circuit ○ Juniors 1400m circuit ○ Skills trail 2800m ○ Family trail loops 5 /11 /25km ● Trails Zone trails ○ Pilot trail re-alignments and access from car park ○ Trails 2,4,5
Risk and Signage - ● Risk assessment for designed trails ● Develop signage plan for initial trails, produce and install
Grading of Metro Road from Brookton Highway to the car park
Toilets - design and construct for the car park
Closures of deprecated trails ranked urgent (for critical environmental or safety reasons)
Development of education and communications plan and materials
Volunteer recruitment
Develop Inspection, Maintenance and Evaluation plan.

Additional work which could be scheduled according to demand:

- Trails Zone car park
- Options sections on all main trails

A decision on expanding the area southwards to Pikes Rd could be made at a later date based on the success of this Concept Plan, rider demand (for variety as well as trail quantity) and the environmental and safety benefits of encouraging greater rider dispersion.

Budgets

The following broad budget estimates have been developed based on the concept plan as it currently exists. Changes to trail alignment should not materially affect the estimates.

Establishment

Item	Qty	Units	Unit Cost	Cost Estimate
Trailhead - Family Zone				
Car park loop road	3,000	sqm	$15	$45,000
Parking Bays	6,000	sqm	$15	$90,000
Unloading Area	4,000	sqm	$15	$60,000
Connector Loop Trail	2,000	sqm	$15	$30,000
				$225,000
Trailhead - Trails Zone[10]				
Car park loop road	3,000	sqm	$15	$45,000
Parking Bays	6,000	sqm	$15	$90,000
Unloading Area	4,000	sqm	$15	$60,000
Connector Loop Trail	2,000	sqm	$15	$30,000
				$225,000
Environmental / Other				
Hygiene Surveys	1	est	$100,000	$100,000
Traffic Counters	12	units	$500	$6,000
Community Consultation	1	est	$15,000	$15,000
				$121,000
Trails Planning				
Pin-flag alignment[11]	34	km	$500	$17,000
Corridor assessment	83	km	$500	$41,500
				$83,000
Trails Construction				
Class 2 Trails	6	km	$3,000	$18,000
Class 3 Trails	75	km	$5,000	$375,000
Class 4 Trails	2	km	$10,000	$16,000
				$409,000
Facilities				
Toilets	1	unit	$50,000	$50,000
Picnic Furniture	8	unit	$1,000	$8,000
				$58,000
Trails Remediation				
Priority trail closures	4	km	$3,000	$12,000
				$12,000

[10] Could be deferred and scheduled according to demand

[11] New trail segments only

Signage				
Entry signage	2	units	$5,000	$10,000
Intersection Control	136	signs	$40	$5,440
Direction / Confirmation	325	signs	$3	$812
Miscellaneous	100	signs	$40	$4,000
Posts	280	posts	$15	$4,206
Replacement inventory	50%	est		$5,967
Installation & Documentation	280	instals	$31	$8,763
				$39,188
Communications				
Volunteer / Ambassador Recruitment	1	est	$15,000	$15,000
Map and Materials Production	1	est	$15,000	$15,000
				$30,000
			TOTAL:	**$1,117,688**

If a staged implementation is required the estimated total costs would be as follows:

- Stage 1: Family Zone – $655,250
- Stage 2: Trails Zone – $543,250
- TOTAL: $1,198,500. The higher total costs reflects additional costs associated with constructing the facility in stages.

Operational

Annual Maintenance				
Trailhead Maintenance				
Grading	6,000	sqm	$1	$6,000
Infrastructure	1	est	$5,000	$5,000
				$11,000
Trail maintenance				
Class 2 Trails	6	km	$600	$3,600
Class 3 Trails	75	km	$750	$56,250
Class 4 Trails	2	km	$2,000	$3,200
				$63,050
Signage Maintenance				
Quarterly audit / maintenance	4	audit	$3,000	$12,000
Replacements & inventory management	25%			$2,563
				$14,563
			Annual Maintenance Total:	**$88,613**

Funding Sources

Direct Government Funding

Off Road Vehicle Registrations

At $15 per vehicle the registration of Off Road Vehicles under the CV(OA)A generates a small amount of revenue each year which can be spent on facilities for these vehicles. The Off Road Vehicle fund is controlled by the Minister for Local Government who has advised the funding priorities for the Account as:

- suitability of potential ORV areas;
- increased rider safety;
- information on the location of ORV areas;
- identification of the ORV users (to better target education and compliance);
- increasing registration numbers/compliance;
- enforcement (Increasing ability to enforce and minimising community impacts); and
- management of existing permitted areas.

Grant funding

Following is a list of potential grants available for off-road vehicle areas. In most instances State Government departments are not eligible for the Grants and so the grant applicant would need to be the Shire of Beverley, the RTRA or the "Friends Of Metro Road" community group.

There are a number of options in this space, including:

GRANT	AGENCY	SCOPE
Trails Grants	Lottery West	Planning (Master Plans), Construction, Upgrade (facilities, signage), Promotion and resources (websites, maps)
ORV Account	DLGC	Funding priorities include suitability of potential ORV areas, increased rider safety, information on ORV areas, management of existing permitted areas.
Events	Lottery West	Help communities stage festivals, fairs, awareness days and other occasions to celebrate and share who they are and what they value
Facilities	DSR	Develop basic infrastructure for sport and recreation.
Community participation	DSR	Projects to increase participation in sport and active recreation or develop the skills of the people involved in an organisation or local community.
Events	Road Safety	Encourage community groups to participate and include road safety activities within their event. $50-$1000. Limit of one application, per event, per year.
Crime prevention	SGIO	Projects that increase safety by reducing the opportunity for crime in local communities, in particular those that aim to reduce the incidence of break-ins or theft from homes, motor vehicles or of personal property
Safety projects	SGIO	Projects that seek to change behaviours and attitudes of drivers, pedestrians and other road users to reduce the likelihood and severity of road incidents
Environment	SGIO	On-ground activities that address local environmental issues

Volunteers	DLGC	Funding of up to $1,000 is available for community organisations to host events/activities on Thank a Volunteer Day, December 5
Crime prevention	DotAG	Any other purpose in aid of law enforcement focussing on community safety and crime prevention initiatives within Western Australia.
Regional	DRD	Royalties for regions
Regional	SWDC	Regional Grants Scheme and Community Chest Fund.
Community Project Sponsorship	RAC	Up to $20k sponsorship for eligible projects

User Pays System

A user pays system in the form of an annual pass has been examined, and appears feasible if visitors to the area can see value in paying a small annual fee towards trail and facility maintenance.

The pass could be similar to the Parks & Wildlife Park Pass and could be sold online, at local businesses and Shire offices. Revenue would go to the RTRA for distribution to projects and maintenance. Spot checks would occur by volunteers at trailheads to check that the pass is visible in vehicles and forms would be left on vehicles not displaying the pass requesting purchase of the pass. It is not considered cost effective or viable to have a resource on the "gate" as the areas will not fenced and this will be difficult to enforce. On that basis this would be a semi-voluntary system with no ability to fine people without passes.

The market most likely to see the value in such a fee is the Family Explorers / Quad and non-road-registered bike riders (provided that Offroad Vehicle Trails are provided), as the legal status of these facilities would be a clear privilege.

Surveys undertaken for the State Trail Bike Strategy and other off-road vehicle areas have indicated a positive response to paying a fee for quality riding facilities. However consideration needs to be given to the vehicle registration already paid where some riders may feel they have already paid for facilities.

Commercial Sponsorship

Parks & Wildlife allows for community groups operating trail systems to sell sponsorship and advertising and retain the funds for use in trail development and maintenance. The RTRA could undertake a sponsorship sales campaign for individual trails and trailheads (subject to Parks & Wildlife approval).

Donations could be taken online, at participating businesses and secure donation bins at trailheads (York off-road vehicle area is a good example of this working well). The RTRA could also undertake fund raising via events, campaigns and drives for specific projects.

CONCLUSION

To be written after review of draft.

APPENDICES

1. Framework for Proposed Trail Development
2. Control of Vehicles (Off-Road Areas) Act 1978 - Advisory Committee Policy
3. State Trail Bike Strategy
4. Principles of trails classification and grading
5. Trail Class Matrix
6. Principles of ORV Risk Management
7. Maps

APPENDIX 1: Metro Road Framework - Department of Parks and Wildlife - Trails Development Process

Framework for Proposed Trail Development

Project Name	Metro Road Motorcycle Area
Project Location	Mundaring & Youraling State Forest
Project Area	Flint forest block, bounded by Brookton Highway, Flint Conservation Park (proposed), McCallum Road and Watershed Road. (Any future expansion of the project area e.g. Gibbs forest block, would require a revision and expansion of the framework) ☑ Plan Attached
Tenure	The project area is State Forest, vested in Conservation Commission of WA, managed by Parks & Wildlife. The project area is located within Shire of Beverley. The project area is under two mining tenements: Alcoa AML7000001 (western edge) and BHP Billiton AM 7000258 (bulk of the area). These are due to expire in 2024 and 2025 respectively. The project area currently excludes land within the Mundaring and Canning Drinking Water Source Protection Areas and subject to Department of Water Statewide Policy 13. In the event that Policy 13 or the DWSPA boundaries are amended in the future the boundaries of the project area could be expanded.

Background	"Metro Road" is the colloquial name given to a region of gently undulating open Wandoo and Marri woodland approximately 75 km Southeast of Perth. The area has a long history of trail bike use. Competitive enduro events were held from the early 1970's until 2006. In the early days the events were held in the mid section and to the north near the Brookton Hwy. In more recent times the area for Enduros was restricted to the southern area closer to Albany Hwy. The area has also been extensively used for recreational riding, much of it in contravention of the CALM Act 2002 and Road Traffic Act 1974. While the area is not officially sanctioned, it has been seen by land managers throughout the metropolitan and peri-urban areas as a 'least worst' option to direct trail and quad bike riders who might otherwise be riding in areas with greater conservation values and / or on designated non-motorised trails. As a result, Parks & Wildlife and local Shire Rangers often (unofficially) suggest the area to riders who are intercepted while riding in problematic areas. Some illegal camping occurs, particularly in the southern section, and this is not always associated with riding activities. Rave parties have been known to be held in the area. Anecdotally, the use of the Metro Road area has been increasing, and in the absence of any planning, management or visitor facilities there is significant damage to environmental and potential heritage values occurring, as well as an increasing safety risk. There is an inconsistent approach by visitors to rubbish. Some do the right thing and take their rubbish with them when they leave; others discard their rubbish on site. Occasional dumping – ie., large loads of household or commercial waste – occurs along Metro Road itself. The RTRA has organised two major clean ups of the car park areas and road verges. Design and a management development is required to create a safe and environmentally sustainable riding area. Developing a satisfying user experience will guide and draw riders from more environmentally sensitive areas.

	The Offroad Vehicle Land Planning Study commissioned by DEC in 2011 identified the Metro Road area as the most suitable location between Perth and Collie for development as a sanctioned trail and quad bike riding precinct. The area has the potential to support several of the State Trail Bike Strategy recommendations: ● The development of two additional ORV areas – south metro and east / hills (Rec 2.022) ● An additional regional ORV area (Rec 2.023) ● Designated trail systems that include some limited sections open to Junior licence holders (Rec 2.026) ● Trails and circuits within ORV areas for quads only and consider areas or routes suitable for a 'destination trail' for quads (Rec 2.027) ● Selected public trails as ORV areas so that they can be used by ORV-registered vehicles and junior riders to deliver the destination trail ride concept to family groups (Rec 2.028) A 16km signed 'Pilot' Trail was developed in 2012 to test sustainable development principles. The Pilot Trail has been monitored and maintained and evaluation has been positive. A 'Traker' Trail counter was installed and recorded 5,284 passes between May 2012 and August 2014. An online survey of riders reported over two-thirds of rider respondents felt that the trail was the right length and degree of difficulty. 97% claimed to have ridden in the 'preferred direction' of the trail. The proposed scope is necessary to provide the ride duration, quality and variety that will enable the Metro Road precinct to meet its objectives in attracting riders away from more environmentally sensitive areas and to cater for the resulting demand. The proposed scale is necessary to meet the demand that such a quality facility would generate. As this is not a 'greenfield' site the project will need to take account of, and make use of where appropriate, the extensive network of existing trails.
Steering Group	Proposed Steering Group to include: ● Parks & Wildlife x2 ● RTRA x2 ● DSR x1 ● MWA x1 ● LGA as required Supported by a broader Rider Reference group for the planning stage. Identified stakeholders: ● Parks & Wildlife ● DSR ● Riders of two and four wheeled Off-road Vehicles ● Parents of junior riders ● RTRA ● Motorcycling WA ● Department of Water ● Police ● Local land-owners / residents ● Nearby businesses ● Motorcycle Industry ● Local government
Objectives	● To plan, develop and promote a legal, high quality, sustainable, low maintenance and permanent regional trail riding precinct.

	● To provide a single use trail network of predominantly single track riding opportunities. ● To provide a trail network and associated infrastructure to significantly expand the inventory of legal riding opportunities for families and junior riders. ● To restore damaged areas of vegetation and adopt a more environmentally sustainable model for the area to protect environmental and heritage values ● Design and build a trail network that protects the environmental and other values of the project area, and the amenity of neighbouring landowners. ● To provide for trail-oriented riding disciplines that deliver a different riding experience to Pinjar and other ORV areas by focusing on trails rather than circuits. ● To provide camping facilities and multi-day use. ● To help reduce the amount of illegal riding in more environmentally sensitive areas. ● To improve safety of riders in the area, by progressively replacing the current proliferation of high-speed logging roads with purpose-built, signed trails. ● To improve safety for riders currently riding elsewhere, by providing a safer alternative with a better riding experience. ● To develop a model for large scale, trail-based recreation facilities that can be utilised at other suitable locations.
Management Model	**Trail Owner:** Department of Parks & Wildlife. The entirety of the trails inventory will be within State Forest, with Parks & Wildlife the responsible land manager. **Trail Operator:** RTRA in partnership with Parks & Wildlife via a Trail Adoption Agreement **Maintenance:** The RTRA to create and manage a 'Friends of Metro Road' group for monitoring and maintenance tasks as appropriate. Ongoing trail maintenance of the network would be undertaken by the RTRA under the Trail Adoption Agreement. RTRA and Parks & Wildlife would partner to undertake major maintenance as required. **Monitoring:** ● RTRA to provide quarterly trail counter statistics capable of being uploaded to the departmental VISTAT database. ● RTRA to undertake yearly on ground trail usage survey to ensure that trails meet user expectations and inform future development. ● RTRA to undertake ongoing trail quality monitoring and provide avenue for users to report trail issues. ● Parks & Wildlife to carry out yearly visitor risk management assessment and provide system for RTRA to report identified issues.
Scope and Scale	**Significance and Importance** This area has the potential to serve as a regional trail-oriented facility for motorised trail bike use, covering the greater Perth metropolitan area. It would be the largest and most significant off-road vehicle area of its type in Western Australia and of high importance given its proximity to the Perth population base. **Scale** Target trail classification/distances for the project area is: ● Beginners: 1 x 300m circuit - for first timers and very young children. ● Peewees: 1 x 1400m circuit - for novice young riders on small bikes.

	● Skills Trail: 1 x 3km loop trail - a green (easy) loop that provides samples of trail features. ● Green: 2 x 10km loop trails, able to be ridden as a single 20km loop ● Blue: 3 x 20km loop trails, able to be ridden as 20, 40 or 60km loops ● Black: 1 x 10km loop trail + 4km of technical options off blue trail network where possible The above targets are subject to variation on the basis of Site Assessment, Concept Plan and Corridor Evaluation **Proposed Use** Recreational trail bike use only ie non-competitive. Long distance trails of up to 60 km return required for trail bike touring, range of trails to suit all ability levels. The trails would be designed to exclude 4x4 vehicles for safety reasons. **Infrastructure** ● Trailhead including car and trailer parking, picnic facilities, toilets ● Information bays, interpretive signage, trail signage ● Access road to trailhead and car park ● Emergency vehicle access and potential helicopter landing area ● Camping site(s) **Connections / Access** ● Main connection is from Brookton Hwy via Metro Road **Staging** The staging of facility and trail development will be subject to suitable funding being secured and will be considered in detail as part of the Concept Plan development. **Scope** As this is not a 'greenfield' site and there are hundreds of kilometers of existing trails, the project will need to take account of, and make use of where appropriate, the extensive network of existing trails. Trail re-alignments and sections of new trail may be required. If after planning, sections of existing trails are not used they will ultimately be closed or replaced by the formal trail network as it is developed over stages. However, it is not proposed to immediately close existing trails or restrict access to informal trails as this would significantly reduce the trails inventory. W but where possible, and sustainable, trail entering risks will be mitigated. All trail development is to be considerate of the topographical, terrain and environmental attributes, which will guide the style of trail and technical features e.g. open flowing trail developed in more open terrain and technical trail developed in heavily featured and mixed terrain. To ensure the underlying conservation status of the land is maintained in terms of the aesthetics, infrastructure and constructed technical terrain features to be minimised in the natural setting with a focus on utilising natural features. Parks & Wildlife in conjunction with RTRA will determine the appropriateness of any infrastructure proposals.
User Types and Styles	The overall concept of the area is for a natural trail-based experience. Limited short circuit riding (500 – 1500m circuits) would be provided for beginner riders, to supplement the trails and to minimise the risk of abuse of car park and camping areas. **Trail-based:** ● Trail bike touring, including 'family friendly' options – Green, Blue, Black. Up to 60km return loops. ● Single track – Green, Blue, Black ● Quad touring – Green, Blue

	Circuit-based: ● Beginners, juniors – Green **User type targets:** ● Trail riders ● Mini riders ● Family explorers ● Quad riders **Target trail classification:** ● 25% green (easy, beginner, novice) ● 50% blue (intermediate) ● 25% black (advanced) **Excluded:** Cross country (i.e.; off-trail) riding, racing, competitive events, 4WDs, horses, mountain bikes, Side by Side ORVs.
Trail System/Model	**Trail system:** Prescribed Route/Trail Network gradually replacing existing user generated trails. To ensure there is not a significant loss of trail inventory, iIn the short to medium term the area will comprise both: (a) trails that have been mapped, designated, classified (for experience level) and signed, and that are monitored and maintained, and (b) Pre-existing trails and former logging roads that are not promoted as part of the managed network Where possible, and sustainable, trail entering risks will be mitigated. **Trail model:** Stacked loop trails and junior circuits. Combination of single-track, twin-track and minor road, and dedicated circuits for particular user groups. **Trail direction:** Trail direction will be clearly signposted. **Area gazettal:** Inclusion of non road-registered vehicles and participants under 16 years of age will require gazettal as a Permitted Area under the Control of Vehicles (Offroad Areas) Act 1978.
Agreed Standards	To be consistent with Parks & Wildlife Guidelines
Funding	**Framework development:** Parks & Wildlife **Site assessments:** Parks & Wildlife, DSR **Concept Plan development:** DSR, Parks & Wildlife, **Construction:** To be determined, but likely to include a mix of Lotterywest Trails Grant, Offroad Vehicles Account, CSRFF, Royalties for Regions, Parks & Wildlife, DSR, corporate trail and area sponsors. **Operational funding:** Consider payment for camping, parking and/or use - online booking and payment. Offroad Vehicles Account, CSRFF, Royalties for Regions, Parks & Wildlife.
Delivery	Staged delivery anticipated: 1. Concept Plan including trail planning, trailhead infrastructure, maintenance requirements, governance and promotion. To be project managed by DSR, with progressive guidance from the Steering Committee. Project manager: DSR Compliance: Parks & Wildlife Delivery: Consultant

	Selection: Quote Role: Development of Concept Plan, report and documentation. Timeframe: end of August 2016 2. Staged implementation – subject to an approved Concept Plan and availability of funding. Includes necessary gazettals, signage, promotion, infrastructure development. Project management and responsibilities to be as determined in the approved Master Plan.
Evaluation	Success of the Concept Planning stage of project will be evaluated on whether the plan meets framework objectives including Scope and Scale, User Types and Styles, and Trail system. Success of the development will be evaluated on Trail traffic counting and impact monitoring, economic benefit monitoring, user behaviour monitoring, user satisfaction monitoring, environmental monitoring, safety (incident) monitoring. To be further defined in Concept Plan.

APPENDIX 2: Control of Vehicles (Off-Road Areas) Act 1978

This information has been provided by the Department of Local Government.

The application is to be be addressed to the Minister. The Department would recommend that a joint application be made from Parks & Wildlife and the local government which clearly sets out each entity's responsibilities in relation to the proposed area and implications for surrounding areas.

Advisory Committee Policy on Applications to Extend the Area of Operation of the Act

The Advisory Committee has adopted a policy that any council applying to have the area of operation of the Act extended to its district must make a submission, which demonstrates that, the council:

1. Can identify that is has a significant problem[12] with vehicles off road and can provide details of the nature and extent of the problem.
2. Is aware of the provisions and intention of the Act.
3. Is able to indicate it has the capacity to enforce the Act and intends to do so.
4. Has given consideration to the effect of applying the Act. This includes the provision of permitted areas for the vehicles prevented from using the area brought under the control of the Act.
5. Can indicate whether consideration has been given to other methods of control – By-laws, or passive control of use of signs.
6. Is clearly able to identify the area to which the Act will apply.

Advisory Committee Policy on Applications for Permitted Areas

The Advisory Committee has adopted a general policy that any council which applies for a specified site to be declared a permitted area be requested to make a submission which supplies information on the following:

1. A description of the area requested, including a plan and details of ownership of the land.
2. Proposed management details for the site, including a sign posting provisions and safety provisions.
3. Required restrictions – justifications should be detailed.
4. Access available to site.
5. Environmental factors, including proximity of houses.
6. General noise level details for the area.
7. Terrain type.
8. What service utilities are likely to be affected?
9. What objections are there to the proposal?
10. Facilities currently on site.

When these details are available the Committee can proceed to meet the requirements of the Act such as advertising, consideration of submissions and preparation of reports on the site for the Minister.

Questions asked by consultants to DLG. "Can coverage of the Act be applied only to an area that is to be permitted or does it have to apply to the whole of the district(s) or local government area(s)? In other words are there any restrictions to the size of the area to be covered?"
DLG response: "There does not appear to be a restriction on this. However, authorised persons will have limited means of enforcement if off-road vehicle riders engage in inappropriate behaviour outside of the permitted area."

[12] Consultant's Note - In our opinion, as the Act is a "beneficial" Act, demonstration of an opportunity instead of a problem should also qualify.

APPENDIX 3: State Trail Bike Strategy

Escalating community tensions and rider concerns over the perceived shrinkage of legitimate riding opportunities led to the development of the State Trail Bike Strategy in 2007. This project supports and aligns with the following recommendations:

Rec #	Recommendation	Implication
1.01	Develop a Master Risk Management Planning Kit that can be applied and tailored to individual ORV Areas and designated trails.	**Not yet implemented**. Could be developed for and piloted at Metro Rd.
1.02	Develop a Risk and Liability information kit for riders including advice about personal accident insurance, income insurance, ambulance cover etc	**Partially implemented** ('So Where Can I Ride' booklets). Could be incorporated into rider information package for Metro Road and spun off as stand-alone information.
1.03	Develop a Trails Planning /Design / Signage Kit to maximise user satisfaction, reduce risk.	**Partially implemented** (Master Plans for Parks & Wildlife-managed ORV Areas). Could be extended and refined for Metro Road.
1.05	Encourage adoption of Adventure Activity Standards principles by riding groups	**Partially implemented** through RTRA promotion. Could be adopted as best practice principle for riding groups visiting Metro Road
2.01	Develop a 'trails inventory' as the basis for a transition to the concept of designated trails to prevent proliferation of user-created trails	**Not yet implemented**. Could be developed for and piloted using Metro Road trails network.
2.023	Additional regional ORV Areas	**Not yet implemented**. Metro Road would be the first regional scale ORV area.
2.026	Designated trail systems that include some limited sections open to Junior licence holders.	**Not yet implemented**. Could be developed for and piloted at Metro Road.
2.027	Trails and circuits within ORV Areas for quads only and consider areas or routes suitable for a 'destination trail' for quads.	**Not yet implemented**. Could be developed for and piloted at Metro Road.
2.028	Selected public trails as ORV areas so that they can be used by ORV-registered vehicles and junior riders to deliver the destination trail ride concept to family groups.	**Not yet implemented**. Could be developed for and piloted at Metro Road to extend the trails inventory without requiring a very large ORV ARea boundary.
2.04	Develop permit system – 'privilege pass' – that gives access to more environmentally sensitive land only to those who can demonstrate a preparedness to take special care of the environment.	**Not yet implemented**. Could be incorporated into an annual pass or other pay-to-use instrument.
2.07	Develop a standardised matrix for the evaluation of riding areas and trails.	**Partially implemented** via Parks & Wildlife Motorised Off Road Vehicle Working Group. Could be further developed and adopted at Metro Road.
2.10	Establish key trial sites to demonstrate principles of good design and management and assess impacts on rider behaviour.	**Implementation underway**. Pinjar Off Road Vehicle Area and the Metro Road Pilot Trail are current models, but the opportunity to develop a best practice case study is significant.

3.02	Ensure that impacted agencies are adequately resourced to undertake the required tasks.	**Not yet implemented**. The Off Road Vehicle Fund is supported by registration fees for off road vehicles, and the available funding should be directed to develop and maintain off road vehicle areas. Partial funding to support the development and maintenance of any Off Road Vehicle Area (or trails) should be made available to Parks & Wildlife from this fund.
3.03	Create Local Management Committees to manage individual ORV areas. Develop a Terms of Reference and Management Guidelines for these Committees.	**Partially implemented.** Parks & Wildlife currently has track adoption agreements and MOUs with the RTRA. A similar arrangement is anticipated with a local 'Friends of...' or rider group at Metro Road.
3.04	Develop guidelines for the use and management of tracks. Parks & Wildlife in conjunction with riders and associations such as RTRA and Motorcycling WA.	**Partially implemented**. Could be refined, deployed and assessed as part of the Metro Road Management Model.
3.05	Identify and designate certain trails as being for trail bikes only to reduce user conflict.	Metro Road is one of the few areas used by trail bikes that doesn't have pre-existing competitive trail use – eg 4WD, mountain bikes, walkers or horses.
3.06	Develop a standardised Trail Development Planning Kit and a course on designing and maintaining off-road vehicle areas and trail systems for Land Managers.	**Partially implemented** via Parks & Wildlife Trails Framework. In the longer term there may be potential for Metro Road to become a 'centre of excellence' with national appeal.
3.07	Adopt the International Trail Marking System and the Department of Parks and Wildlife's Signage Guidelines.	**Implemented** at Pinjar and Metro Road Piloted Trail and recommended for Metro Road trails network.
3.09	Develop parking / unloading areas and create facilities to attract users into approved areas.	**Implemented** successfully at Pinjar. Trailheads are envisaged as part of the Metro Road trails concept plans.
3.10	Work with trail bike clubs and associations and other groups to create volunteer programs to maintain trails and improve access.	**Implemented** successfully at Pinjar (RTRA) and envisaged as part of the Metro Road Management Model.
3.11	Establish visual trail monitoring and traffic counting with a series of collection points for trail monitoring purposes.	**Partially implemented** at Pinjar (trail traffic counters only). Would be required on specified Metro Road trails to inform trail impact reviews and to develop an understanding of maintenance requirements.
3.12	Consider noise reduction solutions such as buffers and placement when designing ORV areas and trail systems.	Will be considered in trail, area and trailhead planning. It is noted that Parks & Wildlife have established a Conservation Zone as a buffer to neighbouring properties to the east.
3.13	"Less sound, more ground" campaign to educate, inform, raise awareness and change rider behaviour relating to noise emissions.	**Partially implemented** (via RTRA communications). Could be incorporated into Metro Road rider information materials.
3.18	Establish limits of acceptable impact on a per-area basis.	**Not yet implemented**. Could be developed and piloted at Metro Road.
3.19	Develop a formal evaluation program to assess results and impacts of the various initiatives.	**Not yet implemented.** Could be developed and piloted at Metro Road as part of the Management

		Model.
4.20	Establish a specialised ORV Compliance Unit to more efficiently conduct rotating enforcement patrols of problem areas with Authorised Officers or 'Honorary Inspectors' as provided for under the Control of Vehicles (Off Road Areas) Act 1978.	**Not yet implemented**. A 'Trail Ambassador' program is being developed for the Pinjar Off Road Vehicle Area. This could be adapted for Metro Road as part of the Management Model.
4.25	Trial a rider/ user volunteer program in one ORV area.	**Partially implemented** at the Pinjar Motorcycle Area. Could be expanded and adapted for Metro Road as part of the Management Model.
4.26	Involve local trail bike riders as members of Community Management Committees for each ORV area and trail system.	**Not yet implemented.** Would be developed as part of the Metro Road Management Model.
5.06	Clarify that ORV areas can be designated to include specified trails, (excluding the area either side of the trail) and not just land areas defined by administrative boundaries.	**Confirmed, but yet to be piloted**. This is the mechanism envisaged to enable family riding on selected Metro Road trails, without requiring the entire area to be gazetted as an ORV Area.
5.18	Conduct a study into the Junior Riders' Licence (Early Learners' Permit) concept.	**Not yet implemented**. Could be undertaken at Metro Road as a case study using visitor data and surveys once family riding options have been activated.
6.04	Expand the LotteryWest Trails grant funding to include motorised trails.	**Implemented**. Lotterywest trails grants are now available for motorised trails planning, construction, upgrades, associated facilities and promotion. Could be used to help fund trails at Metro Road
6.05	Introduce an 'area use' fee for those areas where facilities are provided and where trail maintenance is carried out on a regular basis.	**Not yet implemented**. Could be established as an annual 'Metro Road Trails Pass' or as a parking fee for trailheads.

APPENDIX 4: Principles of trails difficulty ratings

A general principle in classifying trails for different levels of users is that the hardest non-optional section of trail determines the overall trail grading. There's no point calling a trail a 'Beginners' Trail if 98% of it is wide smooth and flat but the remaining 2% is a steep, rutted, gnarly goat-track.

There are currently no accepted national or international standards for rating trail bike and ATV trails, so any classification system will be largely subjective. There does, however, appear to be broad support for adopting the three-tier classifications as used in skiing;

- **Novice - Green**
- **Intermediate – Blue**
- **Advanced - Black**

Judgment and observation, together with rider feedback is necessary to develop a feel for the types of terrain and challenges that define the boundaries of each level. To this end it is useful to create a 'reference group' that comprises 'average' level riders within each of the bands of Novice, Intermediate and Advanced.

The following guidelines have been adapted for motorised trail bikes and quads from the International Mountain Biking Association (IMBA) guidelines for mountain bike trails.

1. Rate Technical Challenge, not Impact of Speed

Even the simplest trail will become 'technical' as speed increases. For this reason the focus should be on rating the technical challenge of trails, not the risks that increase with speed.

2. Evaluate Difficulty Relative to Local Trails.

In the absence of standardised and quantifiable criteria trails should be rated relative to other trails in the area. A black diamond trail in one region may rate as a blue square in another region, but the ratings should be consistent locally.

3. Use Good Judgment.

Rating a trail is not 100 percent objective. It's best to combine tangible data with subjective judgment to reach the final rating. For example, a trail may have a wide range of tread surfaces - most of the trail is easy, but some sections are more difficult. How would you rate it? Use personal experience (and if possible a reference group) to consider all elements and select a rating that best matches the style of trail.

4. Consider Other Trail Qualities.

A wide variety of features can contribute to a trail's difficulty. For example, exposure - the feeling of empty space next to and below the trail tread - provides an added psychological challenge beyond the steepness or roughness of the trail. A 3-inch rock seems like a boulder when a 50-foot drop looms on your side! Other qualities to think about are corridor clearance and turn radius.

5. Consider the 'B' line

With just a little thought different lines through obstacles can provide a range of challenges. For example a hill climb might have a graded side and a rutted side so the same group of mixed-ability riders can each select the appropriate level of challenge. In the context of Gnangara and Pinjar this could equate to a trail with obstacles such as logs or whoops that has an easier bypass around those sections.

Criteria to Consider

Tread Width - The average width of the active tread or beaten path of the trail.

Tread Surface - The material and stability of the tread surface is a determining factor in the difficulty of travel on the trail. Some descriptive terms include: hardened, firm, stable, variable, widely variable, loose and unpredictable, sandy, slippery, rocky. Firmer surfaces make for easier riding.

Hills – Hills are probably the most common technical challenge that impact on trail difficulty rating. A novice can be expected to conquer a hill where there are no obstacles to impede progress (eg rocks, ruts, tree stumps etc) and where traction can be maintained at a relatively low speed. An intermediate rider can be expected to conquer a hill where momentum is necessary to maintain traction but where there are only moderate obstacles, while an Advanced rider can be challenged by steeper terrain that demands commitment and skill to navigate multiple obstacles.

Natural Obstacles - Objects that add challenge by impeding travel. Examples include: rocks, roots, logs, holes, ledges, drop-offs, etc.

Appendix 5: Trails Class Matrix

Trails Class Matrix[1]

Trail Attributes	Trail Class 1 **Minimally Developed**	Trail Class 2 **Moderately Developed**	Trail Class 3 **Developed**	Trail Class 4 **Highly Developed**	Trail Class 5 **Fully Developed**
Tread & Traffic Flow	Tread intermittent and often indistinct. May require route finding. Single lane, with no allowances constructed for passing. Predominantly native materials.	Tread continuous and discernible, but narrow and rough. Single lane, with minor allowances constructed for passing. Typically native materials.	Tread continuous and obvious. Single lane, with allowances constructed for passing where required by traffic volume in places where there is no reasonable opportunity to pass. Native or imported materials.	Tread wide and relatively smooth, with few irregularities. Single lane, with allowances constructed for passing where required by traffic volume in places where there is no reasonable opportunity to pass. Double lane where traffic volume is high and passing is frequent. Native or imported materials. May be hardened.	Tread wide, firm, stable, and generally uniform. Single lane, with frequent turnouts where traffic volume is low to moderate. Double lane where traffic volume is moderate to high. Commonly hardened with asphalt or other imported material.
Obstacles	Obstacles common, naturally occurring, often substantial, and intended to provide increased challenge. Narrow passages; brush, steep grades, rocks and logs present.	Obstacles may be common, substantial, and intended to provide increased challenge. Blockages cleared to define route and protect resources. Vegetation may encroach into trailway.	Obstacles may be common, but not substantial or intended to provide challenge. Vegetation cleared outside of trailway.	Obstacles infrequent and insubstantial. Vegetation cleared outside of trailway.	Obstacles not present. Grades typically < 8%.
Constructed Features & Trail	Structures minimal to non-existent.	Structures of limited size, scale, and quantity; typically constructed of native	Structures may be common and substantial; constructed of imported or native materials.	Structures frequent and substantial; typically constructed of imported materials.	Structures frequent or continuous; typically constructed of imported materials.

[1] US Forest Service 2011

Elements	Drainage typically provided without structures. Natural fords. Typically no bridges.	materials. Structures adequate to protect trail infrastructure and resources. Natural fords. Bridges as needed for resource protection and appropriate access.	Natural or constructed fords. Bridges as needed for resource protection and appropriate access.	Constructed or natural fords. Bridges as needed for resource protection and user convenience. Trailside amenities may be present.	May include bridges, boardwalks, curbs, handrails, trailside amenities, and similar features.
Signs	Route identification signing limited to junctions. Route markers present when trail location is not evident. Regulatory and resource protection signing infrequent. Destination signing, unless required, generally not present. Information and interpretive signing generally not present.	Route identification signing limited to junctions. Route markers present when trail location is not evident. Regulatory and resource protection signing infrequent. Destination signing typically infrequent outside wilderness areas; generally not present in wilderness areas. Information and interpretive signing uncommon.	Route identification signing at junctions and as needed for user reassurance. Route markers as needed for user reassurance. Regulatory and resource protection signing may be common. Destination signing likely outside wilderness areas; generally not present in wilderness areas. Information and interpretive signs may be present outside wilderness areas.	Route identification signing at junctions and as needed for user reassurance. Route markers as needed for user reassurance. Regulatory and resource protection signing common. Destination signing common outside wilderness areas; generally not present in wilderness areas. Information and interpretive signs may be common outside wilderness areas. Accessibility information likely displayed at trailhead.	Route identification signing at junctions and for user reassurance. Route markers as needed for user reassurance. Regulatory and resource protection signing common. Destination signing common. Information and interpretive signs common. Accessibility information likely displayed at trailhead.
Typical Recreation Environs & Experience	Natural and unmodified. ROS: Typically Primitive to Roaded Natural. WROS: Typically Primitive to Semi-Primitive.	Natural and essentially unmodified. ROS: Typically Primitive to Roaded Natural. WROS: Typically Primitive to Semi-Primitive.	Natural and primarily unmodified. ROS: Typically Primitive to Roaded Natural. WROS: Typically Semi-Primitive to Transition.	May be modified. ROS: Typically Semi- Primitive to Rural WROS: Typically Portal or Transition.	May be highly modified. Commonly associated with visitor centers or high-use recreation sites. ROS: Typically Roaded Natural to Urban. Generally not present in Wilderness areas.

APPENDIX 6: Principles of ORV Risk Management

In the context of trail bike riding the legal underpinning to any risk management strategy is the Civil Liability Act 2002 which provides that there is no liability for harm caused by obvious risks associated with recreational activities nor for harm caused by inherent risks.

The effect of this legislation is to give people the right to choose to engage in activities that carry risk of personal injury or death, while providing protection for those land owners and managers who provide facilities where those activities can be undertaken.

Notwithstanding the risk transfer accomplished by the Civil Liability Act 2002, there remain certain obligations -- both legal and moral -- owed as a duty of care to visitors to an area.

A risk management plan explores the risks to the public and to the land owner or manager and seeks to mitigate this risk through a series of deliberate actions.

The steps involved in developing a risk management plan are:

1. Identify hazards
2. Assess the risks
3. Manage the risks
4. Review and monitor

Hazard Identification

Hazard identification involves consideration of all natural or man-made objects or circumstances that could give rise to injury. The identification process should not be influenced by any presumption of the ease or difficulty of mitigating the hazard and should be a continuous, rather than a one-off process.

Typical input into hazard identification includes a review of past incident reports, site inspection, interviews or focus group research with those people most directly responsible for the management of an area, relevant reports, articles or case studies and interviews with visitors to the area.

Hazards are relative to the overall difficulty grading of a trail. For example a 30cm diameter log across an advanced trail may be considered a positive trail feature, whereas that same log on a novice trail would represent a risk.

It is important to properly document the hazards, both for effective management and as evidence of the review and consideration process. An effective way of documenting hazards in a trails environment is to establish a trail start marker and use distance from start as the identification of specific locations. This enables a relatively quick process of identification and subsequent review.

Assessing The Risk

Assessing the risk draws on three elements from the occupiers liability principles:

1. The likelihood or probability of the event occurring - from practically impossible to almost certain.
2. The frequency of exposure to the hazard - influenced by the number of visitors to the site and the length of time visitors spend in the area.
3. The potential consequences or impact of an incident or injury -- from inconsequential to catastrophic

Taken in combination, these three elements can be used to determine the overall level of risk and to help guide decisions as to whether a level of risk is acceptable or not.

In practical terms we would recommend using a Likelihood / Consequence rating scale[13], where:

[13] Based upon AS/NZS 4360- Risk Management guidelines and adapted to suit.

Likelihood: 1. Almost Certain 2. Likely 3. Possible 4. Unlikely 5. Rare
Consequence: 1. Insignificant 2. Minor 3. Moderate 4. Major 5. Catastrophic

Priority should be given to those risks that have a higher Consequence rating, even if they are relatively low Likelihood.

The process should be undertaken at periodic intervals. Obviously the initial documentation will take some time to do thoroughly but subsequent reviews will only require identification of new or changed risks. Given the nature of the trails we would suggest a monthly review supplemented by a facility for riders to report any hazards they encounter on the trail.

A Management Strategy

A management strategy can be applied to each assessed risk. There are four main risk management options:

1. Accept the risk
2. Eliminate the risk
3. Minimise the risk
4. Transfer the risk

Accepting the risk can be an appropriate option where the overall risk level is considered low, where the hazard is an obvious natural hazard or where removal or minimisation would require expense or effort that a reasonable person would find unreasonable. A decision to accept risk should only be taken after careful consideration and caution.

Eliminating the risk is the safest option, but may not be practical for economic reasons or for reasons of utility. This is particularly the case in facilities for recreation where obstacles are part of the challenge sought by participants.

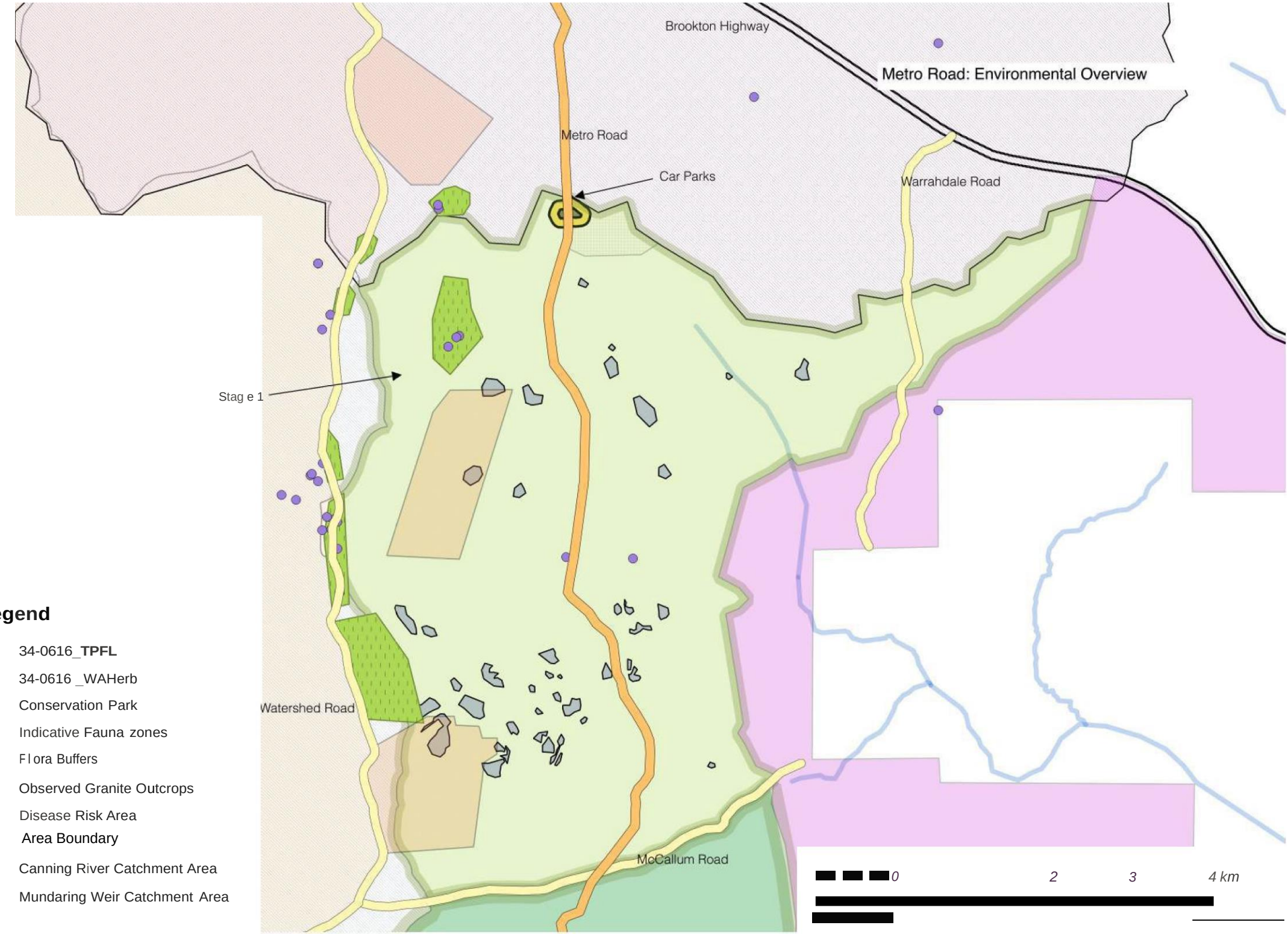
Minimising risk can occur in many ways. Identified hazards can sometimes be modified so as to minimise risk whilst maintaining the original nature of the object. Where it is impractical to modify the hazard, appropriate warnings can help avoid incidents. Where it is impractical to post warnings on every identified hazard a broader educational program can provide visitors with a general warning about the nature of the area together with information to encourage appropriate visitor behaviour.

Risk transference typically involves obtaining an indemnity from participants whereby they acknowledge the risks and accept the consequences. The Civil Liability Act 2003 does away with the need to obtain written waivers in the case of obvious risks associated with dangerous recreational activities, however it obviously strengthens a defense to prove that the participant acknowledged awareness of the risks via a signed waiver.

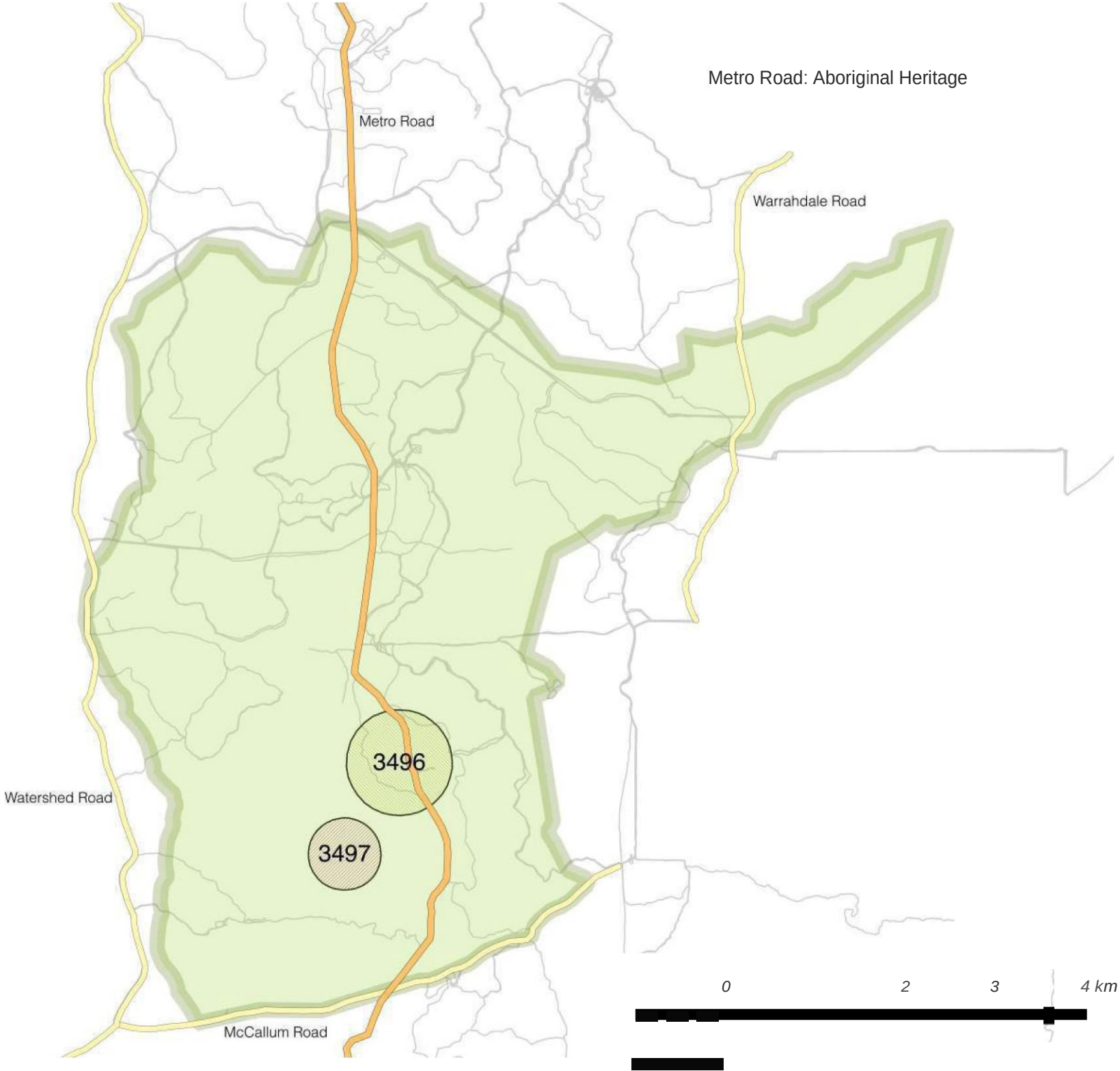
Reviewing and Monitoring

Reviewing and monitoring the risk management plan is absolutely essential, both to identify new hazards that may have emerged and to ensure that the assessment of risks and associated management strategies remain current and properly implemented.

APPENDIX 7: Maps


Brookton Highway
Metro Road: Environmental Overview
Metro Road
Car Parks
Warrahdale Road
Stag e 1
Watershed Road
McCallum Road
Legend
34-0616_TPFL
34-0616 _WAHerb
Conservation Park
Indicative Fauna zones
Flora Buffers
Observed Granite Outcrops
Disease Risk Area
Area Boundary
Canning River Catchment Area
Mundaring Weir Catchment Area
0
2
3
4 km

Metro Road: Aboriginal Heritage



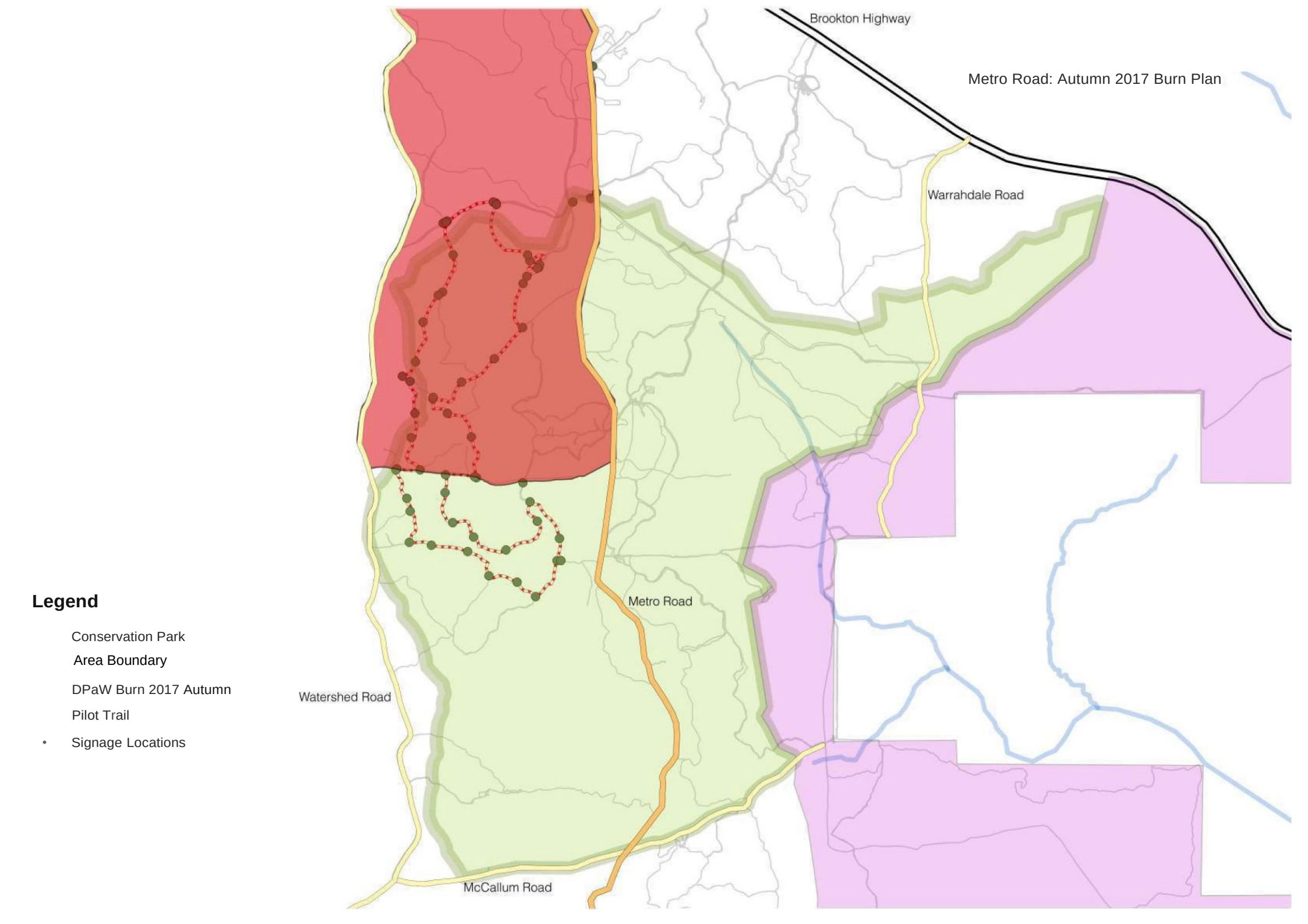
Legend

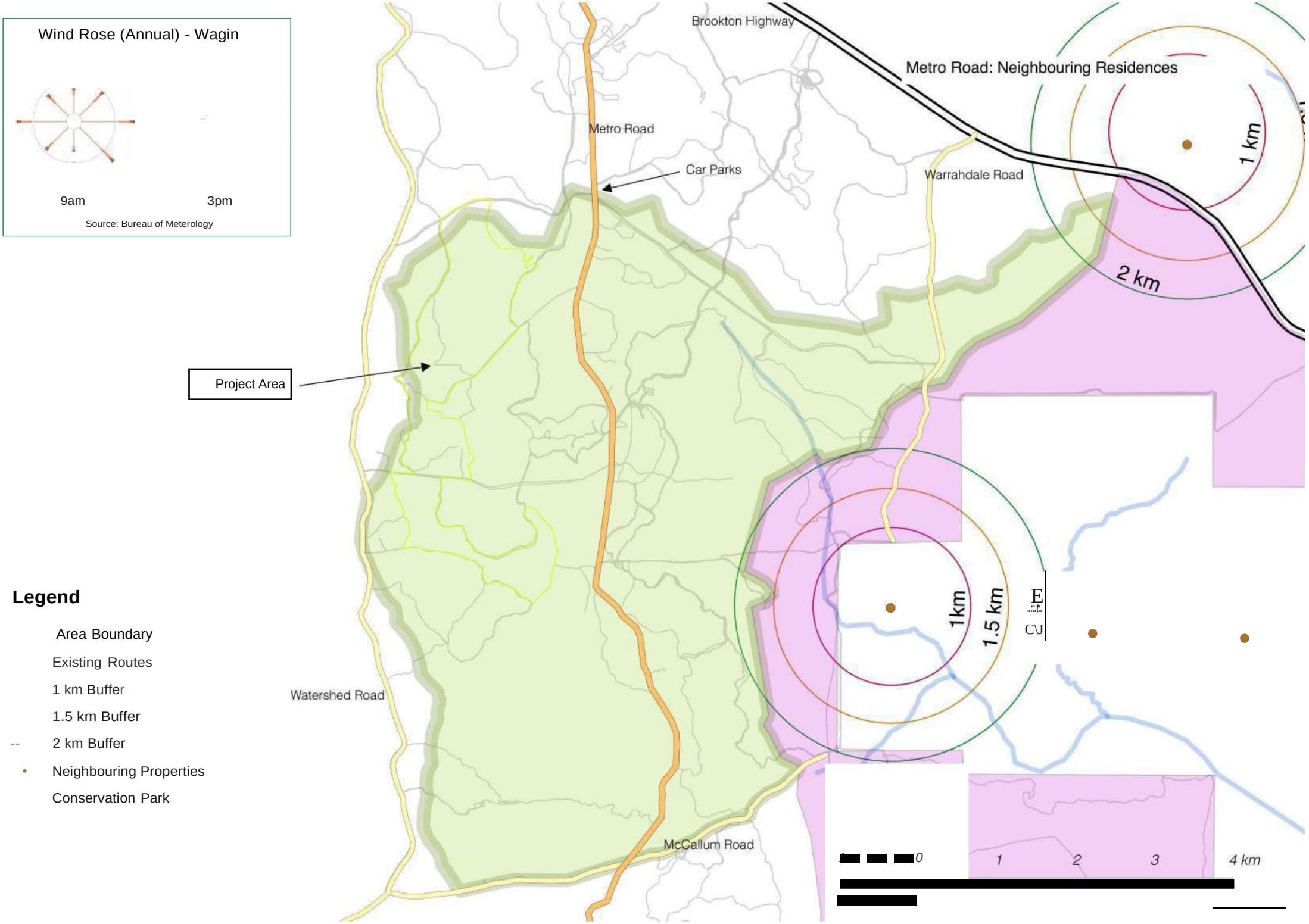
Area Boundary

3496 - Other Heritage Place

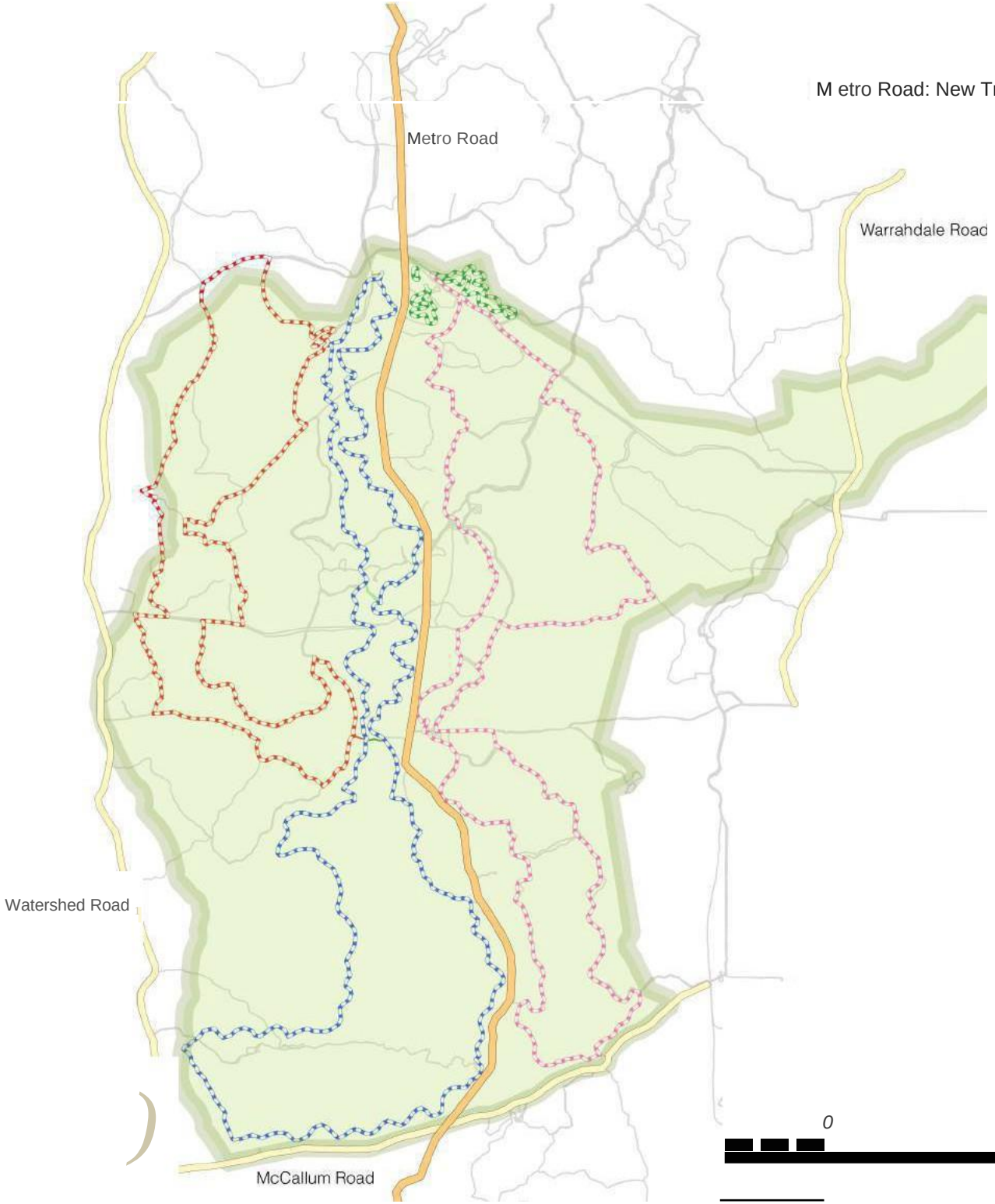
3497 - Registered Site

Existing Routes


Metro Road: Autumn 2017 Burn Plan
Brookton Highway
Warrahdale Road
Metro Road
Watershed Road
McCallum Road
Legend
Conservation Park
Area Boundary
DPaW Burn 2017 Autumn
Pilot Trail
Signage Locations


Wind Rose (Annual) - Wagin
9am
3pm
Source: Bureau of Meterology
Brookton Highway
Metro Road: Neighbouring Residences
Metro Road
Car Parks
Warrahdale Road
1 km
2 km
Project Area
1km
1.5 km
Watershed Road
McCallum Road
0
1
2
3
4 km
Legend
Area Boundary
Existing Routes
1 km Buffer
1.5 km Buffer
2 km Buffer
Neighbouring Properties
Conservation Park

M etro Road: New Trails Overlay



Legend

Existing Routes

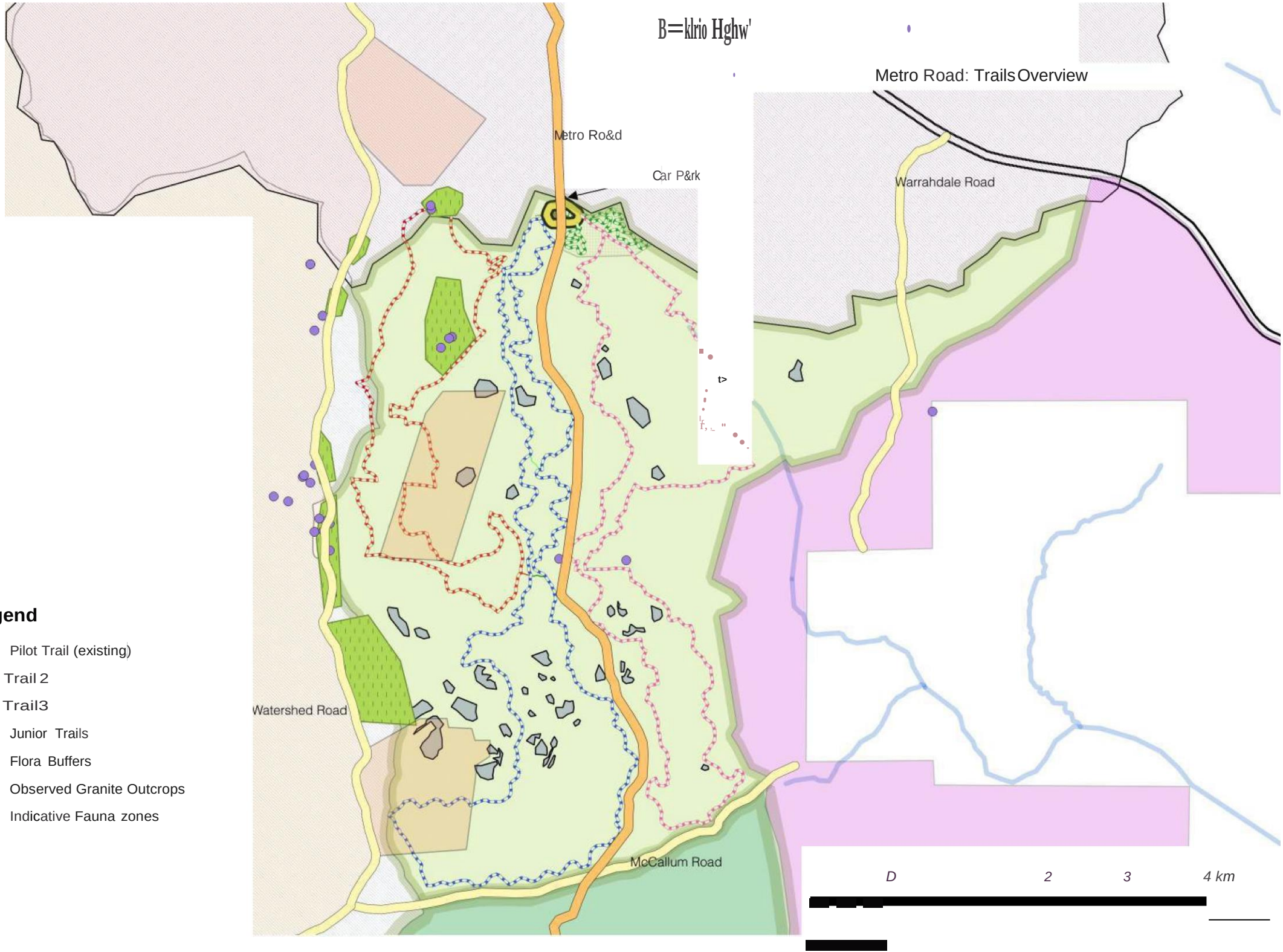
Trail

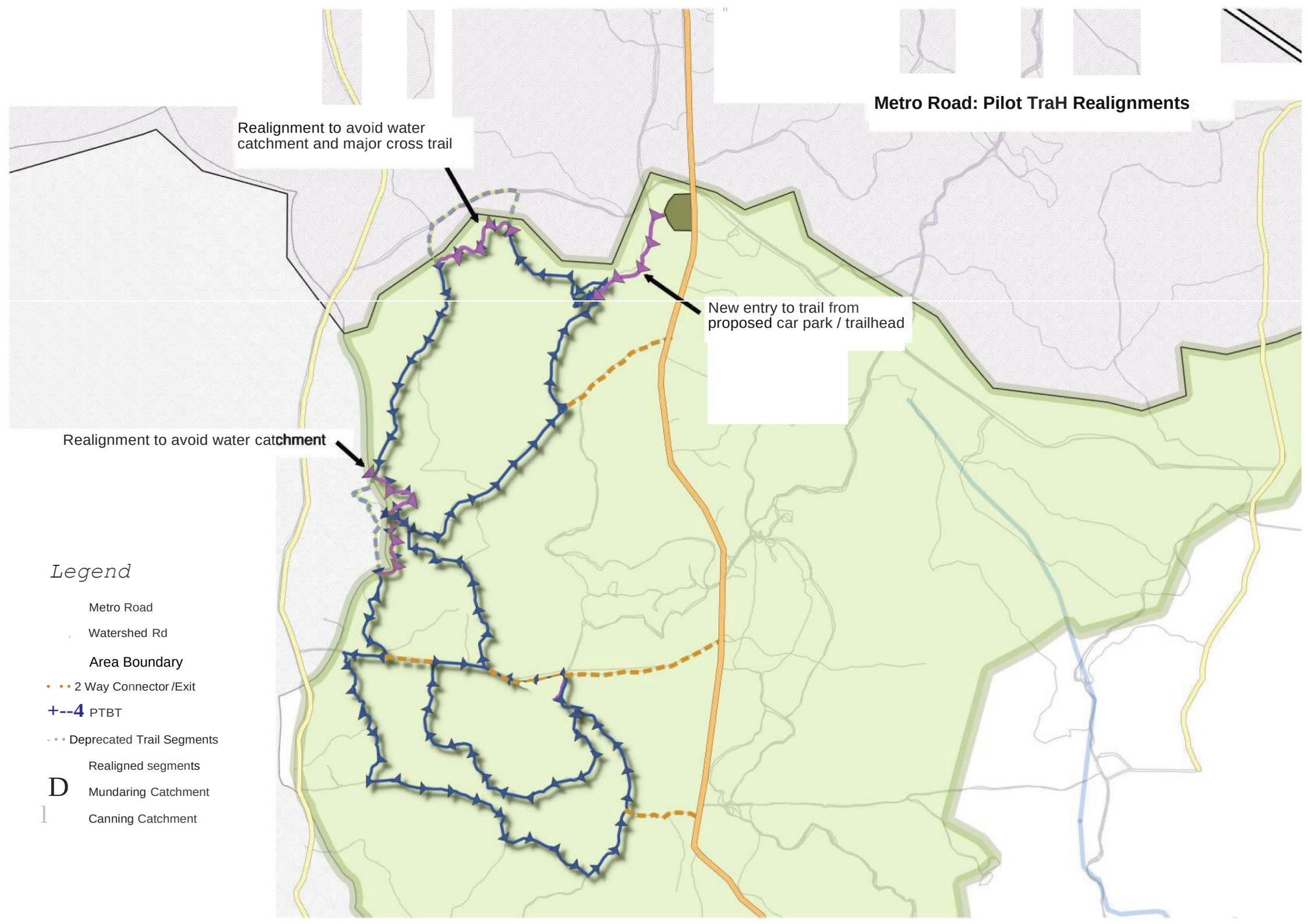
Trail2

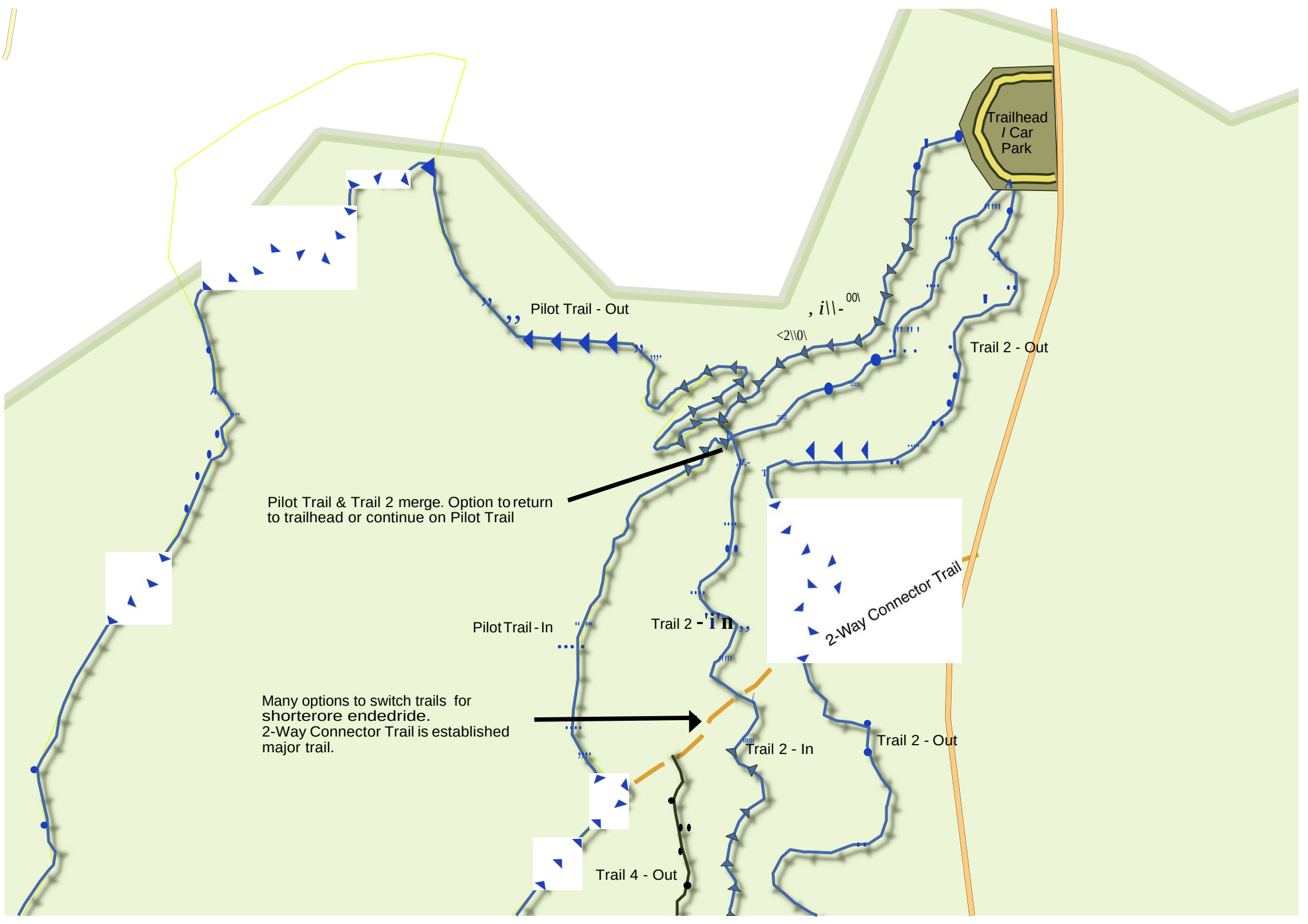
Trail3

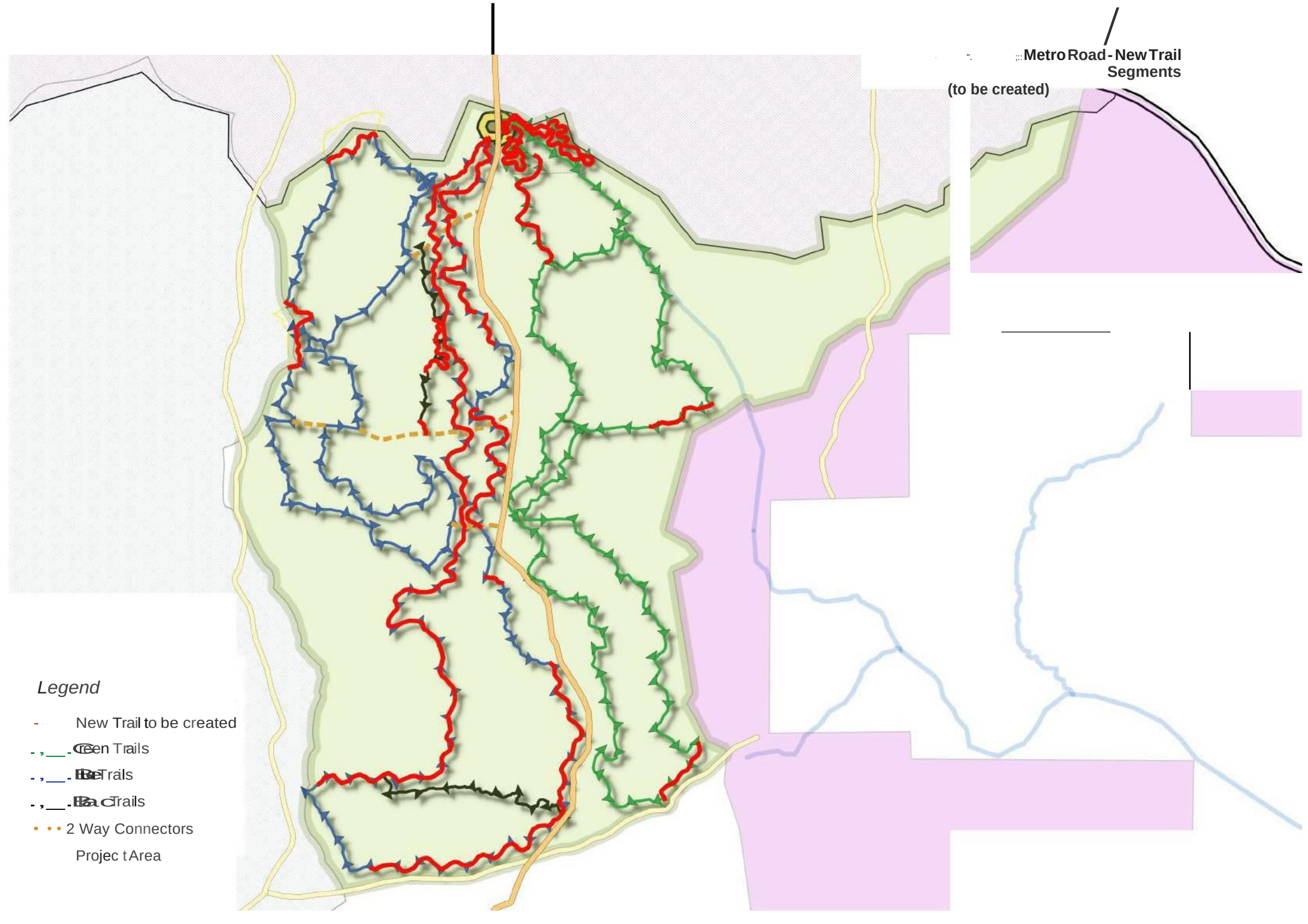
JuniorTralis

0 2 3 4 k m


B=klrio Hghw'
Metro Road: Trails Overview
Metro Ro&d
Car P&rk
Warrahdale Road
Watershed Road
McCallum Road
Legend
Pilot Trail (existing)
occxx> Trail 2
c.cm_ Trail3
Junior Trails
Flora Buffers
D
Observed Granite Outcrops
Indicative Fauna zones
D
2
3
4 km


Metro Road: Pilot TraH Realignments
Realignment to avoid water catchment and major cross trail
New entry to trail from proposed car park / trailhead
Realignment to avoid water catchment
Legend
Metro Road
Watershed Rd
Area Boundary
2 Way Connector /Exit
PTBT
Deprecated Trail Segments
Realigned segments
Mundaring Catchment
Canning Catchment


Trailhead / Car Park
Pilot Trail - Out
Trail 2 - Out
Pilot Trail & Trail 2 merge. Option to return to trailhead or continue on Pilot Trail
2-Way Connector Trail
Pilot Trail - In
Trail 2 - In
Many options to switch trails for shorterore endedride.
2-Way Connector Trail is established major trail.
Trail 2 - Out
Trail 4 - Out


Metro Road - New Trail Segments
(to be created)
Legend
New Trail to be created
Green Trails
Blue Trails
Back Trails
2 Way Connectors
Project Area