

Appendix 9 Recreational Trails and Facilities Management Plan – Huntly



Recreational Trails and Facilities Management Plan





Huntly Mine – Myara region

Alcoa of Australia Limited
17 December 2024

→ **The Power of Commitment**

This management plan reflects current operational practices and will be revised to align with the mitigations and outcomes detailed in the Assessment 2385 Environmental Review Document (which is considered to take precedence).



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Executive summary

This Recreational Trails and Facilities Management Plan (RTFMP) has been prepared in accordance with the Environmental Protection Authority (EPA) Instructions on *how to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans* (EPA 2024)

The following table summarises the context and purpose of the RTFMP in the context of EPA environmental objectives.

Proposal name	Huntly Mine, Myara region
Proponent name	Alcoa of Australia Limited
Ministerial Statement number	Not applicable
Purpose of the RTFMP	<ul style="list-style-type: none"> – To fulfil Alcoa’s commitment under the Western Australian Operations 2023-2027 Mining and Management Program to develop a recreational management plan for the Myara region in consultation with DBCA. – The RTFMP covers existing mined areas and proposed mining areas – Myara region as itemised in the 5-year mine plan (2023-2027). – The RTFMP provides a framework for stakeholder engagement, planning, design, and management to mitigate impacts to recreational trails and facilities.
Key environmental factor	<p>Social surroundings defined under the EP Act can be summarised as:</p> <p><i>‘In the case of humans’ social surroundings refers to aesthetic, cultural, economic and other social surroundings to the extent to which they directly affect or are affected by physical or biological surroundings’</i></p>
Key environmental factor objective	<p>The EPA’s environmental objective for the factor of Social Surroundings is:</p> <p><i>‘To protect social surroundings from significant harm’</i></p>
RTFMP objectives	<ol style="list-style-type: none"> 1. Maintain amenity, scenic values and quality of landscape as experienced by users of Kingsbury Drive. 2. Minimise direct impacts on recreational trails within the Myara region. 3. Minimise noise and dust impacts on users of Munda Biddi Trail and Kingsbury Drive. 4. Maintain viability of existing and planned commercial opportunities. 5. Maintain access and adequacy of day-use areas. 6. Maintenance of access for facility and asset management. 7. Minimise direct and indirect impacts on trails and their users in relation to exploration drilling activities.
Condition clauses	Not applicable
Key components of the RTFMP	<p>Objective-based management actions and targets that align with Government policies and strategies relating to recreational trails and facilities are prioritised to high and medium risk, and adopt a hierarchy to avoid, minimise and rehabilitate amenity impacts.</p> <p>The management actions reflect the potential for amenity impacts during mine construction and operations, and longer-term visual and access impacts that may occur during rehabilitation and post-closure.</p>
Proposed construction date	Not applicable – Construction within the Myara region has been completed.

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Acronyms and abbreviations

Acronym/abbreviation	Expanded
Alcoa	Alcoa of Australia Limited
DBCA	Department of Biodiversity, Conservation and Attractions
DFES	Department of Fire and Emergency Services
DJTSI	Department of Jobs Tourism Science and Industry
DLGSCI	Department of Local Government Sport Cultural Industries
DMP	Dust Management Plan
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority (WA)
ERD	Environmental Review Document
FDRA	Forest Disease Risk Area
FMP	Forest Management Plan
LVIA	Landscape and Visual Management Assessment
MAZ	Mining Avoidance Zone
MMP	Mining and Management Plan
MMPLG	Mining and Management Program Liaison Group
NIA	Noise Impact Assessment
NMP	Noise Management Plan
NSR	Noise Sensitive Receptors
PRTS	Peel Regional Trails Strategy
RPZ	Reservoir Protection Zone
RTFMP	Recreational Trails and Facilities Management Plan
TSP	Total Suspended Particulates
WA	Western Australia

1. Context, scope and rationale

1.1 Overview

Alcoa of Australia Limited (Alcoa) proposes the continuation of mining operations in Huntly Mine, Myara region from 2024-2028. At the conclusion of mining operations, the mine facilities may continue to be used to process the ore from Myara North. This will support the continuity of bauxite supply to the Pinjarra Alumina Refinery and potentially Kwinana Alumina Refinery.

The Myara region is located within the Shire of Serpentine-Jarrahdale and Shire of Murray, on the traditional lands of the Binjareb people, within the Metropolitan and Peel regions, approximately 100km southeast of Perth (see Figure 1).

The Myara region encompasses both existing and proposed mining areas, as outlined in the Myara region's five-year mine plan (2023-2027) (The Proposal), with a staged rehabilitation integrated into the process. Proposed mining areas include vegetation clearing, mining earthworks (e.g. creating mine pits and secondary haul roads), and mining operations (ore extraction). Existing mining areas consist of both ceased mine pits and secondary haul roads, yet to be rehabilitated, along with active mine pits and haul roads.

The 2023-2027 Mining and Management Plan (MMP) includes a commitment by Alcoa to develop a recreational management plan for the Proposal, in partnership with the Department of Biodiversity, Conservation and Attractions (DBCA). The Recreational Trails and Facilities Management Plan (RTFMP) will be reviewed as required to incorporate significant updates and changes in pertinent internal and external factors.

1.1.1 Regional context and setting

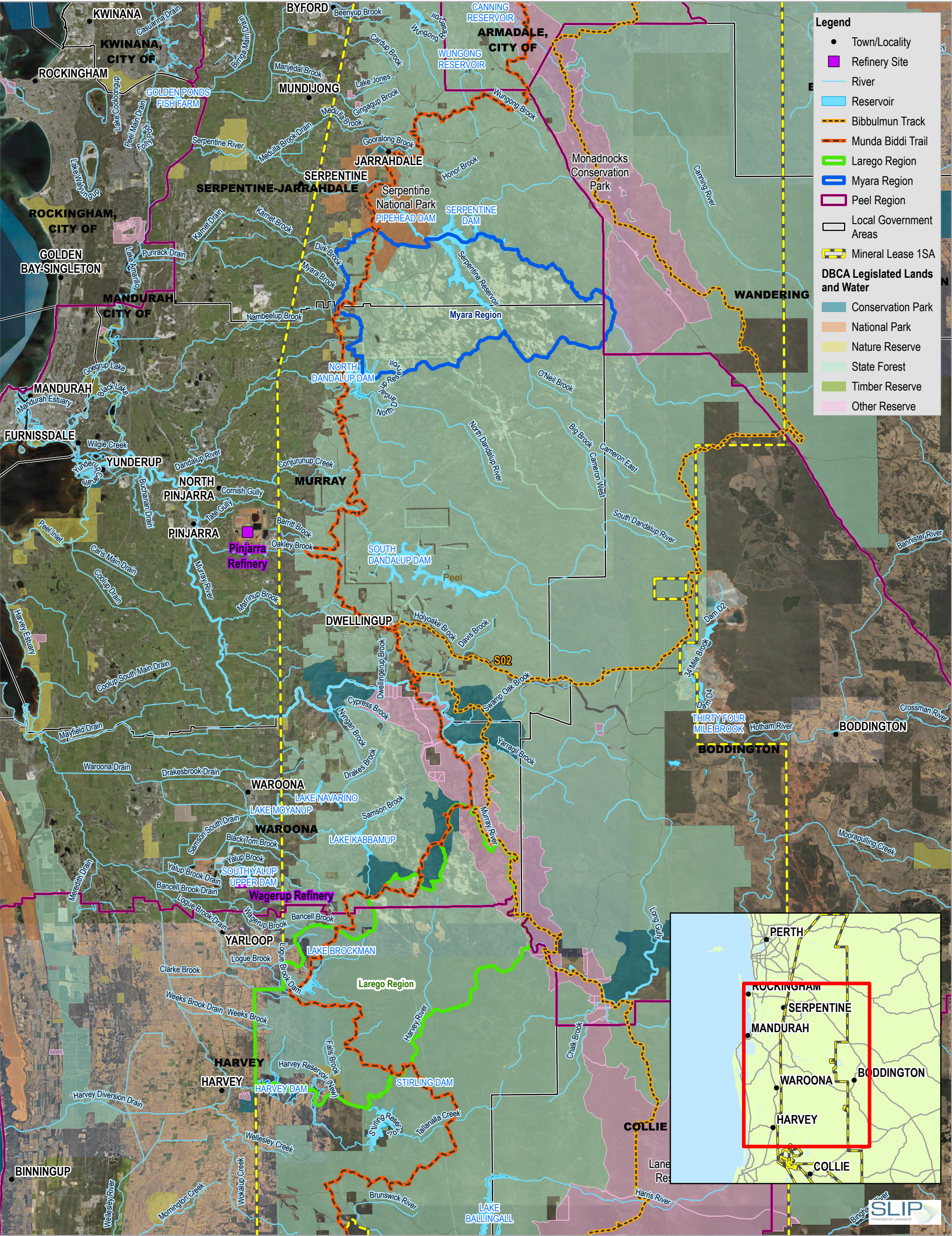
The Myara region is located in Northern Jarrah Forest on the Darling Plateau predominantly within the Shires of Serpentine-Jarrahdale and Murray, with the eastern portion located within the Shire of Wandering (see Figure 1). The Myara region is located approximately 5km south of Jarrahdale townsite and 20 km north-east of Pinjarra townsite.

The mine region is located primarily within Jarrahdale State Forest and Dwellingup State Forest, which are managed under the Forest Management Plan (FMP) for a multitude of use types including conservation, recreation and water supply. Since the FMP 2014-2023 began in January 2014, significant changes in Government policies have influenced southwest forest management. These updates are reflected in the 2024-2033 plan, prepared by DBCA. In September 2021, the State Government introduced new policies for managing the south-west forests, which will be implemented through FMP 2024-2033. The most notable change is the cessation of large-scale commercial timber harvesting in native forests. From 2024 onwards, timber will only be removed from these forests through activities aimed at improving forest health or clearing for approved mining operations and infrastructure.

The Northern Jarrah Forest includes extensive Forest Disease Risk Areas (FDRAs). The FDRAs are proclaimed under the *Conservation and Land Management Act 1984* and comprise areas at high risk of the introduction or spread of *Phytophthora* Dieback. Strict quarantine and access restrictions apply to these areas. The eastern side of the Myara region has an overlap with an FDRA.

The Myara region lies south of Serpentine National Park and incorporates a portion of the National Park in its northwest extent (see Figure 1). West of the mine region lies the Darling Scarp and rural lands, including the hamlets and rural areas of North Dandalup, Keysbrook and Serpentine. The Myara region is bordered to the east by the Monadnocks Conservation Park.

The Munda Biddi Trail runs through the west portions of the Myara region (see Figure 1). The Bibbulmun Track is located approximately 6.5km east of the Myara region boundary, within the Monadnocks Conservation Park.



1.2 Rationale and approach

1.2.1 Environmental management objectives

The environmental management objectives of this RTFMP are presented in Table 1. The objectives are based on the following:

- Site-specific environmental, social and commercial values and potential impacts (see Table 1).
- Study findings, assumptions and uncertainties (See Sections 1.2.2 and 1.2.3)
- Risk assessment and prioritisation (see Section 1.2.4).

Section 2 presents the environmental management components of the RTFMP, which details how monitoring and management will assist in demonstrating compliance with the environmental management objectives.

Table 1 Site-specific values, potential impacts and environmental management objectives

Region-specific environmental, social and commercial values	Value impacts	Environmental management objectives
<ul style="list-style-type: none"> – Recreational trails within and in close proximity to the Myara region as listed in Table 1.3: – Recreational campsites and day-use sites as listed in Table 1.3. – Commercial operations as listed in Table 5. <p>Other values associated with the region include:</p> <ul style="list-style-type: none"> – Regional ecotourism destinations – Bodhinyana Buddhist Monastery – Karnet Prison Farm and associated activities – Water resource values – Cultural heritage values* – Aboriginal heritage values associated with the Serpentine River* – Serpentine Dam commercial opportunities – Historic value of shield/reference trees 	<ul style="list-style-type: none"> – Closure and restricted public access to recreational facilities, commercial opportunities and/or cultural heritage. – Potential direct and indirect impacts to recreational facilities and commercial opportunities within and outside the mine region. – Potential noise, dust and visual amenity impacts to facilities. – Clearing of shield/reference trees. – Potential impacts of exploration drilling on recreational trails. 	<ol style="list-style-type: none"> 1. Maintain amenity, scenic values and quality of landscape as experienced by users of Kingsbury Drive. 2. Maintain amenity, scenic values and quality of landscape of nearby roads and trails. 3. Minimise direct impacts to recreational trails within the Myara region, which includes investigating options to maintain access, where feasible. Where impacted, rehabilitate and reinstate these facilities where practicable, in consultation with DBCA and other key stakeholders. 4. Minimise noise, dust and visual impacts to users of Munda Biddi Trail and Kingsbury Drive. 5. Maintain viability of existing and planned commercial opportunities. 6. Maintain access and adequacy of day-use areas. 7. Maintenance of access for facility and asset management. 8. Minimise direct and indirect impacts on trails and their users in relation to exploration drilling activities.

**Cultural and Aboriginal heritage have not been considered further within the RTFMP.*

1.2.2 Study findings

Table 2 presents the social surrounding studies undertaken for the Proposal which have informed the rationale and approach for this RTFMP.

Table 2 *Relevant studies*

Key environmental factors	Studies	Author
Social surroundings	Identification of recreational trails and facilities	GHD
	Noise impact assessment – Myara region	GHD (2024a)
	Landscape and visual impact assessment – Myara region	GHD (2024b)
	Air quality impact assessment	GHD (2024c)
	Exploration drilling potential impacts	GHD
	Light pollution	GHD

1.2.2.1 Identified recreational trails and facilities

This RTFMP provides a summary of recreational trails and facilities (assets) within the Myara region and a surrounding 2km Study Area (Figure 2).

Recreational assets were identified based on published documents and stakeholder consultation, including the DBCA, Local Government Authorities and non-government organisations. Details of stakeholder engagement regarding recreational assets are presented in Section 3. The RTFMP does not currently consider scientific facilities or monitoring sites located within the Myara region or the 2km Study Area as the locations of these sites have not been confirmed by DBCA due to issues with the register and the age of previous records.

Recreational facilities were classified, where applicable, with definitions (see Table 3) drawn from the WA Strategic Trails Blueprint 2017-2021 (TRC Tourism, 2017) and as proposed in the Peel Regional Trails Strategy (PRTS) (Common Ground Trails, 2019). The classifications are proposed to prioritise investment for the purposes of economic and social development.

Table 3 *Trail classification under WA Strategic Trails Blueprint*

Classification	Definition
Trail Town	A population centre that has been assessed and accredited as a destination for its trails offering through the provision of high-quality trails and related services, businesses, branding and signage; and outdoor experiences that encourage extended visitation.
Trail Centre	A managed multiple trail facility with dedicated visitor services supported by high-quality trails and related services; and outdoor experiences that encourage single-day visitation. May be stand-alone or within a Trail Town.
Trail Network	A multiple trail facility with limited or no visitor services, supported by high-quality trails, branding and signage; and outdoor experiences that encourage single or part-day visitation. May be stand-alone or part of a Trail Town or Trail Centre.
State Trails	An extended trail or trail network that is of sufficient quality and with appropriate, products and services to be recognised beyond the State and to attract visitors to WA.
Regional Trails	A major trail or trail network that services a population centre or large regional community, with facilities and services of a standard and appeal that could attract visitors from outside the region.
Local Trails	A trail that services the local community and provides facilities suited to local use. Some local trails may have the potential for development to regional status.

Figure 2 and Table 4 present an overview of the identified facilities within the Myara region and 2km Study Area, with identified impacts to facilities provided in Appendix A. The facilities include two day-use facilities at Serpentine Dam. No campsites are located within 2km of the Myara region, with the closest campsites being located at Dardanup (Munda Biddi Trail) approximately 3km to the south-west, and at Mount Cooke (Bibbulmun Track) approximately 6 km to the north-east.

In addition, there are informal trails located within and around the Myara region that are not promoted or managed by DBCA. Issues associated with informal trails and informal access include damage to native vegetation and

fauna, damage to Aboriginal cultural heritage, water catchment/water quality risks (e.g., by pathogens) and risks to users of getting lost or injured on poorly aligned or unmaintained trails.

Table 4 *Recreational trails and facilities Identified within the Myara region and 2 km Study Area*

Asset type	Name	Use/Value	ID
State trails	Munda Biddi Trail	Mountain bike trail	S01
Regional trails	Jarrahland Wildflower Scenic Drive	Drive trail (2wd)	R01
Local trails*	Serpentine Dam Walk	Bushwalking trail	L01
	Gobby Road via Serpentine Track	Bushwalking trail	L02
	Kingsbury Drive Cycling	Road cycling trail	L03
	North Dandalup Dam via Jarrahdale Railway Trail	Bushwalking trail	L04
	Mount Solus Walk (closed)	Bushwalking trail	L05
	Thorpe Road Loop (closed)	Bushwalking trail	L06
Recreational sites	Serpentine Dam picnic area, accessible toilets and playground	Recreation	DU1
	Bistro by the Dam (Serpentine Dam)	Recreation	DU2
Informal facilities ¹	The Myara region has been identified as being used informally for hiking, camping and day use. Some of these use types and facilities may hold local significance.		
Shield/reference trees	169 within the Myara region	Historic value	

* Local trails (formal or informal) are not official DBCA trails and therefore are not managed by DBCA. Commercial operations, opportunities and other use types

Commercial operators and opportunities were identified based on published information as indicated in Table 5.

Table 5 *Commercial operators and opportunities identified within the Myara region and 2 km Study Area*

Asset type	Description
Apiary sites	16 current apiary site licences are located within the Myara region
Serpentine Dam commercial opportunities	Bistro by the Dam
Seed collecting	Commercial seed collection opportunities exist except in Serpentine and Monadnocks National Parks.
Wildflower harvesting	Commercial wildflower picking opportunities exist except in Serpentine and Monadnocks National Parks.

¹ Informal trails are defined, through consultation with DBCA, as those not promoted or managed by DBCA.

1.2.2.1.1 Relevant state and regional recreational strategies and plans

Table 6 presents state and regional strategies and plans that relate to recreational trails and facilities within the Myara region and the 2 km Study Area. The strategies and plans identify the state significance of Munda Biddi Trail and Bibbulmun Track in addition to a number of regional and locally significant trails.

Table 6 Strategies and plans relevant to recreational trails and facilities within the Myara region and 2 km Study Area

Document	Author	Sponsor	Statements and provisions relating to recreational facilities within the Myara region and surrounding 2km and State significant trails
WA Strategic Trails Blueprint 2022 – 2027	Common Ground Trails 2023	Department of Local Government, Sport and Cultural Industries (DLGSCI) and DBCA	Existing trails that already have a strong awareness in the market are ... the Munda Biddi Trail. Achieving an excellent suite of iconic trails for Western Australia will require considerable investment in planning and development over time. Since 2017 Dwellingup has built on the natural assets of the town, as well as the connection to iconic trails Munda Biddi and Bibbulmun Track. To become a place 'where the trails meet'.
Western Australian Mountain Bike Strategy 2022 – 2032	WestCycle Incorporated Purpose Drive Performance	DLGSCI and DBCA	The document identifies the Munda Biddi Trail as one of the world's top cycling trails, offering significant opportunities to boost participation, economic growth, and tourism. Enhancing the Munda Biddi and other potential long-distance off-road cycling experiences is crucial. Moreover, Strategy highlights the challenge in the rapid growth of off-road cycling for transport and recreation, noting that off-road transport routes, rail trails, and long-distance touring trails like the Munda Biddi present opportunities to encourage more people to ride off-road.
Two-Year Action Plan for Nature-Based Tourism in Western Australia 2019 and 2020	DBCA	DBCA	Continue to promote, maintain and improve the ...Munda Biddi ... and encourage new industry investment in accommodation and visitation products.
WA Hiking Strategy Bushwalking and Trail Running in Western Australia 2020 – 2030	Common Ground Trails 2019	DBCA and DLGSCI	No facilities within, or surrounding, the Myara region were identified.
Taking the Reins - The Western Australian Recreational Horse Trail Strategy	PX2 Pty Ltd 2015	Australian Trail Horse Riders Association	No facilities within or surrounding the Myara region were identified.
PRTS incorporating: Shire of Serpentine Jarrahdale Local Trail Plan	Common Ground Trails 2019	Peel Region Local Government Authorities	Identifies Jarrahdale and Dwellingup as potential/future Trail Towns, indicating the importance of recreational facilities in proximity to the towns (Dwellingup was officially rewarded with Trails Town status in April 2024). Identifies recreational facilities within the Myara region that are significant and/or development priorities for: <ul style="list-style-type: none"> – Munda Biddi Trail: state trail, very high priority – Jarrahdale Wildflower Scenic Drive: regional trail, very high priority – Kingsbury Drive Cycling: local trail, medium priority
Perth and Peel Mountain Bike Master Plan	Common Ground	WestCycle	Identifies Munda Biddi Trail as supporting existing mountain bike demand in Jarrahdale with the potential to develop the town to regional significance.
Economic Development Strategy 2018 – 2023	Lucid Economics 2018	Shire of Serpentine Jarrahdale	Identifies economic development opportunities and investment strategies as including: <ul style="list-style-type: none"> – Tourism - Jarrahdale – Visitor Centre – Major accommodation facility – Glamping – Adventure tourism
Economic Tourism Strategy 2018 – 2023	Brighthouse 2018	Shire of Serpentine Jarrahdale	Identifies Jarrahdale as 'the centrepiece of this Tourism Strategy', including the strategy to foster the development of Jarrahdale as a Trail Town. Identifies recreational facilities within the study area: <ul style="list-style-type: none"> – Munda Biddi Trail
Jarrahdale Trail Town Business Case and Implementation Plan (October 2021)	Tredwell Management Services	Shire of Serpentine Jarrahdale	Aspirational plan to provide strategic guidance to the Shire of Serpentine Jarrahdale to support Jarrahdale to become a fully accredited Trail Town. Identifies recreational facilities within the mine region that start/finish at Jarrahdale: <ul style="list-style-type: none"> – Munda Biddi Trail: state hierarchy, poor quality Existing trails within the Shire of Serpentine Jarrahdale that start/finish in close proximity to Jarrahdale: <ul style="list-style-type: none"> – Bibbulmun Track: state hierarchy

1.2.2.1.2 Public drinking water source areas

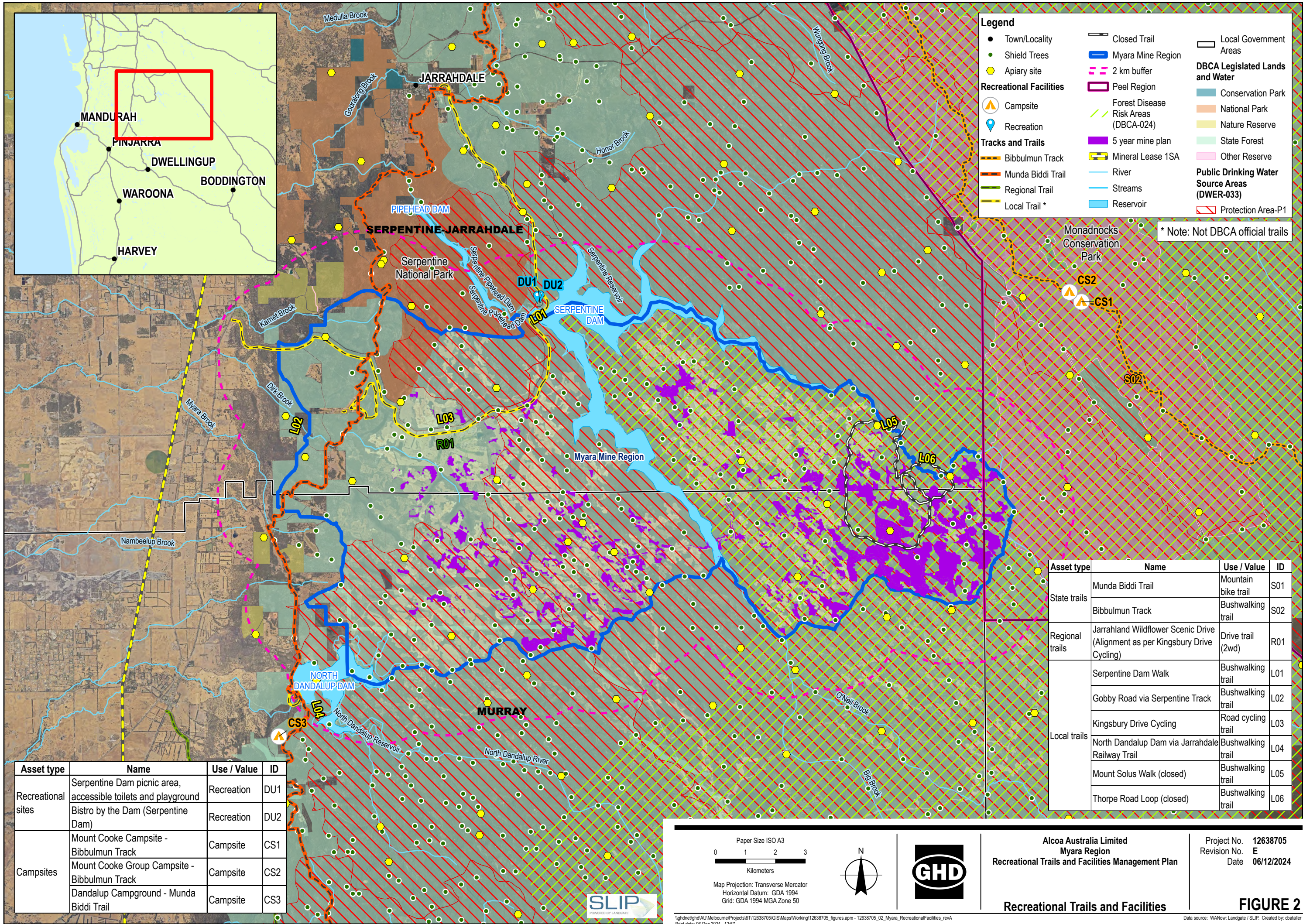
The Myara region lies predominantly within the Serpentine River catchment and lies adjacent to the Serpentine River, Serpentine Dam and Pipehead Dam Reservoirs. The Serpentine River, originates to the east of the Myara North region, flowing north-west along the southern boundary towards the Serpentine Dam. Drainage floors occur in areas of alluvial deposits along the Serpentine River and tributaries and form ephemeral waterlogged damp lands during the winter and spring (GHD, 2022). Water resources provide recreational and commercial opportunities and aesthetic values. Table 7 outlines the acceptability of various recreational activities within PDWSAs according to *Operational Policy 13: Recreation within Public Drinking Water Source Areas on Crown Land* (Department of Water, 2019).

Table 7 Compatibility of recreation activities

Recreation type	Public drinking water source area location	
	Surface water – Reservoir protection zone	Surface water – Outer catchment
Vehicular activities		
Caravanning at approved designated sites	Incompatible	Supported at designated sites
Caravanning (off-road)	Incompatible	Incompatible
Coach tours/scenic driving	Incompatible (except on public roads ²)	Supported
Off-road driving All motorised vehicles (including 4WD vehicles, motorbikes, trail bikes and quad bikes) whether licensed or unlicensed.	Incompatible	Incompatible (except at legally designated sites)
Rallying	Incompatible	Incompatible
Paragliding/gliding - motorised or non-motorised	Incompatible	Incompatible
Land-based activities		
Abseiling/rock climbing	Incompatible	Supported
Barbequing	Incompatible	Supported at designated sites
Bike riding/power-assisted pedal cycling on public roads	Supported	Supported
Bike riding/power-assisted pedal cycling within approved designated sites - trails, tracks or areas	Incompatible (except on the Munda Biddi Trail)	Supported in designated sites
Bike riding/power-assisted pedal cycling (free range/off-trail)	Incompatible	Incompatible
Bush skills/navigational exercises	Incompatible	Supported
Bushwalking/trekking/hiking/trail running at approved designated sites - trails, tracks or areas	Incompatible (except on the Bibbulmun Track or Munda Biddi Trail)	Supported
Bushwalking/trekking/hiking (free range/off-trail)	Incompatible	Supported
Camping at approved designated sites	Incompatible	Supported at designated sites
Camping (free-range)	Incompatible	Incompatible
Drone flying (electric)	Incompatible (except on public roads ¹)	Supported
Orienteering/rogaining/geo-caching/cross-country running.	Incompatible	Supported*
Photography/painting/sightseeing/birdwatching/astronomy	Incompatible (except on public roads ¹)	Supported
Picnicking	Incompatible	Supported
Prospecting	Incompatible	Supported
Riding/walking/training of animals (including dogs and horses)	Incompatible	Incompatible
Riding/walking/training of animals on public roads ¹ and on approved designated sites - trails, tracks or areas (including dogs and horses)	Supported on public roads ¹ and at designated sites	Supported on public roads ¹ and at designated sites
Hunting/shooting	Incompatible	Incompatible
Water based activities		
Boating (motorised)/jet skiing/water skiing/power boating (fuel and low-powered electric)	Incompatible	Incompatible
Boating (non-motorised) Canoeing/kayaks/buoyancy devices/rowing/sailing/model boating/ windsurfing/kite surfing	Incompatible	Incompatible
Fishing	Incompatible	Incompatible ³
Introduction of fish/aquatic species	Incompatible	Incompatible
Marroning	Incompatible	Incompatible
Swimming/wading/bathing/scuba diving/snorkelling (all activities that involve direct human contact with water)	Incompatible	Incompatible

² ‘Public roads’ does not include tracks or trails for the purposes of fire control, mining, forestry or infrastructure access/maintenance.

³ Fishing was an existing, approved activity as at September 2012 at Big Brook Dam in the Lefroy Brook Catchment Area.



1.2.2.2 Noise impact assessment

GHD (2024a) undertook a Noise Impact Assessment (NIA) of the Proposal. The NIA included modelling of noise emissions from operations to ascertain the risk of exceedance of assigned levels under the Environmental Protection (Noise) Regulations 1997 (the Regulations) at the identified Noise Sensitive Receptors (NSR) located in and around the Proposal. The assessment also included an assessment of blasting activities to determine potential airblast and groundborne noise and vibration impacts at the NSRs.

The NIA indicates that mining operations at the Myara region may not comply with the criteria during the daytime (i.e. exceeding 40dB(A) level during Sundays and public holidays) at some noise-sensitive receptor locations over the north-west portion of the mine region along Kingsbury Drive and Karnet Prison Farm. Considering the 40dB(A) noise contour provided in the NIA report, GHD (2024a), it is expected that mine noise may impact users of the following recreational trails under worst-case mining operations and meteorological conditions:

- Munda Biddi Trail (S01) – mountain bike cyclists
- Jarrahland Wildflower Scenic Drive (R01) – road vehicle drivers, particularly if windows are down or exiting the vehicle to observe wildflowers
- Kingsbury Drive Cycling (L03) – road cyclists
- Gobby Road via Serpentine Track (L02) – bushwalkers

Accordingly, mine operations will require management during worst-case meteorological conditions and particularly during periods of peak public usage of the above trails (e.g. events, weekends and school holidays) to minimise noise impacts on recreational values.

Audible daytime noise was not predicted to occur in the day-use areas at Serpentine Dam. Audible daytime and night-time noise was not predicted to occur at the Bibbulmun Track located east of the Myara region (GHD 2024a).

Blasting would occur on an approximately daily basis during mining operations, generating airblast noise and vibration. The NIA (GHD, 2024) indicates that groundborne noise and vibration (resultant from blasting) may be significant within 1.2km of mine pits during mine development, which may affect sections of Kingsbury Drive (R01 and L03) in proximity to the Proposal. Blasting will require management when occurring in proximity to Kingsbury Drive, particularly during periods of peak public usage, to prevent blast overpressure impacts on recreational values.

1.2.2.3 Landscape and visual impact assessment

GHD (2024b) undertook a Landscape and Visual Impact Assessment (LVIA) for the Proposal. The assessment indicated that the Proposal is likely to be visible from elevated viewpoints within the Monadnocks Conservation Park east of the Myara region (e.g. Mount Cooke and Mount Vincent), which form part of the Bibbulmun Track and is likely to cause a high–moderate visual impact for visitors to these scenic locations. The high-moderate visual impact is resultant of high sensitivity to change (visitors place a high value on the existing landscape) and moderate magnitude (discernible changes in the existing view).

The LVIA report recommended a 200m buffer along Kingsbury Drive for visual screening to mitigate foreground visual impacts. However, in areas where mid-ground vegetation has been removed, there is a risk that visual impacts may become visible. Notably, the proposed mining activities are likely to be visible from the scenic Kingsbury Drive, located along Karnet Prison Farm.

In addition to the scenic Kingsbury Drive, the LVIA indicates that the Proposal is anticipated to have a high-moderate visual impact on the recreational facilities at North Dandalup Dam and Serpentine Dam Picnic Area. The high-moderate visual impact is a result of high sensitivity to change and moderate magnitude.

The LVIA report indicates that within the Myara region, the Proposal is unlikely to be visible from other recreational facilities and trails that would remain accessible to the public, including Munda Biddi Trail. The lack of visibility at these other locations is expected due to the visual screening from topography and/or forest vegetation. The modelled zone of theoretical visibility within the LVIA report indicates that if the screening forest vegetation were to be substantially reduced (e.g. large-scale clearing or bushfire) there is potential for mining activities to become visible from the following trails that would remain accessible throughout the life of mine.

- Bibbulmun Track
- Jarrahland Scenic Drive
- Kingsbury Drive Cycling

- North Dandalup Dam via Jarrahdale Railway Trail

Visual screening studies conducted within the Myara region for the Pinjarra Alumina Refinery Revised Proposal ERD, indicate that a vegetative buffer of approximately 200m provides effective screening (GHD, 2021).

Mining operations within the Myara region (Huntly Mine) and Larego region (Willowdale Mine) occur concurrently throughout the duration of the 5-year mine plan. As such an understanding of cumulative visual impacts to Munda Biddi Trail and Bibbulmun Track is relevant. Based on the LVIA assessments for both mine regions findings suggest that no cumulative impacts are anticipated.

1.2.2.4 Air quality impact assessment

GHD (2024c) undertook an air quality assessment for the Proposal, including an assessment of concentrations of total suspended particulates (TSP) and dust deposition that could affect the amenity of users of recreational trails and facilities. The assessment (GHD, 2024) indicates that incremental concentrations of TSP from the mining operations were below relevant criteria for identified sensitive receptors, however, there may be exceedances of cumulative concentrations of 24-hour average TSP if the background concentrations are elevated, and potentially exceedance of dust deposition criteria at some receptors in the vicinity of Kingsbury Drive. Elevated background concentrations in the local area surrounding the Myara region could generally be attributed to agricultural activities, domestic fuel burning, dust storms, prescribed burns, bushfires, motor vehicle emissions and existing mining operations.

The air quality assessment indicates that elevated dust levels may occur for short periods of time during worst-case meteorological conditions over Kingsbury Drive and the Munda Biddi Trail. The assessment is considered conservative, excluding the effects of rainfall and including cumulative effects of ambient dust levels recorded at the Alcoa Yamba Drive ambient monitoring station. Monitoring data from Yamba Drive was reviewed to remove anomalous events that may be attributable to Alcoa operations and events associated with prescribed burns and recorded bushfires. However, not all high dust concentrations can be removed as the source of emissions could not be verified. Hence the background concentrations would still reflect dust emissions from existing mining at the Myara region and likely lead to a conservative estimate of cumulative dust emissions from the Proposal.

1.2.2.5 Exploration drilling potential impacts

Required for strategic long-term mine planning up to 20 years prior to mining, exploration drilling activities occur throughout the entirety of the mining lease. Using tractor-mounted drill rigs, modified to operate in forested areas, a fleet of 10 – 19 rigs (Alcoa and contract) undertake drilling activities between May – September (annually), 7 days a week, 11 hours a day (6am – 5pm). There is also a small shutdown period of approximately 10 days over Christmas through to the start of January.

Each year approximately 105,000 drill holes are undertaken across the mining lease with approximately 25 holes drilled each day in three phases, being:

- Phase 1: 60m x 60m apart
- Phase 2: 30m x 30m apart
- Phase 3: 15m x 15m apart

Phase 3 usually occurs within the gated mine area, however, DBCA has raised concerns regarding exploration activities outside gated areas.

The following non-negotiable exploration drilling constraints are in place in relation to trails and recreational facilities:

- 200m buffer to the Bibbulmun Track
- 50m buffer to the Munda Biddi Trail

Negotiable constraints relate to all other sanctioned trails whereby drilling within 300m of trails will only occur Monday – Friday outside of school holidays. Exploration activities will occur within these trails if required.

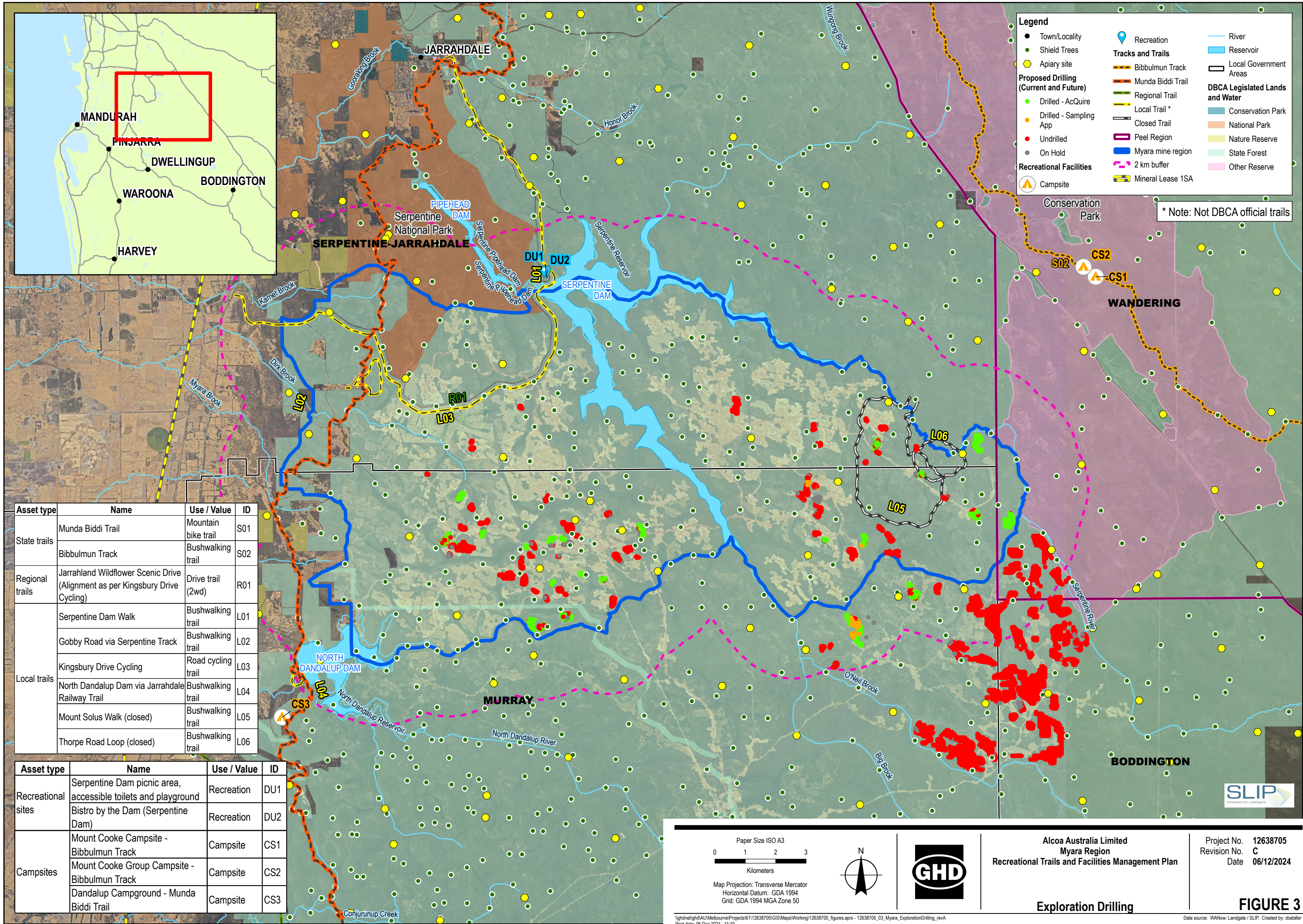
Figure 3 presents the proposed exploration drilling program for Huntly Mine between 2023-2027, which covers the Myara region and the O'Neil Mine Region to the southeast of Myara. As presented, drilling activities over 2023-2027 do not lie over any identified recreational trails and facilities within the Myara region and 2km Study Area, apart from Thorpe Road Loop and Mount Solus Walk both of which have been previously closed for the life of the mine.

1.2.2.6 Light pollution

Prevailing light sources within Myara region is dominated by the existing mine facilities situated along the existing conveyor line and the mine pits in operation. The townsite of Jarrahdale emits comparatively limited light. Other recognisable light sources within or adjacent to Myara region include Karnet Prison and North Dandalup.

The main light sources associated with mining activities identified in the 5-year MMP, within Myara region, will comprise permanent lighting at mine facilities and conveyor transfer stations, vehicle headlights and mobile LED light towers at operating mine pits. Due to the distance from Jarrahdale, rural properties and overnight campsites it is unlikely that lighting associated with mining activities identified in the 5-year MMP will have a significant impact on night-time amenity.

Implementation of MAZ for the Myara region is expected to avoid impacts to night-time amenity at the identified rural properties along Kingsbury Drive.



1.2.3 Key assumptions and uncertainties

1.2.3.1 Regional planning and stakeholder consultation

The recreational facilities within the Myara region have been identified and classified in accordance with published State and regional planning documents as summarised in Table 6. The recreational and scientific assets have also been identified and assessed in accordance with stakeholder consultation as summarised in Section 3.

It is assumed that the identified and classified facilities are correct and current as per the published documents and consultation. There remains the potential for changes to occur in the identified facilities (e.g., new facilities developed) or changes to their significance at some point over the period of mining and rehabilitation and as a result of stakeholder consultation.

1.2.4 Risk-based approach to management

This objective-based RTFMP adopts a risk-based approach to identify and prioritise targets and actions. Appendix B presents a risk assessment of the potential impacts on recreational facilities and commercial opportunities identified within the Myara region and associated Study Area:

- Table B-1 Closure and direct disturbance
- Table B-2 Indirect impacts noise
- Table B-3 Indirect impacts on visual
- Table B-4 Indirect impacts on air quality
- Table B-5 Exploration drilling impacts

Consideration of potential impacts and the implementation of management measures have been determined within related studies identified in Table 8.

Tables B-2 to B-5 present residual risks incorporating proposed access restrictions/closure of facilities during the life of mine as proposed in Table B-1. The risk assessment considered consequences based on the significance class of recreational trails, magnitude and duration of impact, and likelihood.

As presented in Appendix B, the risk assessment indicated the following very high and high risks, to which mitigations/actions need to be applied (Table 8).

Table 8 *Potential risks to the facilities during life of mine*

Very high risk
– Visual impact to Jarrahland Scenic Drive and Kingsbury Drive Cycling as a result of five-year mine plan activities
– Continued closure of Mount Solus Walk and Thorpe Road Loop
High risks
– Potential visual impacts to the state-significant trail (Bibbulmun Track) due to elevated views on the Monadnocks
– Potential visual impacts to trails (Kingsbury Drive Cycling, Jarrahland Wildflower Scenic Drive, North Dandalup Dam via Jarrahdale railway trail) due to proximity to mining operations.
– Potential noise and dust impact to trails (Munda Biddi Trail, Kingsbury Drive Cycling, Jarrahland Wildflower Scenic Drive) during worst-case conditions/operations.
– Potential noise, dust and visual impacts to commercial operators due to proximity to mining operations
– Potential noise, dust and visual impacts to shield trees due to proximity to mining operations

A further identified risk is the limited stakeholder consultation at the time of preparing this draft RTFMP. This risk is addressed through the proposed stakeholder consultation in Section 3.

The management approach in this RTFMP is consultative and conservative, with the view of managing impacts during all phases of mining. The RTFMP adopts an environmental management hierarchy in the prioritisation of management provisions:

- Avoidance: measures taken to avoid impact
- Minimisation: measures taken to reduce the duration, intensity and/or extent of impact
- Rehabilitation: measures taken to restore previously existing conditions.

1.2.5 Rationale for choice of provisions

Changes in intensity, duration, magnitude and geographic footprint of the impact

The management provisions have been developed to address how impacts to recreational facilities and commercial opportunities may vary in intensity, duration, magnitude and geographic footprint, including:

- variation in direct and indirect impacts as mining progresses within the Myara region
- variation in meteorological conditions affecting noise propagation or dust dispersion during mining.
- progression and restoration of visual impacts over mining and rehabilitation timeframes.

Environmental changes and rate of change

Management measures have been developed to address the potential for external threatening processes to affect visual screening by vegetation surrounding the region.

The RTFMP will be reviewed by Alcoa and with DBCA in the event of material changes to environmental conditions or social surroundings that may influence the Proposal's impacts on recreational facilities or commercial opportunities.

External Issues

The provisions have considered third-party proposals for new trails, recreation and tourism. The RTFMP will be reviewed in the event of material changes to external issues.

2. Environmental management components

Table 9 presents objective-based management provisions relating to those recreational facilities and commercial opportunities within the Myara region with the potential for very high and high risks.

Table 10 listed trigger and threshold criteria related to the environmental impacts management plan.

Table 9 *Recreational facilities and commercial opportunities within the Myara region – Management components*

Management target	Management actions	Monitoring	Timing/frequency of actions	Reporting
Objective 1: Maintain amenity, scenic values and quality of landscape as experienced by users of Kingsbury Drive				
<ul style="list-style-type: none"> Maintain amenity on Kingsbury Drive inclusive of Jarrahland Wildflower Scenic Drive and Kingsbury Drive Cycling. 	<ul style="list-style-type: none"> Increase and maintain Kingsbury Drive MAZ with a buffer of 200m throughout the length of Kingsbury Drive to enable screening of mining activity from the roadway. MAZ is to be clearly marked on construction and mining maps to guide mine development personnel. Implement hillslope MAZ within the hillslope south of Karnet Prison Farm and prioritise the rehabilitation of visible previously mined areas. 	Annual spatial database review of MAZ.	<ul style="list-style-type: none"> MAZ was established and demarcated prior to the commencement of the proposed mine development. Revise a 5-year mine plan to facilitate roadway and hillslope MAZ. Prioritise rehabilitation of previously mined areas visible within the hillslopes south of Karnet Prison. 	Compliance assessment report will include a review of the MAZ.
Objective 2: Minimise noise and dust impacts on users of Munda Biddi Trail and Kingsbury Drive.				
<ul style="list-style-type: none"> Minimise audible noise, blast overpressure and dust levels on Munda Biddi Trail and Kingsbury Drive 	<ul style="list-style-type: none"> Implement MAZ including daytime noise sensitivity zones around the Munda Biddi Trail and Kingsbury Drive. Identify periods of peak usage of Munda Biddi Trail and Kingsbury Drive, in consultation with DBCA and the Shire of Serpentine-Jarrahdale. Undertake long-term and short-term planning using noise modelling of planned mine operations over historic and forecast weather conditions to predict audible noise over periods of peak usage. Undertake modelling based on weather forecasts to predict blast overpressure during periods of peak usage. Postpone blasting if blast overpressure is predicted to exceed standard or use alternative charges to reduce overpressure to standard. 	Annual spatial database review of MAZ.	<ul style="list-style-type: none"> MAZ was established and demarcated prior to the construction of the proposed mine development. Pre-mining noise planning During mining noise planning Daily – blast modelling 	Compliance assessment report will include a review of the MAZ.
Objective 3: Minimise direct impacts to recreational trails within the Myara region, which includes investigating options to maintain access, where feasible. Where impacted, rehabilitate and reinstate these facilities where practicable, in consultation with DBCA and other key stakeholders.				
<ul style="list-style-type: none"> Public access is maintained for the life of the mine to Munda Biddi Trail, Bibbulmun Track, Serpentine Dam Walk, Kingsbury Drive Cycling, North Dandalup Dam via Jarrahdale Railway Trail, Jarrahland Wildflower Scenic Drive, Sullivan Rock to Mount Cooke Trail, Sullivan Rock to Mount Vincent Summit Trail, Serpentine Dam Walk, Gobby Road via Serpentine Track and Mount Cooke Loop. 	<ul style="list-style-type: none"> Establish and maintain MAZ to allow uninterrupted access to these trails. 	Annual spatial database review of MAZ.	<ul style="list-style-type: none"> The gated mine and MAZ were established and demarcated prior to the construction of the proposed mine development. 	Compliance assessment report will include a review of the MAZ.
<ul style="list-style-type: none"> Where practicable, rehabilitate and reinstate access to: <ul style="list-style-type: none"> Mount Solus Walk Thorpe Road Loop 	<ul style="list-style-type: none"> Maintain closure or partial closure for the life of mine. Rehabilitate trails to be re-instated as early as practicable with consideration to rehabilitation priorities given other environmental and social values and constraints. Rehabilitation to recreate the pre-mining trail condition and facilities, in consultation with DBCA and other key stakeholders, where practicable 	To be determined in consultation with DBCA.	<ul style="list-style-type: none"> Agreement reached with DBCA prior to rehabilitation processes on what trails should be rehabilitated and access reinstated. Any required rehabilitation is conducted as early as practicable or at the end of mine region life. 	To be determined in consultation with DBCA.
Objective 4: Maintain the viability of existing and planned commercial opportunities				
<ul style="list-style-type: none"> Maintain viability of existing and planned commercial opportunities as identified in Table 5. 	<ul style="list-style-type: none"> Alcoa to consult with DBCA when reviewing mine planning to ensure commercial operators are advised of changes to access to minimise disruption to commercial activity. 	Annual spatial database review of negotiable constraints.	<ul style="list-style-type: none"> Concept planning, site surveys and detailed design 	Pre-mine development site inspection
Objective 5: Maintain access and adequacy of day-use areas				
<ul style="list-style-type: none"> Maintain access and adequacy of existing DBCA day-use areas, including: <ul style="list-style-type: none"> Serpentine Dam and recreational facilities Bistro by the Dam 	<ul style="list-style-type: none"> Establish and maintain MAZ MAZ will be demarcated in construction and mining maps to guide mine development and construction personnel. If mining is predicted to be visible from visually sensitive sites, then prepare and implement a VMP in consultation with DBCA. 	Pre-construction and pre-mine development inspection of facility condition	<ul style="list-style-type: none"> MAZ was established and demarcated prior to the commencement of adjacent mine development. 	Compliance assessment report will include a review of the MAZ.
<ul style="list-style-type: none"> Enable existing informal day-use opportunities to occur in and adjacent to the mine area. 	<ul style="list-style-type: none"> Demarcate areas for mining and construction 	Annual spatial database review of MAZ.		Compliance assessment report will include a review of the MAZ.

Management target	Management actions	Monitoring	Timing/frequency of actions	Reporting
Objective 6: Maintenance of access for facility and asset management				
<ul style="list-style-type: none"> – Ensure DBCA and DFES have suitable access to the mine region to allow for: <ul style="list-style-type: none"> • Appropriate fire management, including upkeep of fire breaks and allowance of strategic access. • On-going ability to maintain the Western Shield Baiting Program within the mine region • DBCA nominated public firewood areas • Avoidance of Disease Risk Areas for relocated facilities – Have an agreed Forest Access Plan for general vehicle access 	<ul style="list-style-type: none"> – Prepare and maintain a site access plan to allow for regulated movement of DBCA/DFES officials – Minimise direct impacts to access tracks as far as practicable. – Recreate the pre-mining site conditions and facilities, in consultation with DBCA and other key stakeholders, where practicable. 	To be determined in consultation with DBCA.	<ul style="list-style-type: none"> – Prior to clearing, DBCA/DFES to provide an indication of essential service roads. – Any required rehabilitation is conducted as early as practicable or at the end of mine region life. – Any required access was reinstated at the closure of the mine region. 	Pre-construction/min e development site inspection
Objective 7: Maintain water quality in response to new or changed recreational facility use				
<ul style="list-style-type: none"> – Ensure the following water quality objectives are maintained: <ul style="list-style-type: none"> • Public drinking water in the constituted public drinking water source areas of Serpentine Dam Catchment Area. • Recreational water quality in Serpentine Dam Catchment Area. • Waterways and wetlands at pre-development levels (winter concentrations) or improved. 	<ul style="list-style-type: none"> – Ensure any new or changed recreation facilities or events are consistent with Operational Policy 13 or noted by the Minister for Water. – Ensure access is not increased to the Serpentine Dam reservoir protection zone, where public access is prohibited under the Metropolitan Water Supply, Sewerage and Drainage By-laws 1981, except on public roads. 	Surface water monitoring as per the Water Resources Management Plan in conjunction with relevant standards and guidelines.	<ul style="list-style-type: none"> – MAZ was established and demarcated prior to the construction of the adjacent mine development. 	As per the Water Resources Management Plan.
Objective 8: Minimise direct and indirect impacts on trails and the users in relation to exploration drilling activities				
<ul style="list-style-type: none"> – Limit the disruption to the trails as a result of exploration drilling, with appropriate management and mitigation measures applied 	<ul style="list-style-type: none"> – Establish and maintain a minimum 50 m MAZ between exploration drilling activities and Mundi Biddi Trail to minimise associated impacts. – Establish and maintain a minimum 200 m buffer to Bibbulmun Track – Drilling within 300 m of trails only occurs Mon-Fri outside of school holidays 	Annual spatial database review of MAZ.	<ul style="list-style-type: none"> – MAZ was established and demarcated prior to the construction of the adjacent mine development. 	Compliance assessment report will include a review of the MAZ.

Table 10 Trigger and threshold

Indicator/Value	Response actions	Monitoring: Frequency and location	Reporting
Trigger criterion 1 Required exploration or construction are identified to be on trajectory towards any MAZ (within 30 m) listed for the region.	Trigger level action <ul style="list-style-type: none"> – Undertake review of Mine Plan and ensure MAZ is incorporated into the Mine Plan Process. – Review map layers where relevant, including updates. – Conduct in-field assessment to confirm or verify potential exceedance. – If required implement trigger level response action in consultation with relevant stakeholders (for example, rehabilitation). 	<ul style="list-style-type: none"> – Reconciliation assessment against clearing activities once specific clearing area is completed. – If triggered, an in-field assessment will be undertaken against trigger criteria. – Annual spatial database of MAZ 	The compliance assessment report will include discussion around the assessment/s and whether revision of the trigger criterion is required.
Threshold criterion 1 Required exploration or construction activity has intruded into any MAZ listed in Table 9.	Threshold contingency action As above, including the addition of: If avoidance cannot be achieved, Alcoa must provide, to the satisfaction of the State Development Minister, a written report explaining why the relevant avoidance cannot be met prior to the exploration or construction activity being undertaken.	<ul style="list-style-type: none"> – Annual audit of activities and review of internal protocols, where relevant. – Annual spatial database review of MAZ. 	In the event that monitoring, or surveys indicate exceedance of the threshold, the exceedance will be reported to the State Development Minister in writing within 21 days of the exceedance being identified. The compliance assessment report will include discussion around the assessment/s and whether revision of the management objective is required.

2.1 Adaptive management and review

2.1.1 Environmental monitoring and corrective actions

Environmental monitoring will occur during the construction and operational phases of mining in the Myara region including the establishment and progress of rehabilitation.

Any non-conformances with the requirements of this RTFMP will be investigated to identify the root cause and the relevant corrective action. If necessary, the RTFMP will be amended to incorporate the corrective action to prevent future non-conformances. Non-conformances will be rectified or mitigated as soon as possible to ensure minimal ongoing harm to social surroundings.

Relevant procedures will be amended/updated as necessary and inductions and other workforce communication will be undertaken in a timely manner to minimise the risk of re-occurrences.

In the event of unforeseen impacts from the Proposal to recreational or scientific facilities within the Myara region, relevant stakeholders (e.g., DBCA) will be notified and consulted in regard to the appropriate remedial actions.

2.2 Revisions

This RTFMP is intended to be dynamic and may be updated to reflect changes in management practices and social surroundings with time. This will also allow flexibility to respond to new environmental impacts and adopt new technologies/management measures. Figure 4 outlines the process for review, upon revisions to the MMP.

Amendments to management actions will be completed on an as-needed basis. This will include revision/amendment of management actions that are not achieving the desired outcomes, environmental monitoring identifying additional impacts and management actions, and changes to relevant legislation or improvements to practices that are likely to achieve better environmental outcomes.

Where substantial changes to the RTFMP are required, Alcoa will engage with DBCA and relevant stakeholders on the proposed changes to inform and update the document, and the document will be distributed to DBCA and the relevant stakeholders. Once agreed upon, updates to the RTFMP can be discussed in the Alcoa DBCA Conflicts Meeting.

This RTFMP will be reviewed and updated as necessary to reflect material changes and updates in relevant internal and external factors, which may include:

- Material changes in the Myara mine plan, construction or rehabilitation programs that may affect recreational or scientific facilities
- Non-conformances and corrective actions
- Material updates of existing recreational strategies (e.g., PRTS) or release of new recreational strategies that relate to recreational trails or facilities within the mine region.
- Advice from DBCA or key stakeholders regarding material changes to recreational or scientific facilities that may be directly or indirectly impacted by the Proposal, or material changes in environmental conditions that may affect impacts from the Proposal (e.g., external threatening processes).

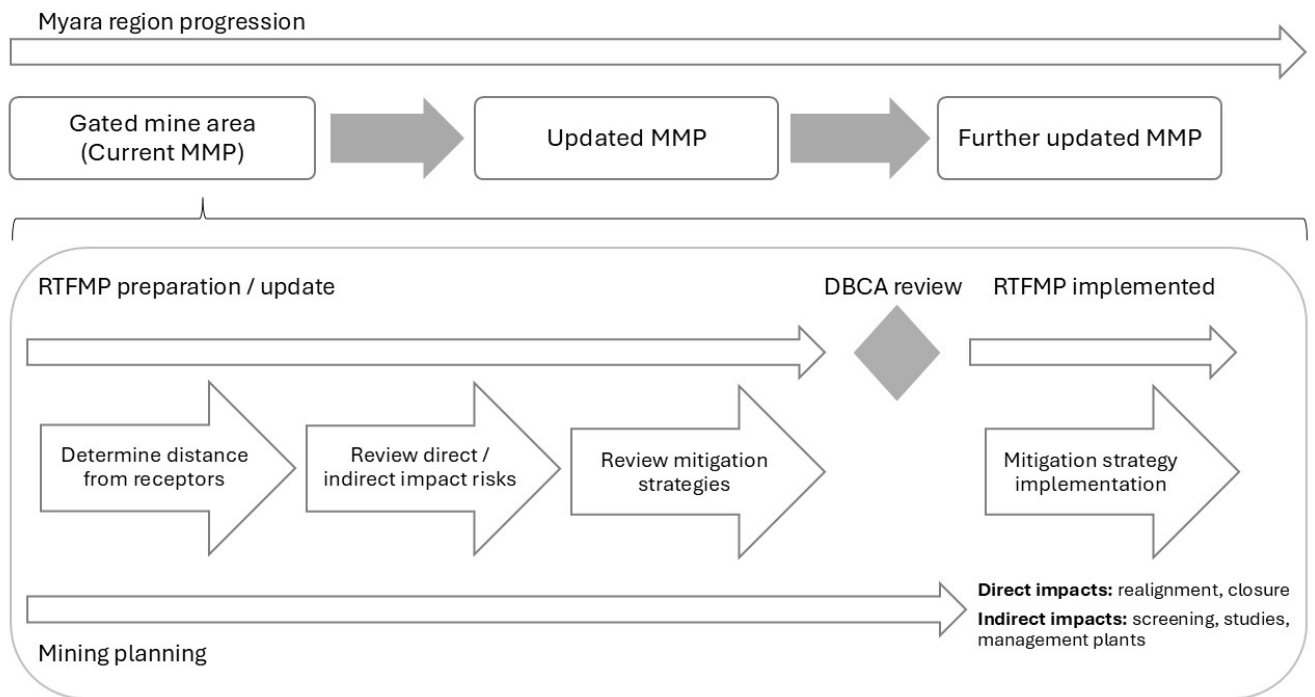


Figure 4 RTFMP Review process

3. Stakeholder consultation

Alcoa has been engaging with a broad range of stakeholders regarding the Hunty Mine's move to the Myara region since ~2005. Stakeholders who have been engaged with Alcoa operations are summarised in Table 11.

A variety of engagement methods have been deployed to ensure stakeholders and community members can access information and have opportunities for meaningful consultation. Alcoa has actively listened to stakeholders and community members, considering their feedback in commissioning studies.

Table 11 *Key stakeholders*

Stakeholder group	Details of consultation
State Government	<ul style="list-style-type: none"> – Departments – Jobs Tourism, Science and Innovation; Biodiversity, Conservation and Attractions; Justice, Local Government, Water Corporation, Sport and Cultural Industries and Department of Justice – Agencies – EPA Tourism WA; Peel Development Commission – Local Members of Parliament – Darling Range; Murray-Wellington;
Local Government	<ul style="list-style-type: none"> – Shire of Boddington – Shire of Wandering – Shire of Murray – Shire of Serpentine-Jarrahdale – City of Mandurah
Recreation and tourism groups	<ul style="list-style-type: none"> – Bibbulmun Track Foundation – Munda Biddi Trail Foundation
Environmental groups:	<ul style="list-style-type: none"> – Peel-Harvey Catchment Council – Peel Alliance – Mandurah Environmental and Heritage Group
Business and industry groups	<ul style="list-style-type: none"> – Institute of Forests of Australia, WA Division – Bistro on the Dam (Serpentine Dam) – Bodhinyana Monastery – Karnet Prison Farm
Community groups	<ul style="list-style-type: none"> – Jarrahdale Community Consultation Network – Nearby communities and nearby private landowners/residents: – Neighbours in Keysbrook

Areas of concern raised by stakeholders relative to landscape and visual impacts associated with Myara region related to potential impacts on a range of values including recreation and ecotourism, local communities and their forest setting, private properties, transport routes, clearing, rehabilitation and cumulative impacts as detailed in Table 12. External stakeholder consultation details including stakeholders, the responses and Alcoa actions are listed in Table 13.

Table 12 *Stakeholder feedback*

Value	Concerns
Recreation and ecotourism	<ul style="list-style-type: none"> – Potential impacts on visual and landscape values that forested areas provide for the general recreational and ecotourism product of the Jarrahdale area, both current and envisaged. – Potential landscape and visual impacts on recreational and ecotourism facilities in the shires of Murray and Serpentine-Jarrahdale including formal and informal tracks, trails and associated campsites. These include: – Facilities associated with the Serpentine Dam including Kingsbury Drive. – The nationally recognised Munda Biddi Trail, which runs through the western edge of the Myara Region
Local communities and their forest setting	<ul style="list-style-type: none"> – Potential impact on the visual and landscape values of the surrounding forest as an enjoyable place to live and/or visit.

Value	Concerns
	<ul style="list-style-type: none"> – Potential impacts on local businesses and the economy of North Dandalup, Keysbrook, Yamba, Jarrahdale and Dwellingup due to visual and landscape value impacts deterring people from living and/or visiting the areas.
Private properties	<ul style="list-style-type: none"> – Potential visual amenity impacts on private properties in or near the proposed mine regions, in particular landowners within the Myara region such as the Bodhinyana Buddhist Monastery and neighbouring Keysbrook.
Transport routes	<ul style="list-style-type: none"> – Potential visual impacts on major and/or significant roads that fall within or near the proposed mine regions. This concern was heightened by a recent clearing conducted by Alcoa along Kingsbury Drive near the Karnet Prison Farm.
Clearing	<ul style="list-style-type: none"> – Potential visual impacts associated with the extent of clearing associated with bauxite mining.
Rehabilitation	<ul style="list-style-type: none"> – Potential visual impacts are associated with the length of time required for rehabilitated forests to become established.
Cumulative impacts	<ul style="list-style-type: none"> – Potential visual impacts associated with Alcoa's past, present and future operations, including beyond those currently being assessed.

Table 13 External stakeholder consultation in relation to this RTFMP

Date	Stakeholder	Consultation	Stakeholder response	Alcoa action
8/8/2024	DBCA	Email request for information on scientific sites in Myara and Larego. Several emails were sent over the following months.	No current information available as register is not functional and therefore GIS is out of date.	Asked GHD to leave this query open and can update in further versions of report.
22/10/2024	DBCA	Alcoa provided DBCA with the drafts of the two RTFMPs and a summary presentation. DBCA agreed to provide comment.	DBCA asked Alcoa to add a note that local trails are not DBCA endorsed and agreed to send written feedback – this was received on 22/11/2024.	Comments have been incorporated prior to finalising the report.
22/10/2024	DBCA	Request for information on apiary and commercial groups operating within Myara Region.	DBCA will follow up and confirm – response received 4/12/2024.	Incorporated into the Myara report.
25/11/2024	Shire of Serpentine-Jarrahdale	Email request explaining DBCA's preference to leave out local trails and asking for Shire of SJ preference.	Include local trails in the plan as they align with DLGSC's goal of increasing participation in outdoor recreation and nature-based tourism.	Included in the Myara report – noted as not DBCA endorsed trails.

4. References

- Common Ground Trails Pty Ltd 2017, *South West Mountain Bike Master Plan*, prepared for WestCycle Inc.
- Common Ground Trails Pty Ltd 2019, *Peel Regional Trails Strategy 2019*, prepared for the City of Mandurah, Shire of Boddington, Shire of Murray, Shire of Serpentine Jarrahdale and Shire of Waroona.
- Department of Biodiversity, Conservation and Attractions 2019, *Two Year Action Plan for Nature-Based Tourism in Western Australia 2019 and 2020*, Government of Western Australia.
- Department of Water and Environmental Regulation, 2019. Operational Policy 13: Recreation within public drinking water source areas on crown land
- Environmental Protection Authority (EPA) 2021, *Instructions on how to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans*, EPA, Western Australia.
- GHD 2024a, Myara Mine Region Noise Impact Assessment
- GHD 2024b, Myara Mine Region Landscape and Visual Impact Assessment
- GHD 2024c, Myara Mine Region Air Quality Impact Assessment
- PX2 Pty Ltd 2015, *Taking the Reins The Western Australian Recreational Horse Trail Strategy*, prepared for the Australian Trail Horse Riders Association.
- Shire of Harvey 2020, *Advocacy Priorities*, retrieved 22 April 2022, from <https://www.harvey.wa.gov.au/build-and-develop/projects/advocacy-priorities>
- TRC Tourism 2017, *Western Australian Strategic Trails Blueprint 2017-2021*, prepared for the Trails Reference Group, Department of Sport and Recreation, May 2017.
- Western Australian Conservation and Parks Commission (2019). *Position Statement: Protecting and conserving the value of the land to the culture and heritage of Aboriginal persons*. Conservation and Parks Commission, Perth.
- WestCycle Incorporated & Purpose Drive Performance (2022). retrieved 06 August 2024, from Western Australian Mountain Bike Strategy 2022-2032. <https://westcycle.org.au/wp-content/uploads/2023/01/WA-Mountain-Bike-Strategy-2022-2032.pdf>

Appendices

Appendix A

**Identified impacts - Recreational facilities
and commercial opportunities**

Colour key

Impact	Colour representation
Direct impact short term (facility within / part within gated area)	
Direct impact long term (facility within / part within region)	
Direct impact mitigated	
No impact	

Table A.1 State significance trails and facilities

ID	Existing asset	Identified values	Proximity to Myara region	Direct impact within mine region	Indirect impact
S01	Munda Biddi Trail	State significance, very high priority in PRTS. Consultation – important to the shires of Murray and Serpentine-Jarrahdale for recreation and ecotourism, use types include mountain biking and camping.	Approximately 11 km within the mine region	Potential	None

Table A.2 Regionally significant trails and facilities

ID	Existing assets	Identified values	Proximity to Myara region	Direct impact within mine region	Indirect impact
R01	Jarrahland Wildflower Scenic Drive	Regional significance, very high priority in PRTS, tourism input to Jarrahdale. 2WD drive – Jarrahdale Road, Kingsbury Drive.	Approximately 12.5 km within mine region	Potential	Potential audible noise and visual impact.

Table A.3 Local significant trails and facilities

ID	Existing assets	Identified values	Proximity to Myara region	Direct impact within mine region	Indirect impact
L01	Serpentine Dam Walk	Used by visitors to Jarrahland Wildflower Drive	Adjacent to the northern boundary of mine region	No impact	Potential visual impacts due to proximity to mining operations.
L02	Gobby Road via Serpentine Track	Bushwalking	Within mine region	No impact	Potential visual impacts due to proximity to mining operations.
L03	Kingsbury Drive Cycling	Road cycling	Within mine region	Potential	Potential visual impacts due to proximity to mining operations.
L04	North Dandalup Dam via Jarrahdale Railway Trail	Bushwalking	Approximately 1.7 km south-west of the mine region	No impact	Potential visual impacts due to proximity to mining operations.
L06	Mount Solus Walk (closed)	Bushwalking (prior to closure for mining activities)	Within mine region	Potential	Potential noise and visual impacts due to proximity to mining operations.
L07	Thorpe Road Loop (closed)	Bushwalking	Within mine region	Potential	Potential noise and visual impacts due to proximity to mining operations.
L04	Serpentine Dam picnic area, accessible toilets and playground	Used by visitors to Jarrahland Wildflower Trail Scenic Drive Picnic areas, toilets, lookout, café, day visits and Playground opened in 2024.	Adjacent to the northern boundary of mine region	No impact	Potential visual impacts due to proximity to mining operations.
n/a	Shield trees	Former forest industry grid reference trees, widespread (total 3437 trees within ML1SA) through northern Jarrah forest. Used for orienteering	169 trees within mine region	Potential	Dieback, weeds

Table A.4 Commercial operators and opportunities

ID	Existing assets	Identified values	Proximity to Myara region	Direct impact within mine region	Indirect impact
n/a	Apiary sites	Agricultural	16 current apiaries within mine region	Potential	Potential reduction in nectar sources resulting from clearing; dust impacts within 500 m of mining.
n/a	Bistro by the Dam	Tourism, recreation	within region, outside of current gated area	No impact	Potential for reduction in turnover should reduce recreational use occur based on proximity to mining operations.
n/a	Seed collecting	Commercial	no specific site	Reduction of accessible vegetation as a result of clearing for mining operations.	Reduction of access to vegetation as a result of road closures.
n/a	Commercial wildflower picking	Commercial	no specific site	Reduction of accessible vegetation as a result of clearing for mining operations.	Reduction of access to vegetation as a result of road closures.

Appendix B

Risk assessment

Consequence criteria

Classification	Short term minor impact	Long term minor impact	Short term major impact	Long term major impact
State significance	Moderate	Major	Major	Critical
Regional significance	Minor	Moderate	Major	Major
Local / informal	Minor	Minor	Moderate	Moderate

Risk matrix

Consequence	Likelihood			
	Unlikely	Potential	Likely	Almost certain
	Critical	Medium	High	Very high
	Major	Medium	High	Very high
	Moderate	Medium	High	High
Minor	Low	Medium	Medium	Medium

Table B.1 Risk assessment: Closure and direct disturbance

Asset	Significance	Magnitude	Duration	Consequence	Likelihood	Risk	Strategy
Mount Solus Walk (closed)	Local	Moderate	Long-term	Major	Almost certain	Very high	Restrict access, minimise impacts, rehabilitate and restore at closure
Thorpe Road Loop (closed)	Local	Moderate	Long-term	Major	Almost certain	Very high	Restrict access, minimise impacts, rehabilitate and restore at closure
Commercial operators							
Apiary sites	Informal	Moderate	Long-term	Moderate	Potential	Medium	Restrict access, minimise impacts
Seed collecting	Informal	Moderate	Long-term	Moderate	Potential	Medium	Restrict access, minimise impacts
Commercial wildflower picking	Informal	Moderate	Long-term	Moderate	Potential	Medium	Restrict access, minimise impacts
Other facilities							
Shield trees	Regional	Moderate	Long-term	Moderate	Likely	High	Restrict access, minimise impacts

Table B.2 Risk assessment – Audible noise and airblast

Asset	Significance	Magnitude	Duration	Consequence	Likelihood	Risk	Strategy
State significant trails and camping							
Munda Biddi Trail	State	Moderate	Short-term	Moderate	Likely	High	Noise management plan
Region significant trails							
Jarrahlend Wildflower Trail Scenic Drive	Regional	Minor	Short-term	Minor	Likely	Medium	Noise management plan
Local trail							
Kingsbury Drive Cycling	Local	Minor	Short-term	Minor	Potential	Medium	Noise management plan

Table B.3 Risk assessment – Visual impact

Asset	Significance	Magnitude	Duration	Consequence	Likelihood	Risk	Strategy
Region significant tracks and trails							
Jarrahlend Wildflower Trail Scenic Drive	Regional	Major	Long-term	Major	Almost certain	Very high	Avoid impact, maintain public access, prioritise rehabilitation
Other tracks and trails							
Kingsbury Drive Cycling	Local	Moderate	Long-term	Major	Almost certain	Very high	Avoid impact, maintain public access, prioritise rehabilitation
North Dandalup Dam via Jarrahdale railway trail	Local	Minor	Long-term	Moderate	Almost certain	High	Avoid impact, maintain public access, prioritise rehabilitation
Day use areas							
Serpentine Dam, picnic area, accessible toilets and playground	Regional	Minor	Long-term	Minor	Almost certain	Medium	Avoid impacts, maintain public access

Table B.4 Risk assessment – Air quality impact

Asset	Significance	Magnitude	Duration	Consequence	Likelihood	Risk	Strategy
Other tracks and trails							
Kingsbury Drive Cycling	Local	Minor	Short-term	Minor	Potential	Medium	Dust management plan



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