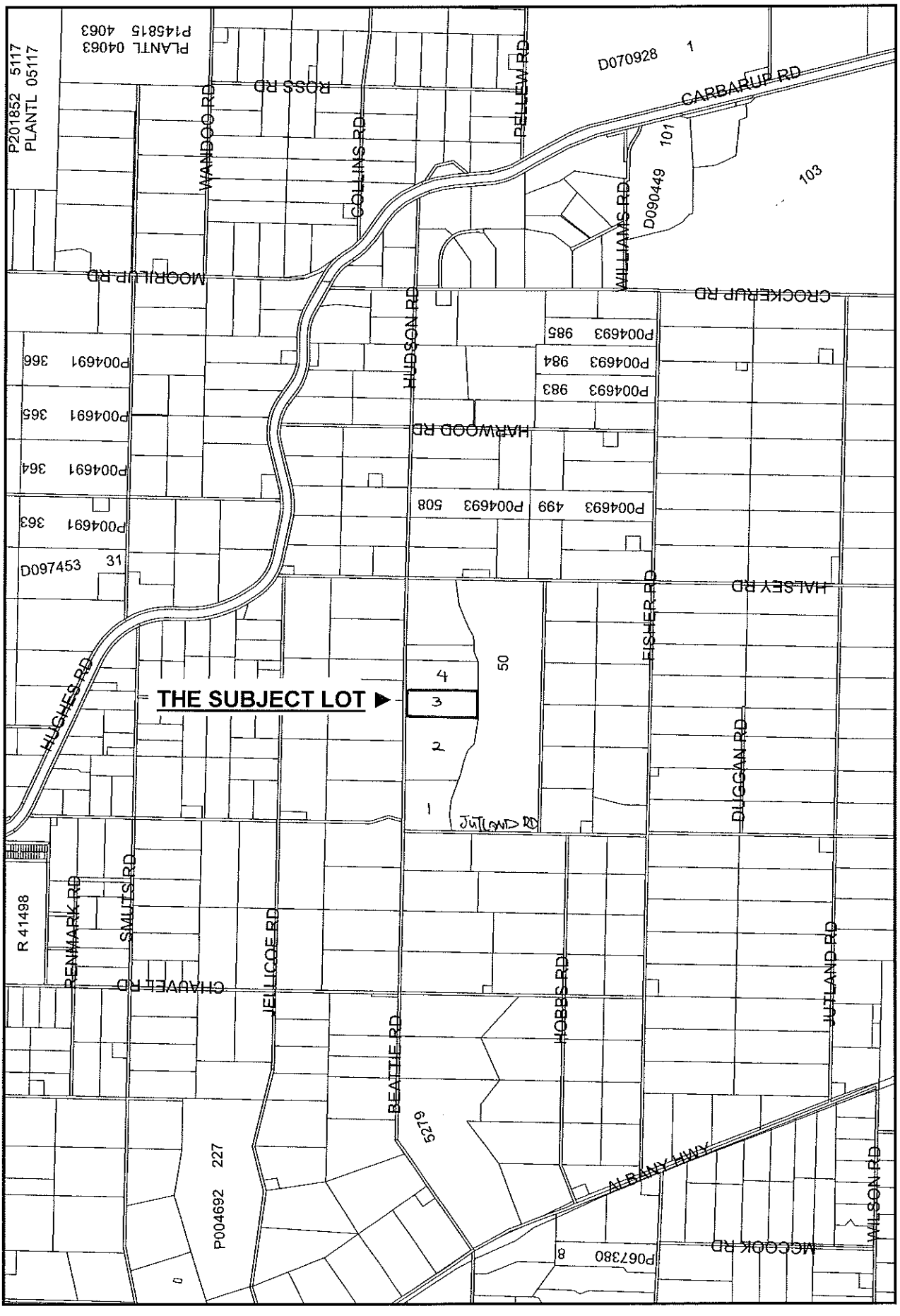
Council

Lot 3 Beattie Road, Kendenup - Gallery (Art Workshop)

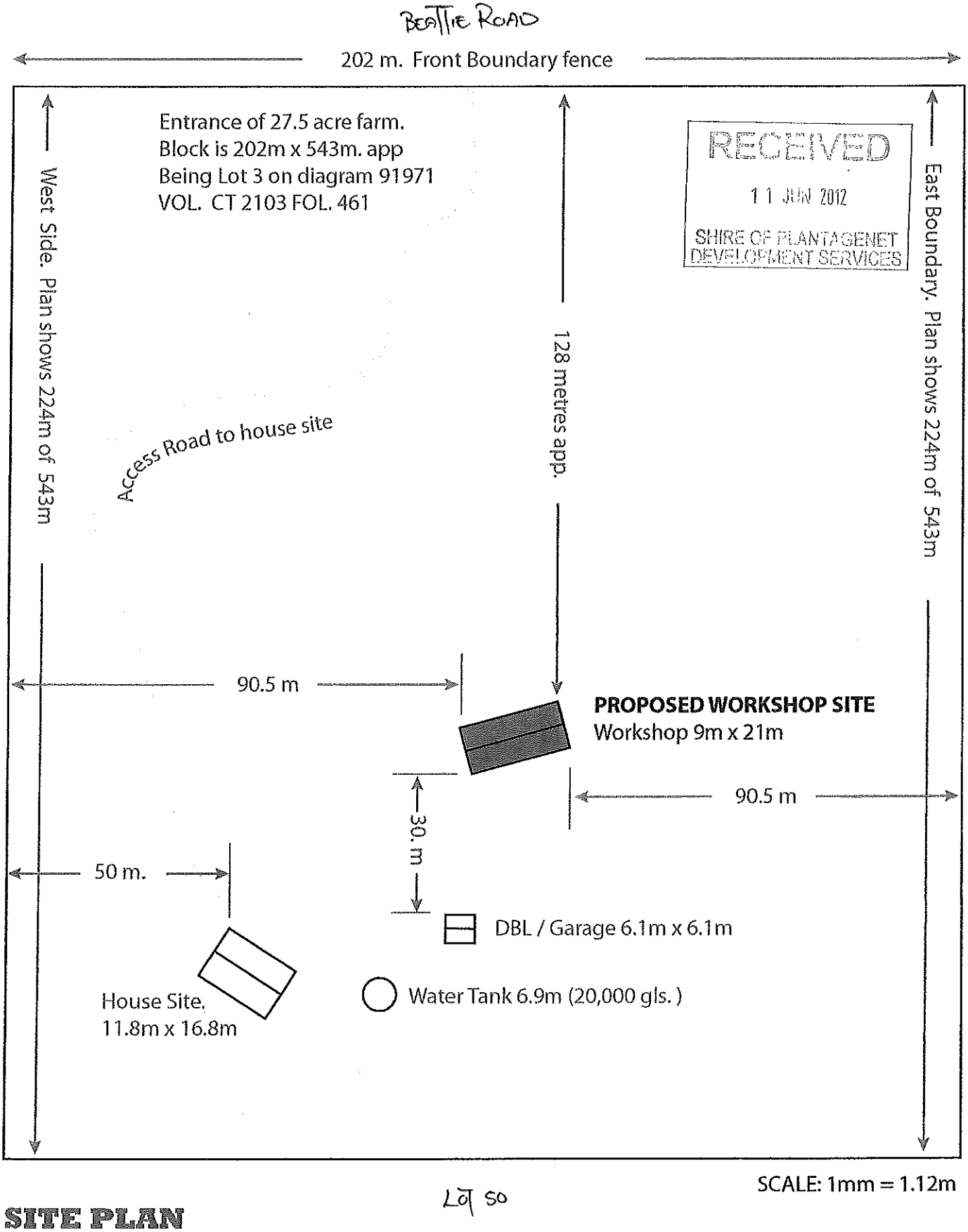
Location Plan
Site Plan
Floor Plan
Elevations

Meeting Date: 14 August 2012

Number of Pages : 5



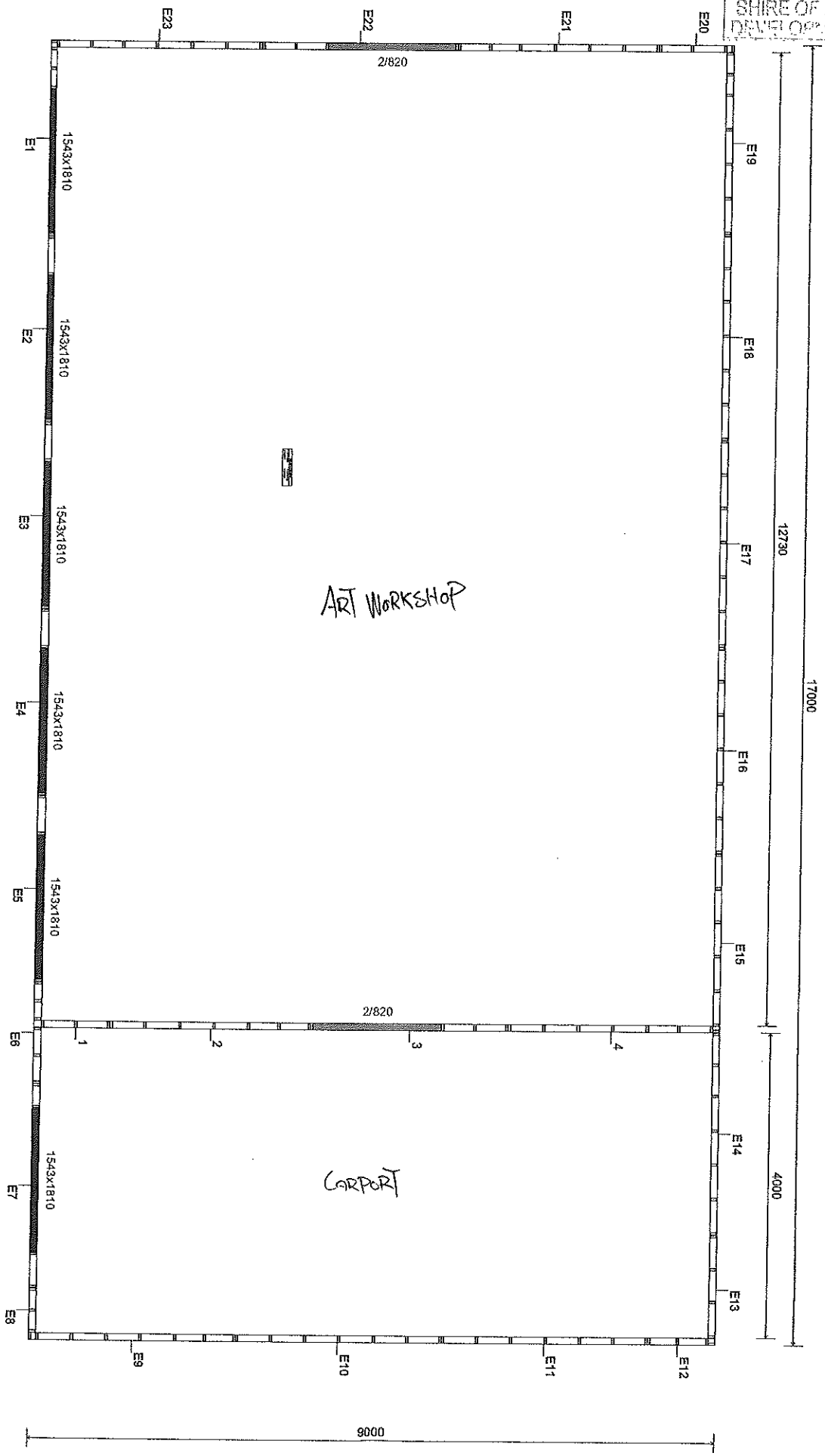
LOCATION PLAN



SITE PLAN
FOR PROPOSED WORKSHOP

A & A Molan
95 Beattie Road
Kendenup 6323

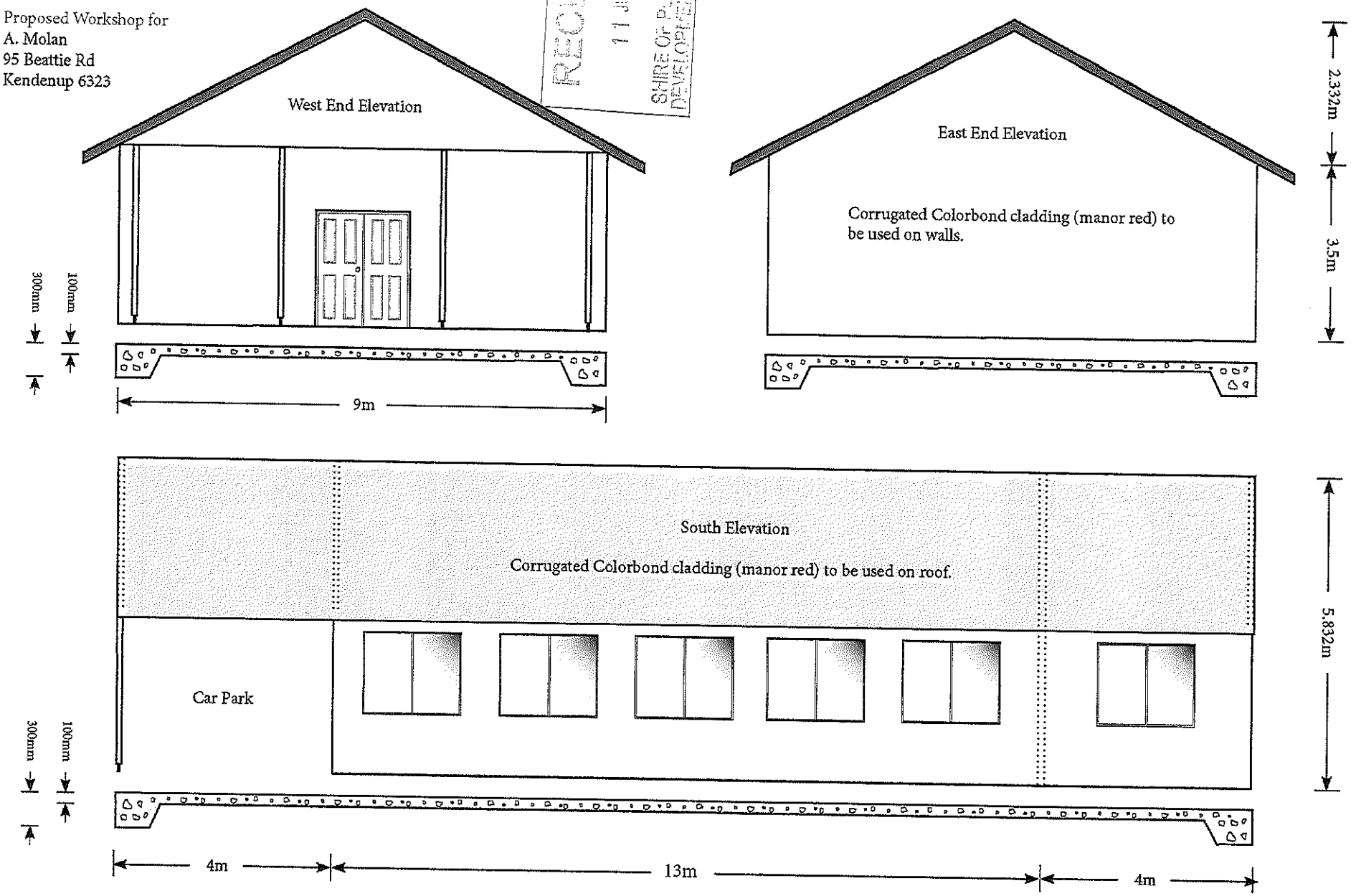
SITE PLAN



FLOOR PLAN

ELEVATIONS

Proposed Workshop for
A. Molan
95 Beattie Rd
Kendenup 6323



ELEVATIONS

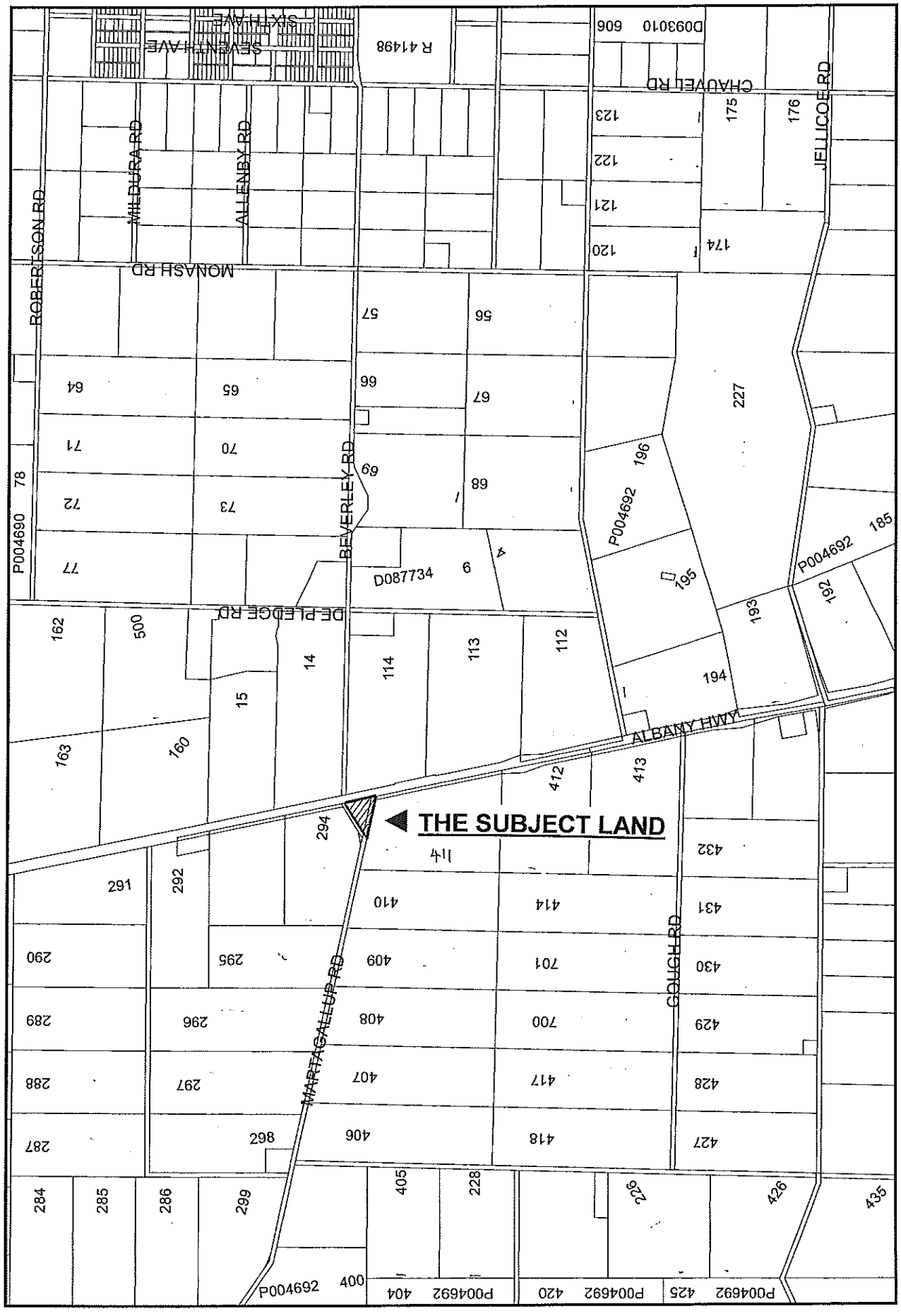
Council

Martagallup Road corner Albany Highway, Kendenup - Telecommunications Infrastructure

Location Plan
Site Plan
Floor Plan
Elevation

Meeting Date: 14 August 2012

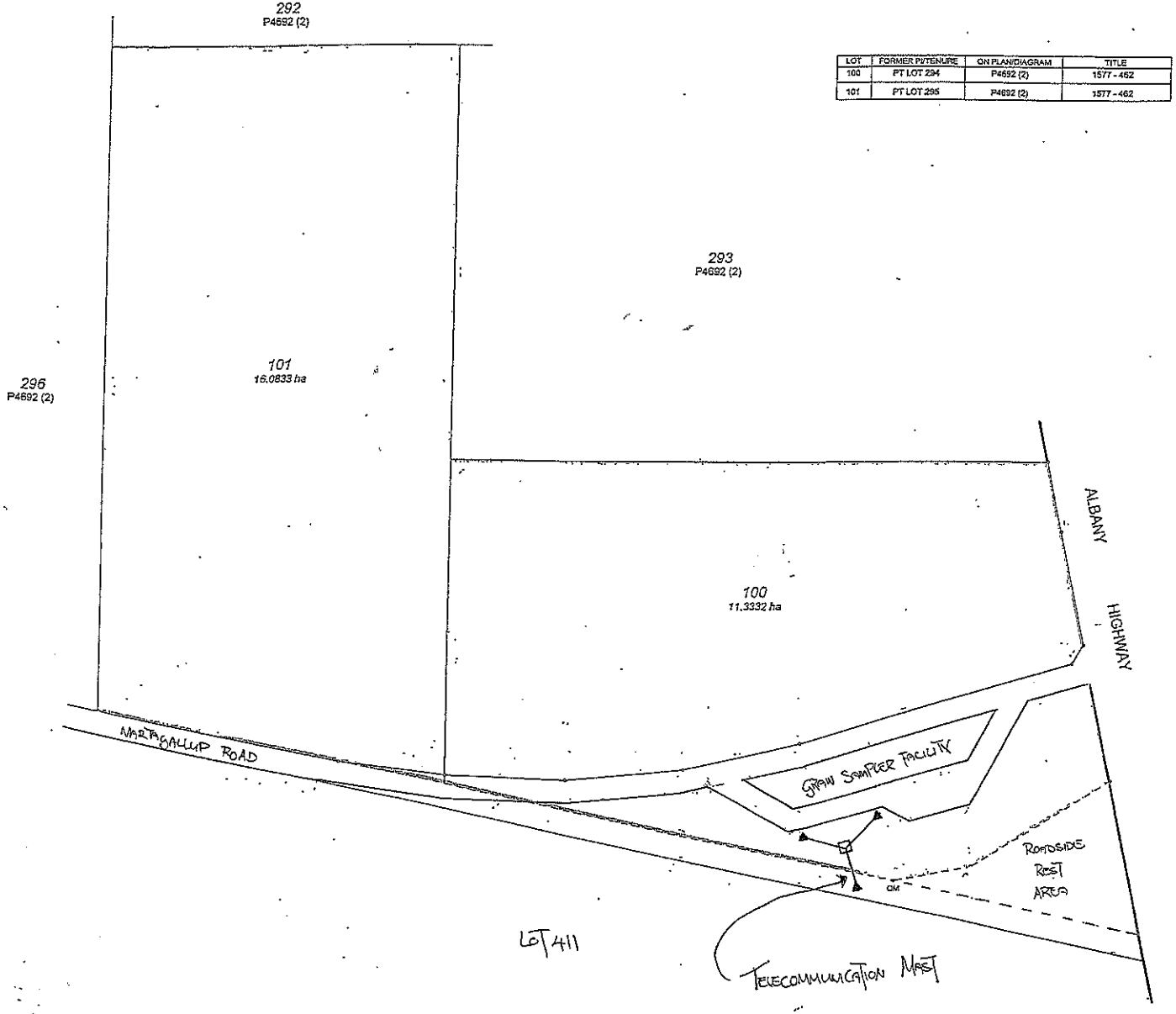
Number of Pages : 5



LOCATION PLAN

VERSION	AMENDMENT	AUTHORISED BY	DATE

LOT	FORMER P/TENURE	ON PLAN/DIAGRAM	TITLE
100	PT LOT 294	P4692 (2)	1577 - 462
101	PT LOT 295	P4692 (2)	1577 - 462



SITE PLAN

Plan prepared by Council Officer

TYPE FREEHOLD

PURPOSE SUBDIVISION

PLAN OF

LOTS 100 , 101 AND ROAD WIDENINGS

SSA REG / NO

DISTRICT HAY

TOWNSITE

FILE

LOCAL AUTHORITY SHIRE OF PLANTAGENET

LOCALITY KENDENUP

FORMER TENURE	ON
SEE TABLE	TENTERDEN (25) S.W.

INDEX

SCALE: 1 : 2500 at A2
ALL DISTANCE ARE IN METRES
0 50 100

FIELD BOOK 115919

SURVEYOR'S CERTIFICATE - Reg 54
I, M. ANDERSON
hereby certify that this plan is accurate and is a correct representation of the -
(a) * survey; and / or
(b) * calculations from measurements ;
(* delete if inapplicable)
undertaken for the purposes of this plan and that it complies with the relevant section(s) in relation to which it is lodged.

Licensed Surveyor Date

SURVEYOR'S CERTIFICATE - Compiled
I,
hereby certify that this compiled plan
(a) is a correct and accurate representation of the survey(s) of subject land ; and
(b) is in accordance with the relevant law in in relation to which it is lodged

Licensed Surveyor Date

APPROVED BY
WESTERN AUSTRALIAN PLANNING COMMISSION
FILE 143571

30-May-2012
DELEGATED UNDER S.16 OF THE P & D ACT 2005
DATE

LODGED
DATE 1-May-12
FEE PAID $351.00
ASSESS No. 10582959

TYPE OF VALIDATION
FULL AUDIT
LEGAL EQUIPMENT G. Singleton
DUCKET Trim
CERTIFIED CORRECT
I.S.C. 23-May-2012
P.S.C.

IN ORDER FOR DEALINGS
SUBJECT TO

FOR INSPECTOR OF PLANS & SURVEYS AUTHORIZED LAND OFFICER DATE

APPROVED

INSPECTOR OF PLANS & SURVEYS AUTHORIZED LAND OFFICER DATE

Landgate
Western Australian Land Information Authority

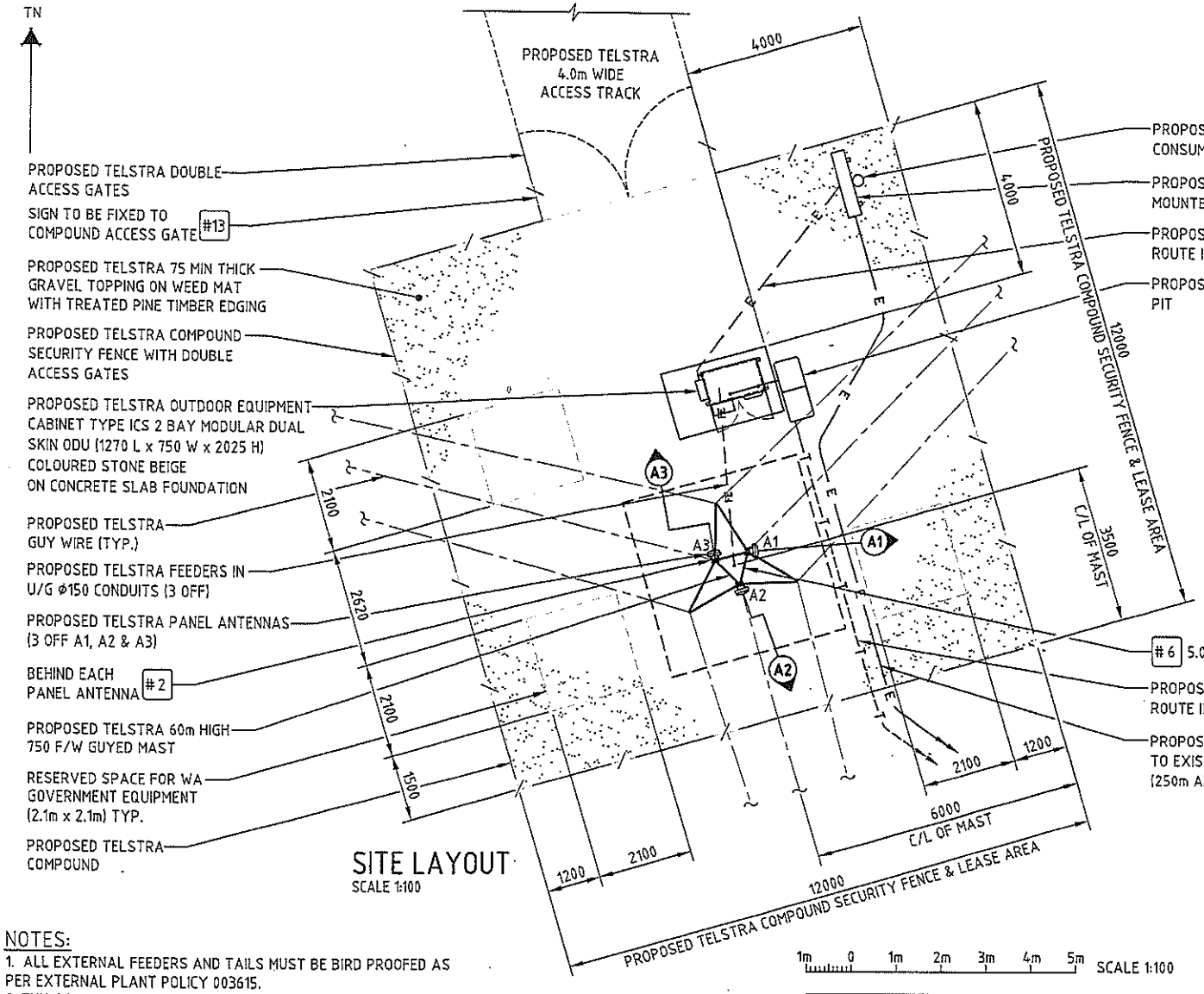
DEPOSITED PLAN
70040

SHEET 1 OF 1
VERSION 1

INTERESTS AND NOTIFICATIONS

SUBJECT	PURPOSE	STATUTORY REFERENCE	ORIGIN	LAND BURDENED	BENEFIT TO	COMMENTS

FLOOR PLAN



SITE LAYOUT
SCALE 1:100

1m 0 1m 2m 3m 4m 5m SCALE 1:100

SITE EME SIGNAGE

#2 EME TELSTRA #2 SIGN
SIGNS TO BE UV STABLE STICKERS AND FIXED TO REAR OF ALL TELSTRA PANEL ANTENNAS (3 OFF)

#6 EME TELSTRA #6 SIGN
SECURED 5.0m ABOVE GROUND LEVEL TO GUYED MAST USING STAINLESS STEEL STRAPS

#13 EME TELSTRA #13 SIGN
SECURED TO TELSTRA COMPOUND GATE USING STAINLESS STEEL STRAPS

RECEIVED
18 JUN 2012
SHIRE OF PLANTAGENET DEVELOPMENT SERVICES

PRELIMINARY

NOTE: THIS DRAWING TO BE READ IN CONJUNCTION WITH SHEET S1

NOTES:
1. ALL EXTERNAL FEEDERS AND TAILS MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. THIS DRAWING SET IS A PRELIMINARY DRAWING ONLY AND IS ISSUED FOR COMMENT. IT IS NOT A DETAILED SURVEY / STRUCTURAL DRAWING AND THEREFORE COULD BE SUBJECT TO CHANGE.
3. FOUNDATIONS ARE SHOWN INDICATIVE ONLY. FINAL DESIGN IS SUBJECT TO RESULTS OF GEOTECHNICAL INVESTIGATION.
4. WA GOVERNMENT EQUIPMENT ALLOCATION IS PRELIMINARY ONLY AND IS DEPENDANT ON FUTURE DESIGN REQUIREMENTS.

DO NOT SCALE

NEXT NETWORK

tci
TCI, Suite G.01, 118-120 Pacific Highway, St Leonards, NSW 2065
PO Box 125, St Leonards, NSW 1590
T 02 9478 9999 F 02 9478 9900
www.tcipl.com.au
Intelligent Solutions™

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
WA07096.01	SF	PH	PRELIMINARY FOR APPROVAL - 71472103W001TCI	YG	JB	03.05.12	1
WA07096.01	RT	PH	PRELIMINARY FOR APPROVAL - 71472103W001TCI	YG	JB	31.05.12	2
WA07096.01	KM	PH	ADDRESS CHANGED - 71472103W001TCI	YG	JB	08.06.12	3

Telstra

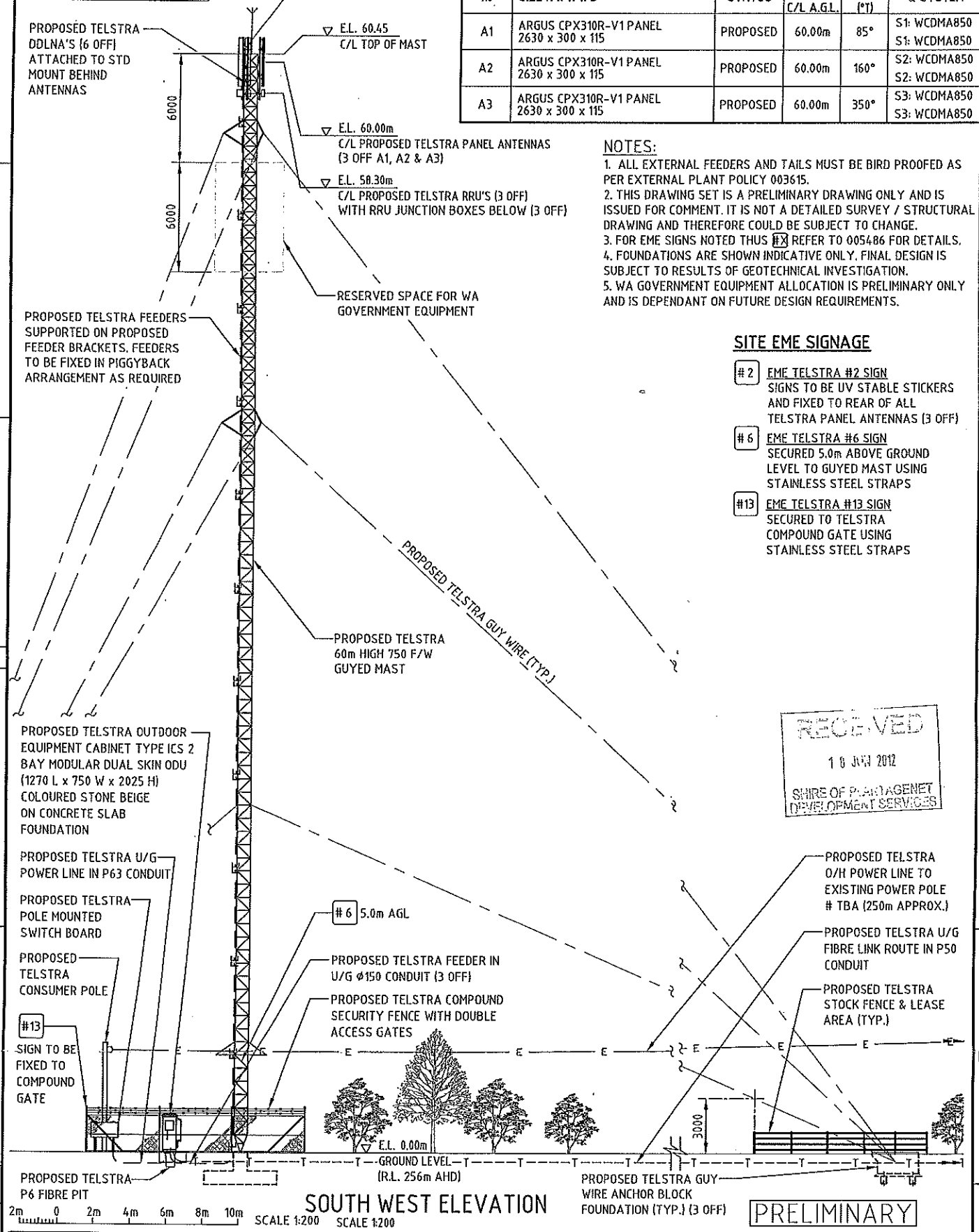
MOBILE NETWORK SITE 284589
KENDENUP
SITE LAYOUT
ROAD RESERVE ON PLAN 70040 CRN MARTAGALLUP RD & ALBANY HWY, KENDENUP, WA 6323

DWG NO. W107066
SHT NO. S1-1 INDEX

NEXT NETWORK

TELSTRA ANTENNA CONFIGURATION TABLE

ANTENNA No	ANTENNA TYPE & SIZE H x W x D	ANTENNA STATUS	ANTENNA HEIGHT C/L A.G.L.	ANTENNA BEARING (°T)	SECTOR NO. & SYSTEM
A1	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	PROPOSED	60.00m	85°	S1: WCDMA850 S1: WCDMA850
A2	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	PROPOSED	60.00m	160°	S2: WCDMA850 S2: WCDMA850
A3	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	PROPOSED	60.00m	350°	S3: WCDMA850 S3: WCDMA850



NOTES:

1. ALL EXTERNAL FEEDERS AND TAILS MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. THIS DRAWING SET IS A PRELIMINARY DRAWING ONLY AND IS ISSUED FOR COMMENT. IT IS NOT A DETAILED SURVEY / STRUCTURAL DRAWING AND THEREFORE COULD BE SUBJECT TO CHANGE.
3. FOR EME SIGNS NOTED THUS #X REFER TO 005486 FOR DETAILS.
4. FOUNDATIONS ARE SHOWN INDICATIVE ONLY. FINAL DESIGN IS SUBJECT TO RESULTS OF GEOTECHNICAL INVESTIGATION.
5. WA GOVERNMENT EQUIPMENT ALLOCATION IS PRELIMINARY ONLY AND IS DEPENDANT ON FUTURE DESIGN REQUIREMENTS.

SITE EME SIGNAGE

#2 EME TELSTRA #2 SIGN
SIGNS TO BE UV STABLE STICKERS AND FIXED TO REAR OF ALL TELSTRA PANEL ANTENNAS (3 OFF)

#6 EME TELSTRA #6 SIGN
SECURED 5.0m ABOVE GROUND LEVEL TO GUYED MAST USING STAINLESS STEEL STRAPS

#13 EME TELSTRA #13 SIGN
SECURED TO TELSTRA COMPOUND GATE USING STAINLESS STEEL STRAPS

2m 0 2m 4m 6m 8m 10m

SCALE 1:200 SCALE 1:200

SOUTH WEST ELEVATION

PRELIMINARY

DO NOT SCALE

TCI, Suite G.01, 118-120 Pacific Highway, St Leonards, NSW 2065
PO Box 125, St Leonards, NSW 1590
T 02 9478 9999 F 02 9478 9900
www.tcipl.com.au
Intelligent Solutions™

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
WA07096.01	SF	PH	PRELIMINARY FOR APPROVAL - 71472103W001TCI	YG	JB	03.05.12	1
WA07096.01	KM	PH	ADDRESS CHANGED - 71472103W001TCI	YG	JB	08.06.12	2

Telstra

MOBILE NETWORK SITE 284589
KENDENUP
SOUTH WEST ELEVATION
ROAD RESERVE ON PLAN 70040 CRH MARTAGALLUP RD & ALBANY HWY, KENDENUP WA 6323

DWG NO. W107066 SHT NO. S3 INDEX

ELEVATION

A3V

Council

Mondurup Reserve Draft Management Plan

Draft Management Plan

Meeting Date: 14 August 2012

Number of Pages : 44

Mondurup Reserve
Draft Management Plan

July 2012 (Final)

Prepared by

The Wilson Inlet Catchment Committee
On behalf of the Shire of Plantagenet

Shire of Plantagenet

Wilson Inlet Catchment Committee Inc.

TABLE OF CONTENTS

Summary

The Mondurup Reserve is located adjacent to the town of Mount Barker within the Great Southern Region of Western Australia (Map 1). Due to the close proximity to town this reserve is subjected to the pressures of urbanisation. Careful planning and management for the protection of conservation values and the balance of educational and recreational purposes is needed.

The aim of this Management Plan is to introduce a guide for the ongoing management of the Reserve. The Management Plan identifies values, threats, management issues and strategies.
The following issues should be planned for immediate action:

Vehicle Access

1. Management tracks to have lockable gates as per *Map 7a* and *b* closed and locked in winter and unlocked during the fire season.
2. Access to be restricted using the most appropriate method on other tracks not needed for management.
3. Maintain tracks using herbicide rather than grader where appropriate and required.

Fire Breaks and Fire Risk Management

4. Establish a fire management plan including maps with access roads and disease hygiene areas.
5. Upgrade where appropriate and required.
6. Maintain firebreaks with herbicide use to avoid grading or slashing which disturbs rocks making walk trails difficult for users and may encourage weed growth and spread.
7. Eastern buffer strips adjacent to private property to be burnt rather than slashed to reduce fuel load.
8. Reserve to be managed for fire in 7 cells (refer to *Map 8)*
9. Plan for future access road/management tracks to replace tracks through sensitive areas.

Hygiene Plan

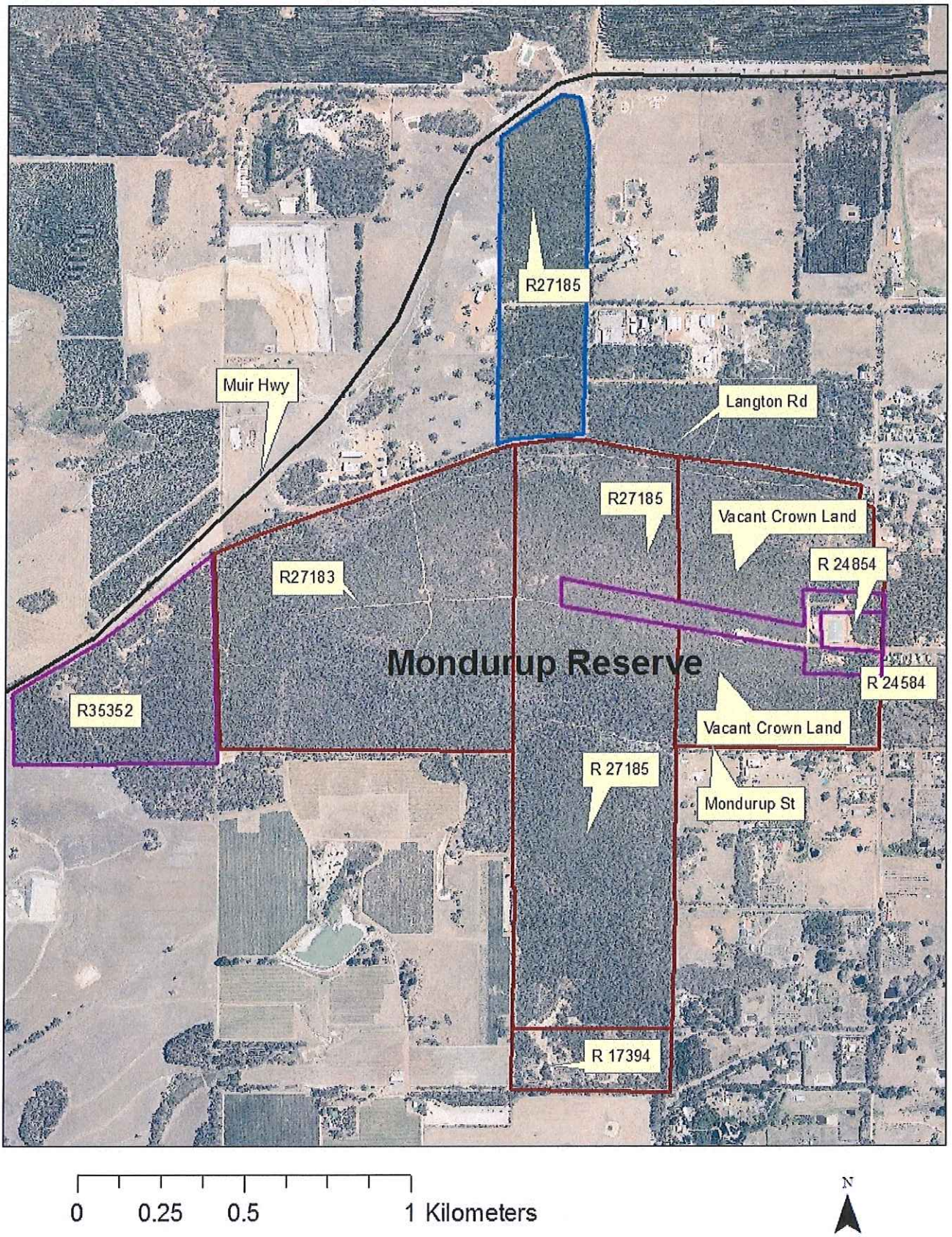
10. Restrict access to dieback protectable areas.
11. Close internal tracks that traverse infected and uninfected areas and rehabilitate where possible with the exception of firebreaks.
12. For tracks required for emergency access install signage about the disease status and why the need to clean down before entering dieback free areas.
13. Install signage to indicate disease status at the edge of protectable areas.
14. Assess track conditions in or near protectable areas to determine whether track upgrades can reduce the soil or water movement. Where necessary upgrade the condition of the tracks to prevent avoidable soil movement.
15. Avoid undertaking works when soil moisture is high and soil is likely to adhere to tyres, machinery and soles where possible.
16. Ensure vehicle and machinery hygiene protocols are implemented to reduce soil and seed movement.
17. Erect signage at access points to indicate dieback status i.e. the reserve is mainly infested but there are significant areas that can be protected.
18. Address methods to prevent the offsite spread of the pathogen.

19. Ensure any material brought into the reserve's protectable area are clean (eg soil, gravel, equipment) and that hygiene procedures are planned for and followed during soil disturbance activities.
20. Undertake strategic phosphate treatment of disease fronts in particular protectable areas to reduce the front movement.
21. Provide users with the hygiene map and management guidelines for operations within the reserve eg fire brigade, Friends of Mondurup Reserve, Water Corp.
22. Create awareness of the impacts and control of plant disease through interpretative signage, communication and education.
23. Display required hygiene practices in designated areas.
24. Carry out monitoring and review disease mapping on a regular basis.
25. Use phosphite, where appropriate, to protect populations of threatened flora from *Phytophthora* infection.
26. Install and maintain foot baths in sensitive areas to prevent the introduction and spread of infection.

Acknowledgements

The Friends of Mondurup Reserve have been consulted in the development of this management plan. The Friends of Mondurup Reserve formed in 2009 with the vision to maintain the natural environment of the reserve while keeping it accessible for walking and nature conservation. This group has been meeting regularly undertaking rubbish collection, weed control, flora surveys and other activities to improve the enjoyment of the reserve for the community. They are motivated to assist the Shire of Plantagenet to manage the reserve for conservation and are a resource that should be embraced.

This plan has been finalised with the assistance of a consultative committee formed to determine outcomes. Thank you to Cr Len Handasyde (Chair), Cr Sue Etherington, Kevin Forbes (Middle Ward Fire Brigade Captain), Colin Taylor (Middle Ward Fire Brigade), Kevin Collins (Chair of Friends of Mondurup), Gail Glenn, (Friends of Mondurup), Nicole Selesnew (Manager of Community Services) Dominic Le Cerf (Manager of Works and Services), Andrew Buchanan (Community Emergency Services Manager) and Lynn Heppell (Wilson Inlet Catchment Committee).



Map 1 Showing different Reserves comprising 'Mondurup Reserve'

1.0 The Physical Environment

1.1. Location Information

The Reserve referred to as 'Mondurup Reserve' is comprised of:

1. Reserve 35352 – C Class Reserve managed by the Main Roads WA for the purpose of Gravel;
2. Reserve 27183 – A Class Reserve managed by the Shire of Plantagenet for the purpose of Conservation and Propagation of Timber;
3. Reserve 27185 – A Class Reserve managed by the Shire of Plantagenet for the purpose of Green Belt;
4. Reserve 17394 – C Class Reserve – unmanaged reserve for the purpose of Gravel;
5. Reserve 24584 – C Class Reserve managed by the Minister for Water Resources for the purpose of Water; and
6. Unallocated Crown Land.

Reserve 24584 (managed by the Minister for Water Resources) houses a water treatment plant and water tanks for the Town water supply, which are fenced to exclude non authorised personnel.

Mondurup Reserve is bounded by: Langton Road/Muir Highway; Marmion and Mondurup Streets; Omrah Road; and private property.

Total area: 210 hectares (519 acres)
34° 37' 50"S 117° 39'42"E

1.2. Climate

The general climate in the area is described as 'Mediterranean' - cool wet winters and warm dry summers with an average rainfall of 600-800 mm.

1.3. Biogeographical Context

The reserve is located on the boundary of the Jarrah Forest bioregion (Appendix 1). It is on the south eastern boundary of the Southern Jarrah Forest sub-region which has the highest level of private land ownership and clearing in the bioregion.

1.4. Landforms

The reserve is on a gradual laterite hill rising to 342m ASL with the lowest levels on the south west boundary of 262m ASL.

1.5. Geology

The underlying structure of the reserve is similar to the Porongurup Range with in situ weathering. The Porongurup Range is composed of granite dated at around 1184 million years old (Black *et al*, 1992). The granite is believed to be a melted portion of the Australian continental plate that cooled under intense pressure deep in the earth's crust. Erosion of the surrounding metamorphic rocks resulted in the granites being exposed as a mountain range.

The granite hills of the Porongurup Range were true islands during the Eocene period 55 million years ago, when the sea covered coastal areas inland as far as the Stirling Range (Newbey, 1985). The laterite bands formed at the same time as the extensive laterites throughout the south-west.

The regolith (the material that rests upon solid rock) is shallow to moderately shallow (< 20 m) and is mostly composed of in-situ weathered material over basement rocks.

The Mondurup Reserve is located on the southern edge of the Yilgarn Craton, the remains of part of the original continental land mass. The Albany-Fraser Orogen, a belt of deformed generally igneous and metamorphic rocks 1200 to 1400 million years old, lies to the south of the reserve. Numerous shear zones and faults occur in the basement rocks. These features have dictated the position of the creeks and affect surface and groundwater flows surrounding the reserve (Ferdowsian & Greenham 1992).

1.6. Landscape Context

This reserve is significant due to: the close proximity to town; a wide range of species of flora and fauna, including declared Rare Flora and Priority Flora; and the linkages it forms with other significant reserves such as the Hay Sheep Wash, Mt Lindesay and Porongurup National Parks.

1.7. History of Land Use

1.7.1. European settlement

Mount Barker was first explored in late 1829, nearly four years after the establishment of the penal colony at Albany by colony's surgeon Dr Thomas Braidwood Wilson and party. They reached Mount Barker, which was named after Captain Collett Barker, the settlement's commandant, in late 1829 and then turned west and south reaching the coast near the present day site of Denmark.

A rough track was eventually established between Perth and Albany which had reached Mount Barker by late 1835 and by 1860 the township had begun. The first farm in Mount Barker was developed by George Egerton-Warburton who also built St Werburghs chapel in 1872 to serve the early pioneers.

Further establishment of farmland continued within the district and stock routes to the coast established. Many current reserves were previously used as stopping points and watering holes along the routes.

1.7.2. Aboriginal History

In the past Noongar people used this reserve for traditional purposes such as camping. Although there are not any heritage sites listed with the Department of Indigenous Affairs, there is some cultural significance but not as much as other Mount Barker town site reserves. Refer to Appendix 2 for map detailing the Noongar Regions.

2.0 Nature Conservation Values

2.1. Native Vegetation Communities

The main communities include:

- *Jarrah Forest*
- *Jarrah/Marri Forest*
- *Banksia Woodland*

2.2. Flora Species Values

The South West of WA is a 'Biodiversity Hot Spot'. The vascular flora of the south west is diverse and has a high level of endemism with about 25 % of about 8000 species estimated to be endemic to the south-west (Hopper 1992).

Refer to Appendix 3 which lists flora found either through initial flora surveys carried out by the Friends of Mondurup Reserve or which are likely to occur in the reserve.

The reserve has at least: 8 species of *Hakea;* 3 species of *Banksia;* 3 species of *Grevillea;* and 6 species of *Dryandra.*

Of special significance found in this reserve is:

- The main population of *Banksia sphaerocarpa var latifolia*
- The most southern population of *Dryandra preisii*

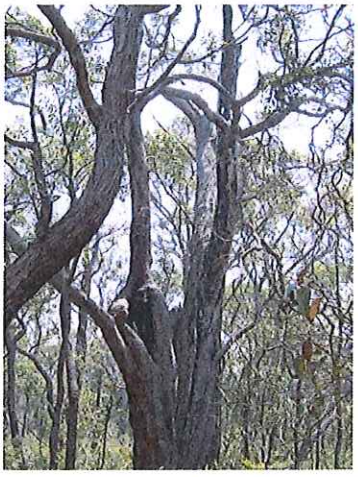
The Rare or Priority flora either found or likely to occur in this reserve are:

- *Banksia porrecta* P4
- *Pimelea rosea subsp annelsii* P3

2.3. Fauna Species Values

Although there are only reported sightings of fauna it is believed that this reserve would sustain populations of threatened and common fauna due to the size and quality of fauna habitat.

Refer to Appendix 4 for a list of fauna likely to be found in the reserve.



Mature trees with hollows suitable for fauna habitat

3.0 Major Threatening Processes

3.1 Invasive Species

3.1.1. Introduced Plants

Due to the close proximity to town many weeds have 'escaped from gardens' and invaded the reserve. There is evidence of dumping of garden waste. Weed invasion occurs at the edge of the reserves, firebreaks along the reserve boundaries and in abandoned gravel pits.

Abandoned gravel pits exist on the northern boundary (E34° 37'35.1 S117° 38'29.6) Muir Hwy and the south west corner (E 34° 39'37.1 S117° 39'23.3) Omrah Rd.
These gravel pits contain infestations of Eastern States Wattles (*Acacia longifolia, A dealbata, A. baileyana*) Victorian Tea Tree, Pines, Watsonia and Blackberry.

A list of Declared and Environmental Weeds likely to occur in the Reserve is provided in Appendix 5.

3.1.2. Plant Diseases

Dieback

Phytophthora cinnamomi is a soil borne plant pathogen that causes dieback disease, a slow moving destructive root disease that results in the death of susceptible plants. Over 40% of the WA plant species are susceptible to the disease mostly in the plant families Proteaceae, Epacridaceae and Fabacaeae.

The Reserve is situated in a high rainfall area with soils susceptible to harbouring *P. cinnamomi* and contains some species of flora vulnerable to its attack. Dieback has already had a major impact on species decline with continuing threat to many rare and special plants. Most easily recognised is the loss of Myrtaceae species *Eucalyptus marginata* (Jarrah). These ancient trees are dying and have many hollows which are important nesting sites for many marsupials and birds including the rare Red Tailed Cockatoos. Unfortunately these trees are being cut down and poached for firewood and this activity conducted in the wetter cold months has seen the pathogen spread on car tyres with soil movement.

A second major Family group of highly valued and very susceptible plants are Proteaceae including: *Hakea; Banksia; Grevillea; Dryandra; Isopogon;* and *Petrophile*. The other family severely affected are Xanthoraceae (grass trees). These plant families provide the nesting sites as well as providing nectar and pollen for the prolific bird life and small marsupials.

Public access increases the risk of introducing plant pathogens unless managed appropriately.

Evidence of dieback

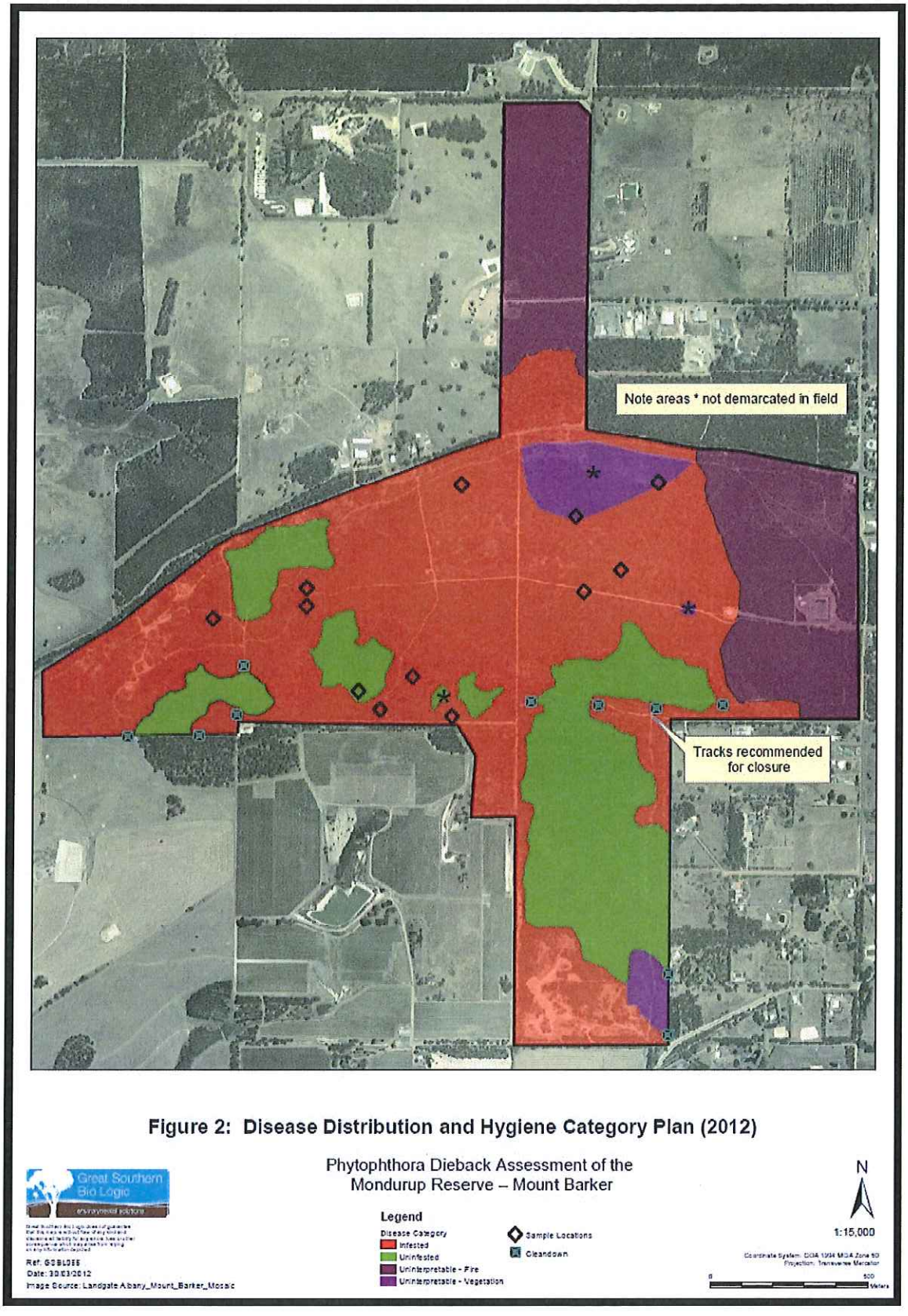


Figure 2: Disease Distribution and Hygiene Category Plan (2012)

Map 2: This map was prepared by Jeremy Spencer from Great Southern Bio Logic who was engaged in February 2012 to undertake a Phytophthora dieback disease distribution mapping and hygiene plan for the Mondurup Reserve.

Canker

Canker is a vegetative disease caused by fungi or, to a lesser degree bacteria, which expresses as death of twigs and branches. Necrosis of leaves and limbs with canker lesions destroy the cambium layer, resulting in death of single branches or, in some instances, almost complete crown decline. Canker may result in the collapse of entire communities (Crane, et al, unpublished).

Aerial canker appears to be well established in the western end of the main reserve as expressed by staged and partial deaths of plants, particularly *Banksia formosa*, which appears especially susceptible.

In the past, disease typically associated with these fungi were considered to be minor and were not usually lethal. However worldwide canker incidence appears to be increasing, together its impact upon plant species, as it appears to becoming more virulent. It may be that environmental changes are influencing either the virulence of the disease, the capacity of the hosts to respond or a combination of factors is at play.

The DEC are currently researching canker disease biology, expression in relation to climate and mitigation techniques, as this has the potential to affect large areas of native vegetation, including threatened flora (Crane, et al, unpublished).

3.1.3. Feral and pest Animals

3.1.3.1 Fox
Evidence of the presence of foxes in the reserve can be seen from scats and kills. Steps must be taken to control or eradicate foxes, as they are a threat to many of the native fauna in the reserve of a vulnerable size such as the Quenda, Western Brush Wallaby young, possums and birds.

3.1.3.2. Rabbit
Rabbits are a threatening process by altering native fauna habitat and grazing on seedlings. Evidence of rabbit presence can be seen in diggings and scats.

3.1.3.3. Feral and straying Cats
Due to the close proximately to town the likelihood of straying or dumped cats and kittens is inevitable and are a threat to native fauna if left unchecked.

3.1.3.4. Wandering dogs
Due to the close proximately to town wandering dogs are a threat to native fauna.

3.2. Frequent Fire
Inappropriate fire regimes can adversely affect flora and fauna populations. The flora and fauna of the region have adapted to particular fire regimes (frequency, intensity and season) and so they can be threatened if the fire regime is inappropriate for the particular species. For example, species that are adapted to longer cycles between fire events can be eliminated by frequent high intensity fire (Danks 2004). On the other hand long periods without fire can lead to senescence, reduced regeneration and increased vulnerability to wildfire. There is not a fire regime that is suitable to all species but large scale, intense fires present the greatest threat to species due to fragmentation of the landscape.


Dryandra preissii germinating after fire

3.3. Rubbish dumping
Due to the close proximately to town illegal dumping of rubbish is a problem visually and can threaten fauna and flora populations by such things as eg choking on plastic, changing food sources, introduction of weeds and displacing native vegetation.

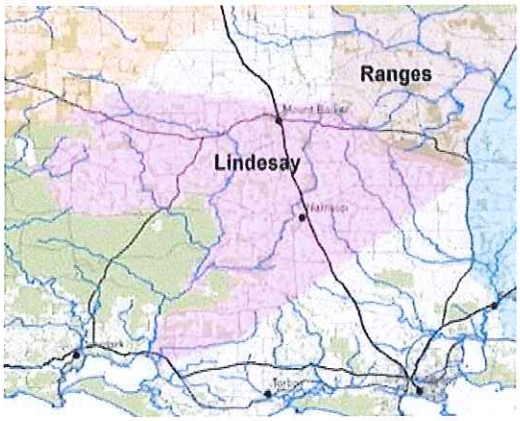
3.4. Access
There are 30 access points to the reserve which make controlling illegal activity difficult. Unrestricted access is a threatening process as vehicle movement is resulting in the spread of plant diseases through soil movement, weed invasion and the destruction of habitat. Currently vehicle activities include (but are not limited to): illegal fire wood collecting; rubbish dumping; recreational four wheel driving and motor bike riding.

3.5. Signage
There is currently no signage to make the public aware of what is acceptable or unacceptable behaviour in the reserve. Without signage the reserve does not have significance to members of the public. Appropriate signage would enable users to make informed decisions about acceptable activities within the reserve and provide information regarding the reserve's vested purpose (conservation).

3.6. Ecological connectivity

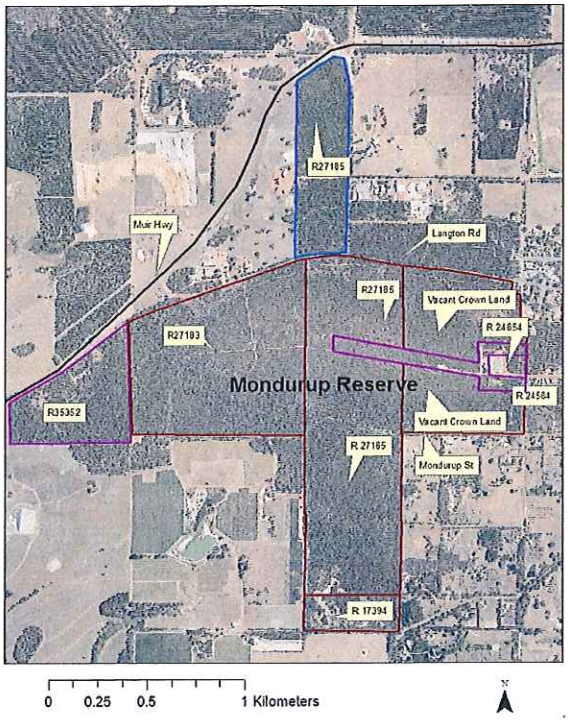
The fragmentation of native ecosystems has impacted on the ecological function of remnant vegetation in the Shire through loss of habitat and increased isolation. The clearing of large areas of native vegetation within the district has isolated many populations of native fauna, in particular the Western Brush Wallaby and many small bird species that do not fly over cleared country. This can prevent the exchange of genetics between breeding populations which will affect their long term viability and makes them vulnerable to unpredictable events, such as wildfire. Fragmentation limits the ability of fauna to alter or expand their range in the event of climate change.

The preservation of the bushland in this reserve fits in with the South Coast Macro Corridor Program and Gondwana Link. These programs aim to improve the long-term future of native fauna within National Parks and Nature Reserves, by maintaining existing bush corridors and generally improving bushland connections between major protected areas like the Fitzgerald River, Stirling Range, Porongurup and Mount Lindesay National Parks.



Mondurup Reserve is significant size of 210 hectares and is comprised of two Reserves managed by the Shire and four adjoining reserves:

- R35352 (25.5ha) is managed by Main Roads WA.
  This reserve is used for gravel and other road construction requirements but is generally in good condition and adds value to the Mondurup Reserve. This reserve is shown on *Map 3* in purple.
- The C Class Reserve (R17394), south of R27185, is managed by the Department for Regional Development and Lands (DoRDL) for gravel.
- Reserve 24584 is managed by the Minister for Water Resources for the purpose of a Water.
- Reserve R27185 (27ha) is located to the north of Mondurup Reserve but is dissected by Langton Road and McDonald Avenue (shown in blue on *Map 3*). While it is not part of this Management Plan, it also compliments the conservation value of Mondurup Reserve.



Map 3 showing reserve locations

The combined management of the Main Roads Reserve (R35352) and the DoRDL Reserve (R27185) with the Mondurup Reserve will be considered depending on the agreement with the land managers.

3.7 Climate Change

There is a strong relationship between climate and patterns of species distribution. Over the last million years or so the climate of the south west has been highly variable, experiencing unusually turbulent climatic fluctuations associated with increased aridity which lead to isolation and colonisation of plant communities. The process forced many plants into small fragmented populations some of which remain today and others that either went extinct or evolved ways to cope. Those that evolved may be able to adapt or have flexibility in their response to climate change but those species that have evolved little will have limited capacity to adapt.

Where organisms are able to persist in the face of a changing climate there are likely to be either contractions or expansions in range so long as dispersal is facilitated. Where dispersal is not possible and habitat parameters are no longer suitable, extinction is the ultimate fate (Gilfillan, 2009).

Changes to temperature and rainfall regimes over the past 20 years, suggests increases in minimum temperatures and declining mean annual rainfall in the region (BoM 2003 The Greenhouse Effect and Climate Change). These trends will be exacerbated by further increases in minimum temperature, decreases in rainfall, increased storm activity and frequency of extreme fire weather days as predicted under climate change scenarios. These may impact on remnant vegetation within the region and present some management challenges, particularly in relation to hydrology and fire management.

Further investigation is required to help ascertain potential climate change impacts on the nature conservation values of the reserve.

4.0 Key Management Issues and Strategies

4.1. Management Vision

The following vision is to be administered by the Shire of Plantagenet and is a guide for the long term preferred outcome of the management of the Mondurup Reserve. Ideally a committee of the Council will be established to oversee the management of the Reserve.

*To provide a Reserve, that will **conserve** the biodiversity and landscape of the area while allowing public access for **educational** and suitable **recreational** activities.*

4.2. Key Management Issues

Major management issues have been identified with specific objectives and strategies drawn up to cover each item. Any data or information collected from the strategies will be compiled in a data base created and maintained by the Shire. This information will be made available to interested parties and aid in the ongoing management of the Reserve.

4.2.1 Understanding the Physical Environment

4.2.1.1. Biogeographical Context

The importance of the Reserve for biodiversity conservation is not static and may grow over time due to the adverse effects of land management practices on remnant native ecosystems throughout the district. Many lessons will also be learnt from how these remnants in other localities respond to management actions and/or threatening processes.

Objective:

Improve the understanding of the distribution of those native ecosystems found within the reserve and their bioregional status, noting limiting factors to their distribution and abundance, ecological relationships between species groups and the effects of threatening processes in other localities.

Strategies:

1. Liaise with Department of Environment and Conservation (DEC) including Land for Wildlife to identify areas of similar ecosystems within the district.
2. Visit these ecosystems to note their similarity within the landscape.
3. Gather relevant information on the management of these ecosystems especially in regard to countering threatening processes.

4.2.1.2 The importance of geology in the distribution of biota

Objective:
Map simple geomorphic changes within the reserve as soon as possible to aid in the demarcation of ecological zones.

Strategies:
1. Complete a detailed study of the geology of the reserve for a more detailed interpretation of plant and animal communities.
2. Identify basic landforms and soil types from aerial photos and existing data.
3. Consult with a hydrologist at the Department of Agriculture and Food WA (DAFWA) for detailed geological information in order to obtain more complete data on subsurface structures.
4. Complete a geologic report for the Reserve for future education and for visitor interpretation and appreciation plans.

4.2.1.3. Aboriginal /European Land use

Objective:
Identify and protect significant Aboriginal/European cultural sites.

Strategies:
1. Liaise with local indigenous groups and historians to identify any sites of significance.
2. Integrate traditional knowledge with land management practices in the Reserve.
3. Protect the identified sites.
4. Ensure future uses recognises the needs of traditional owners.
5. Provide interpretive signage where appropriate.

4.2.2. Protecting Biodiversity Values

4.2.2.1. Native Vegetation

Objective:
To maintain the extent and biodiversity of native vegetation communities

Strategies:
1. Survey and map vegetation communities within the Reserve and their association with soil types.
2. Conduct flora surveys in each vegetation community.
3. Collect samples for the Herbarium for registration with WAHERB.

4.2.2.2. Flora Species Values

Objective:
To maintain viable populations of existing native flora species within the Reserve.

Strategies:
1. Survey the Reserve to record the distribution, and abundance of flora species.
2. Research the habit and requirements of listed threatened species.
3. Manage populations of flora species of conservation significance in consultation with DEC, flora recovery team and in accordance with agreed recovery actions and threat abatement plans.
4. Monitor the effectiveness of management actions in relation to threatened species conservation.

4.2.2.3. Fauna Species Values

Objective:
To maintain viable populations of existing native fauna species within the Reserve.

Strategies:
1. Conduct Fauna Surveys on the Reserve to record the distribution and abundance of species.
2. Determine if any fauna species are of particular conservation significance and the key habitats required for their protection.
3. Implement threat abatement strategies, such as predator control.

4.3. Controlling Threatening Processes

4.3.1. Plant Diseases

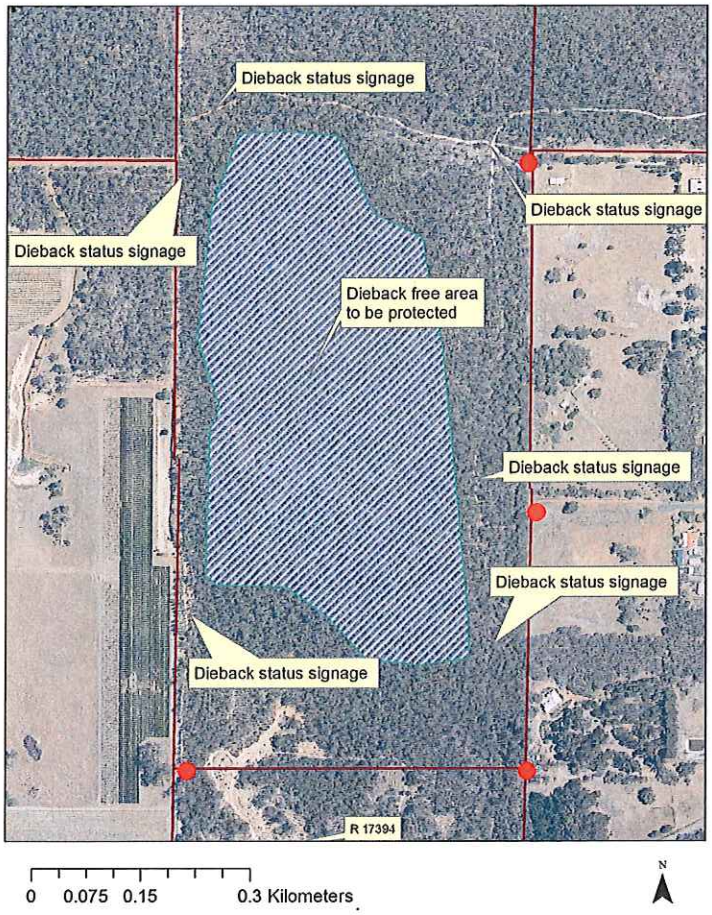
Current Situation
Dieback: There is evidence of dieback (*Phytophthora cinnamomi.*) in the reserve which is situated in a high rainfall area making the spread of the pathogen likely.

There is approximately 20ha of Dieback free bushland within the Reserve that has been determined to be protectable. As this area is surrounded by tracks it is proposed to erect signage at entry points of the tracks informing users that this area is Dieback free and to remain on tracks to prevent the spread of Dieback when soil moisture is high.

Objectives:
1. *Prevent and minimise the introduction and spread of dieback fungus and other plant pathogens into the reserve.*
2. *Protect populations of threatened flora from plant disease.*

Strategies:
1. Restrict access to dieback protectable areas.
2. Close internal tracks that traverse infected and uninfected areas and rehabilitate where possible with the exception of firebreaks.
3. For tracks required for emergency access install signage about the disease status and why the need to clean down before entering dieback free areas.
4. Install signage to indicate disease status at the edge of protectable areas.

5. Assess track conditions in or near protectable areas to determine whether track upgrades can reduce the soil or water movement. Where necessary upgrade the condition of the tracks to prevent avoidable soil movement.
6. Avoid undertaking works when soil moisture is high and soil is likely to adhere to tyres, machinery and soles where possible.
7. Ensure vehicle and machinery hygiene protocols are implemented to reduce soil and seed movement.
8. Erect signage at access points to indicate dieback status i.e. the reserve is mainly infested but there are significant areas that can be protected.
9. Address methods to prevent the offsite spread of the pathogen.
10. Ensure any material brought into the reserve's protectable area are clean (eg soil, gravel, equipment) and that hygiene procedures are planned for and followed during soil disturbance activities.
11. Undertake strategic phosphate treatment of disease fronts in particular protectable areas to reduce the front movement.
12. Provide users with the hygiene map and management guidelines for operations within the reserve eg fire brigade, Friends of Mondurup Reserve, Water Corp.
13. Create awareness of the impacts and control of plant disease through interpretative signage, communication and education.
14. Display required hygiene practices in designated areas.
15. Carry out monitoring and review disease mapping on a regular basis.
16. Use phosphite, where appropriate, to protect populations of threatened flora from *Phytophthora* infection.
17. Install and maintain foot baths in sensitive areas to prevent the introduction and spread of infection.



Map 4 Proposed location of signage to protect the Dieback free area

4.3.2. Invasive Species

4.3.2.1. Introduced Plants

The Current Situation

There is very little weed invasion in the Reserve, except at the very edge of the firebreaks along the reserve boundaries.

Abandoned gravel pits have not been restored to native bush at the conclusion of use and this has led to the invasion of exotic plants. These can be found on the south western boundary on Omrah St and off Muir Hwy on the northern side of the reserve.

Objective:

To control, and where possible, eradicate introduced plants using methods that have minimal impact on native flora, fauna and natural processes.

Strategies:

1. Identify major weed species that could potentially threaten native flora, fauna and natural processes.
2. Map areas affected by weed infestations.
3. Liaise with Reserve neighbours to minimise edge effects.
4. Liaise with DAFWA, DEC and WICC to plan for weed control and eradication.
5. Remove weed populations before they displace more native bushland.

4.3.2.2. Feral Animals

Current Situation

Fox - Evidence that there are foxes present on the reserve can be seen from scats.
Rabbit - There is evidence of rabbit activity and burrows. The population varies due to calici virus kill in spring, action to control those surviving should be carried out before numbers increase again.
Feral Cat - Although no feral cats have been seen during preliminary surveys, it can be surmised that they are present, due to the numbers found in neighbouring areas.

Objective:

To control, and where possible, eradicate feral animals using methods that have minimal impact on native flora, fauna and natural processes.

Strategies:

1. Liaise with the DAFWA and DEC to prepare a plan for feral animal eradication.
2. Map or record feral animal activity.
3. Liaise with the Community to participate in the coordinated Baiting Program 'Red Card for the Red Fox'.
4. Conduct fauna surveys to monitor effect on wildlife numbers.

4.4. Rehabilitation of Disturbed Lands

All rehabilitation projects will be planned to restore the natural habitats and landscape values of the area.

Strategies:

1. Restore disturbed lands i.e. abandoned gravel pits and rubbish dump sites.
2. Control weeds in these sites.

3. Plant locally occurring native plants and direct seed where possible.

4.4.1. Undisturbed and High Conservation Areas

Objectives:

1. To monitor for weed and pathogen invasion.
2. To control or remove invasive weed species.

Strategies:

1. Conduct regular surveys for weeds and disease.
2. Map spread of any weed or pathogen invasion.
3. Remove invasive weed species, and conduct appropriate control for other weed species.

4.5. Fire Management

The management of fire can be a complex and often a controversial issue. The achievement of many of the objectives of management depends to a large degree on careful planning.

Current Situation

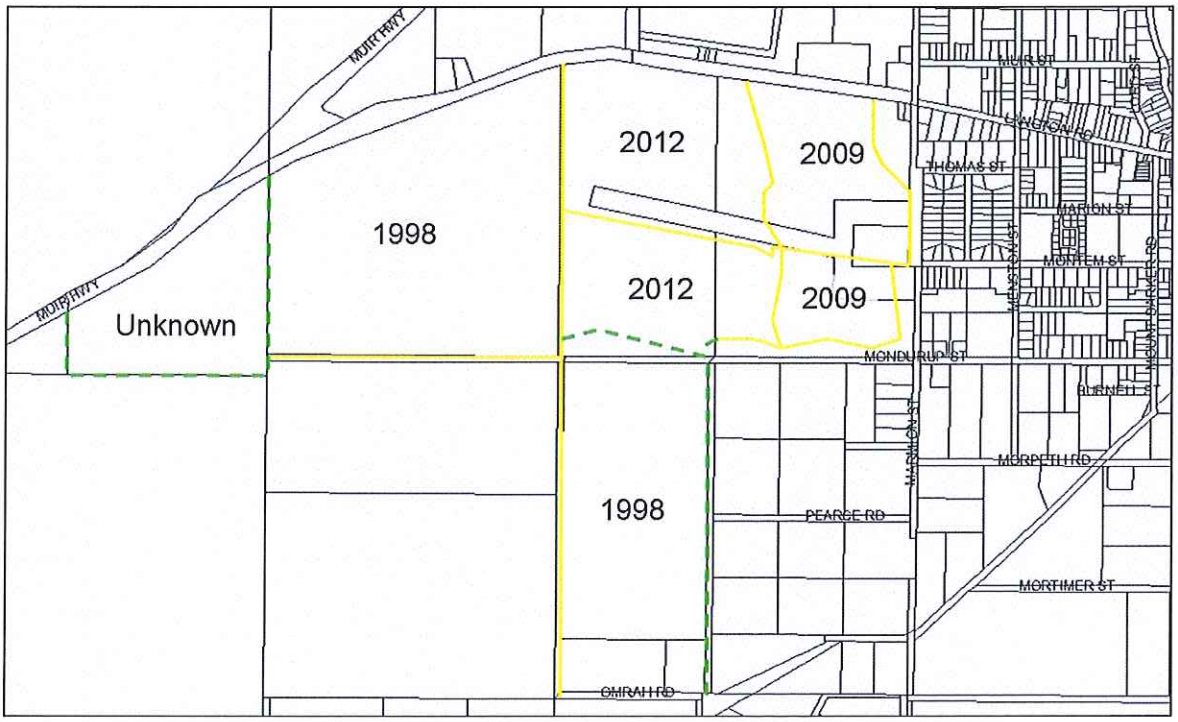
Several flora species of conservation significance such as the Hakea species are obligate seeders and thus susceptible to too frequent fires. This prevents them from flowering and setting viable seed under favourable environmental conditions.
Further work is required to determine the history of fire on the reserve and the role of fire, both in its intensity and frequency on the life cycles of flora species especially those of conservation significance.

Objectives:

1. *Protect the floristic associations that are susceptible to fire damage*
2. *Reduce risk of fire damage to the reserve and neighbouring properties.*
3. *Reduce fuel build up in a manner that will not endanger fauna species or key fauna habitats.*
4. *Protect visitors to the Reserve.*
5. *Conform to all current FESA and Shire regulations.*

Strategies:

1. Liaise with neighbours, local fire brigade and DEC to regarding fire management.
2. Investigate alternative strategies to burning for fuel reduction.
3. Develop a burn plan for the Reserve.
4. Develop a fire management plan.



Map 5 Known fuel ages of Mondurup Reserve

4.6 Maintaining and Improving Ecological Connectivity

Current Situation
This particular reserve will become part of the proposed 'Lindesay Link Corridor' designed to connect the Porongurup National Park and the Mount Lindesay National Park.

Revegetation and rehabilitation works will further improve connectivity of the reserve with other patches of remnant vegetation such as water reserves, mining reserves, river corridors and DEC lands.

Objective:
To identify existing corridors and their use by different fauna groups and opportunities to enhance conservation values by providing or enhancing ecological linkages between the Mondurup Reserve with nearby National Parks and other remnant native bushland.

Strategies:
1. To work with WICC, neighbours and DEC to establish and ensure the protection of flora and fauna in nearby corridors linking the Reserve to other bushlands.
2. Encourage biological surveys of remnant vegetation to assist with revegetation and management programs.
3. Conduct an avian fauna survey with Albany Birdwatchers group.
4. Provide interpretation and education to the community on the conservation values of natural corridors and their protection.
5. Conduct regular fauna surveys, initially by sight (sand traps and spore).

5.0 Public Access and Interpretation Strategies

5.1. Key Objectives

The primary purpose of the Reserve is the conservation the natural biodiversity within the landscape. Its purpose is also for the enjoyment of and education about the natural environmental. Prominent and active community education and interpretation are key management strategies that will assist in the protection and management of the Reserve.

The principles of the Mondurup Management Plan allows for a balance in visitor usage while incurring minimum impact to the fauna, flora and landscape.

Objectives:
To facilitate appreciation, education and research by provisions of access compatible with other conservation objectives in the plan.

Strategies:
1. Encourage research, educational activities and visits by interest groups.
2. Encourage recreational activities that have minimal impact on the environment.
3. Provide designated parking areas for visitors' safety and the conservation of bushland.
4. Encourage visitor access but restrict to non susceptible dieback areas.
5. Encourage visits by students from the Mount Barker Community College and surrounding educational institutions to improve their knowledge of the environment and conservation issues.
6. Commercial activities should not be permitted within the Reserve, however, appropriate activities could be considered for approval such as apiarists, seed collection and ecotourism ventures.

5.2 Visitor Facilities

At present, there are no visitor facilities, apart from tracks. Any new facilities can only be constructed as funds become available. Additional facilities that can be introduced are: strategically placed bins; 'dog bags'; picnic tables; and hygiene foot baths.

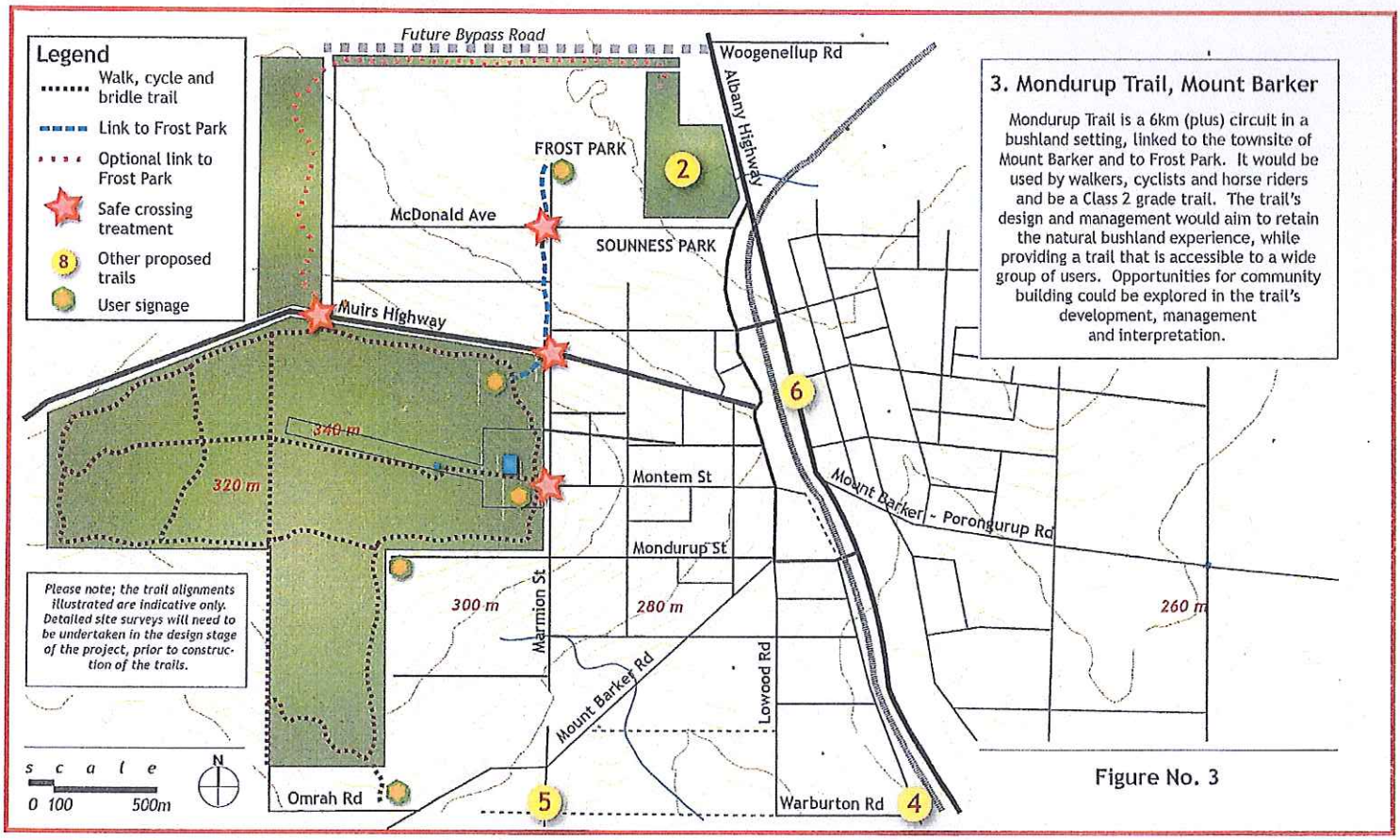
5.2.1. Information/Interpretation

Strategies:
1. An information board can be placed at the entry points showing major areas of interest.
2. Emergency exit points can be shown on this sign and other information sheets.
3. Signage to be strategically placed to discourage undesirable activities. Refer to Appendix 8 for an example of educational signs.
4. Strategic educational sign placements to include: near the Water Corporation water tank, near the Langton Road layby, Mondurup Street and Omrah Road entrances and Langton Road by the gate bordering R27183 and R27185.
5. Brochures giving information on each of the suggested walks can be compiled and updated regularly.
6. Other brochures covering flora, fauna etc. can be planned for distribution in the future.
7. Detailed interpretive plaques can be placed along walk trails with plant names and other interesting information.

5.2.2. Walk Trails

Strategies:

1. Refer to the Shire Trails Master Plan and Trails Development Plan for Mondurup and Tower Hill Trails.
2. Develop a system of walk trails to showcase the different vegetation types, geology, and wildflowers.
3. Use existing firebreaks and tracks where possible.
4. As more areas are surveyed, expand the network along trails suitable for single file foot traffic where it can be established there will be minimum impact to the existing bush. (Kangaroo trails and board walking can be utilised for these).
5. Erect Dieback notices at the start of the trails for public education, and where needed, place footbaths for hygiene.

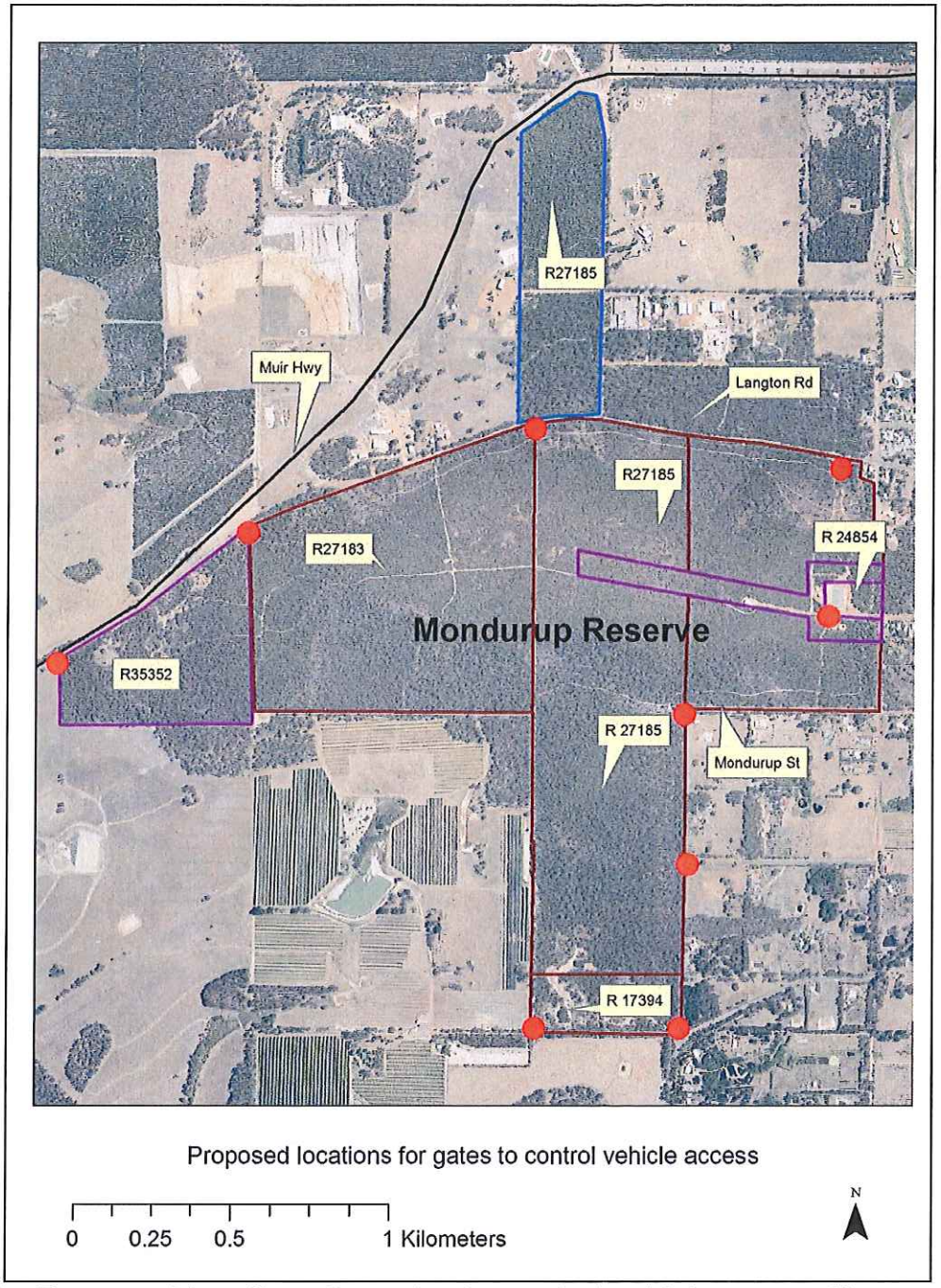


Map 6: A concept plan for the Mondurup Trail according to the Master Trails Plan for the Shire of Plantagenet

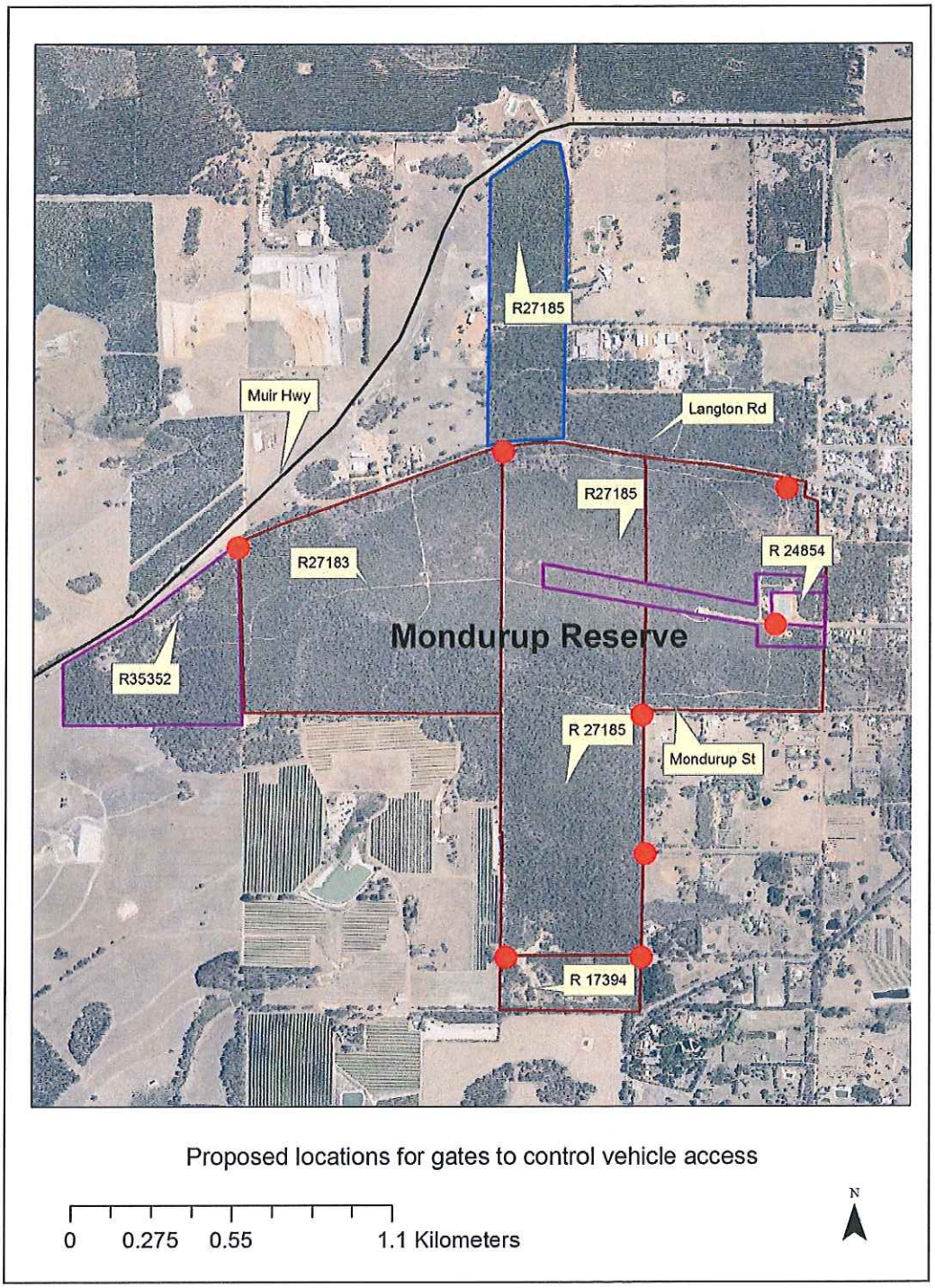
5.2.3. Vehicle Access

Strategies:

1. Public vehicle access will be restricted using gates on management tracks and boulders, bollards and other methods to deter vehicle access on tracks not required for management.
2. Only authorised persons will be allowed to use management tracks. Refer to Appendix 6 for Authorised Persons.
3. Gates across management tracks will be locked during Winter and unlocked during the fire season. Gates may be left open on High Danger and/or Catastrophic Fire Days or other times as deemed necessary.



***Map 7a*: Proposed locations for gates to control vehicle access if approval granted from Main Roads and DPI to install gates on their estate**



Map 7b*: *Proposed locations for gates to control vehicle access if approval not granted from Main Roads and DPI to install gates on their estate

5.3. Public Safety

Adequate provisions for the safety of visitors are required.

Strategies:
1. Prepare an emergency evacuation plan and display in a prominent position at entrances to the reserve.
2. Identify the nearest first aid posts: the Mount Barker Hospital, Langton Rd; and the Medical Centre, Marmion St.
3. Emergency exit sites can be indicated on the walk trails map.

6.0 Community Relations

6.1 Key Objectives

To effectively manage the Reserve consideration needs to be given to the importance of good public relations with neighbouring landowners, the general community and other stakeholders.

Objectives:
1. *To increase community enjoyment, awareness, and understanding of the values and management of the Reserve*
2. *To encourage responsible use and cooperation.*

6.2. Local Government Liaison with the Friends of Mondurup

Objectives:
1. *To keep the friends of Mondurup Reserve informed of decisions that affect reserve management.*
2. *To keep the Shire of Plantagenet staff informed of all management activities undertaken in the Reserve, and ensure all local regulations are adhered to by the Friends of Mondurup Reserve.*

Strategies:
1. Assign a member of the Friends of Mondurup Reserve to be a contact/liaison with the Plantagenet Shire for simplification of communication.
2. Encourage the Friends of Mondurup to give short presentations to the Council at regular intervals to keep them informed of the group's activities on the Reserve.

7.0 Operational Management

7.1. Key Objectives

Objectives:

1. *To maintain fire breaks to a standard required by legislation*
2. *To maintain tracks to a standard required for management*
3. *To source funding for improvements.*
4. *To carry out maintenance while adhering to hygiene standards*

7.2 Priority Management Issues

The following issues should be planned for immediate action.

7.2.1. Vehicle Access

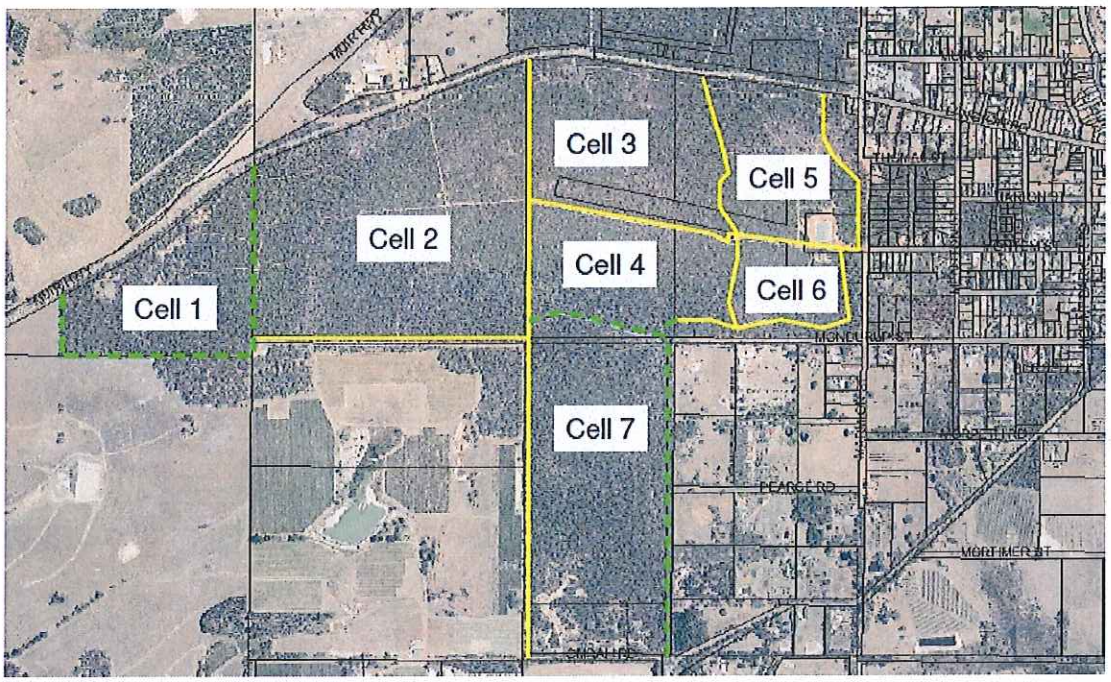
Strategies:

1. Refer to *Map 7a* and *7b* of track closures with gates to restrict access for improved management.
2. Gates to be closed and locked over the winter period.
3. Gates to be unlocked during the fire season and open when extreme or catastrophic fire warnings or when deemed necessary.
4. Restrict access using the most appropriate methods.
5. Maintain tracks using herbicide rather than grader/slasher where appropriate and required.

7.2.2. Fire Breaks and fire risk management

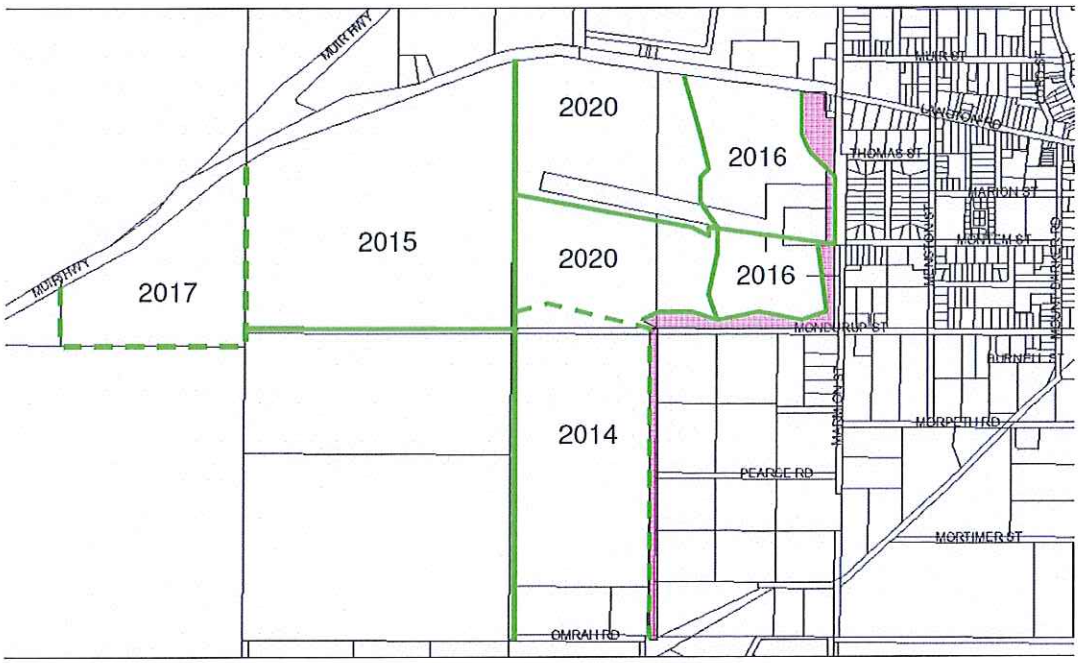
Strategies:

1. Establish a fire management plan including access roads for fire management and identify areas of known disease.
2. Upgrade firebreaks where appropriate and required.
3. Reserve to be managed for fire in 7 cells with strategic firebreaks maintained (refer to Map 8 for the placement of strategic firebreaks).
4. Eastern buffer strips adjacent to private property to be burnt rather than slashed to reduce fuel load. Refer to *Map 9.*
5. A Burn plan be prepared based on an 8 year rotation Refer to *Map 9.*
6. Maintain firebreaks with herbicide use to avoid grading which disturbs rocks making walk trails difficult for users.
7. Plan for future access road/management tracks to replace tracks through sensitive areas.



Mondurup Reserve Firebreak Network and Cell Map
Existing (Maintained Through Chemical Spraying)
Requires Upgrade (Machinery Required)

Map 8 showing locations of firebreaks to be maintained that determine the fire management cells



Mondurup Reserve Burn Plan – Burn Rotation 8 Year Cycle (July 2012)

Townsite Buffer Zone – Burnt on a Short (5 Year) Rotation - Next Due 2013

Map 9 Burn rotations of the cells with townsite buffer burn zone

7.2.3. Hygiene Plan

Strategies:

1. Restrict access to dieback protectable areas.
2. Close internal tracks that traverse infected and uninfected areas and rehabilitate where possible with the exception of firebreaks.
3. For tracks required for emergency access install signage about the disease status and why the need to clean down before entering dieback free areas.
4. Install signage to indicate disease status at the edge of protectable areas.
5. Assess track conditions in or near protectable areas to determine whether track upgrades can reduce the soil or water movement. Where necessary upgrade the condition of the tracks to prevent avoidable soil movement.
6. Avoid undertaking works when soil moisture is high and soil is likely to adhere to tyres, machinery and soles where possible.
7. Ensure vehicle and machinery hygiene protocols are implemented to reduce soil and seed movement.
8. Erect signage at access points to indicate dieback status i.e. the reserve is mainly infested but there are significant areas that can be protected.
9. Address methods to prevent the offsite spread of the pathogen.
10. Ensure any material brought into the reserve's protectable area are clean (eg soil, gravel, equipment) and that hygiene procedures are planned for and followed during soil disturbance activities.
11. Undertake strategic phosphate treatment of disease fronts in particular protectable areas to reduce the front movement.
12. Provide users with the hygiene map and management guidelines for operations within the reserve eg fire brigade, Friends of Mondurup Reserve, Water Corp.
13. Create awareness of the impacts and control of plant disease through interpretative signage, communication and education.
14. Display required hygiene practices in designated areas.
15. Carry out monitoring and review disease mapping on a regular basis.
16. Use phosphite, where appropriate, to protect populations of threatened flora from *Phytophthora* infection.
17. Install and maintain foot baths in sensitive areas to prevent the introduction and spread of infection.

8.0 Research & Monitoring

8.1. Friends of Mondurup

Encourage the Friends of Mondurup and other stakeholders to perform a range of monitoring tasks. This data would be compiled and added to a database of information on things such as feral animal habitation, weed infestation, bird populations, and rainfall. Future researchers visiting the Reserve would have access to this database.

Objective:

To work in collaboration with stakeholders to create a database of information that the stakeholders decide is necessary and achievable, then make this information available to the general public, various agency researchers or private consultants as the group sees fit.

Strategies:

1. Compose a short list of simple but essential monitoring tasks for the Friends group and volunteers to undertake.

2. Create a greater list of desired information that may be addressed over time, some perhaps as group projects.
3. Encourage research opportunities that will raise the profile of the Reserve, aid in funding projects, and involve the local community.
4. Investigate funding opportunities for surveys.

8.2. Other

As specific surveys will be required to be carried out according to the management plan, various educational institutions, agencies and community groups will be encouraged to participate.

Strategies:

1. Advise local schools and colleges of the opportunity for research on the Mondurup Reserve.
2. Encourage Friends and stakeholders to arrange presentations and/or field trips to schools and colleges to make them further aware of the Reserve's educational opportunities.

9.0 Plan Implementation

Objective:

To implement the strategies identified in the plan of management in order of priority.

Strategies:

1. Identify tasks in order of priority for implementation.
2. Prepare a work plan and budget for strategies. Refer to estimated Work Plan Appendix 7.
3. Implement the tasks in order of priority and/or as funds and human resources become available.
4. Review the management plan in 5 years.

10. References

Black, L., Harris, L. B. and Delor, C. P. (1992). *Reworking of Archaean and Early Proterozoic components during a progressive, Middle Proterozoic tectonothermal event in the Albany Mobile Belt, Western Australia.* Precamb. Res. Vol 59, pp 95-123.

BoM (2003) *The Greenhouse Effect and Climate Change,* Commonwealth of Australia', Bureau of Meteorology.

Department of Environment (Unpublished): *Comparison of Plant Canker Disease Impact and Climatic Variables in Proteaceae on the South Coast of Western Australia and Evaluation of Selected Fungicides as a Management Tool for Canker Control in the Declared Rare Flora Banksia verticillata and Lambertia orbifolia ssp. Orbifolia.* Colin Crane, Sarah Barrett, Bryan Shearer and Chris Dunne. Department of Environment and Conservation, Perth

Danks, A. (2004). *South Coast Biodiversity: an overview of Biodiversity Values, Threats and Conservation in the South Coast Region*, Department of Environment and Conservation, Albany.

Ferdowsian R and Greenham KJ (1992) *Integrated catchment management Upper Denmark Catchment.* Department of Agriculture, Resource Management Technical Report No. 130, Perth.

Gilfillan, S., Mitchell, P., Newell, J., Danks, A. And Comer, S. (2009) *South Coast Threatened Species and Ecological Communities Strategic Management Plan*, Department of Environment and Conservation, Albany.

Spencer, J (2012) *Phytophthora Dieback Assessment of the Mondurup Reserve – Mount Barker*, Great Southern Bio Logic, Albany.

Mercer, J. (1999).*The Wilson Inlet Catchment Compendium.* Waters and Rivers Commission and Wilson Inlet Catchment Committee
Moore J. and Wheeler J (2008) Southern Weeds and their control 2nd Edition DAFWA Bulletin 4744

Newbey, K. R. (1985). *An Introduction to the Geology of the Stirling Range - Ravensthorpe Area.* Compiled for the Jerramungup Cell of the Priority Country Areas Program

11. Appendices

Appendix 1: Vegetation Regions

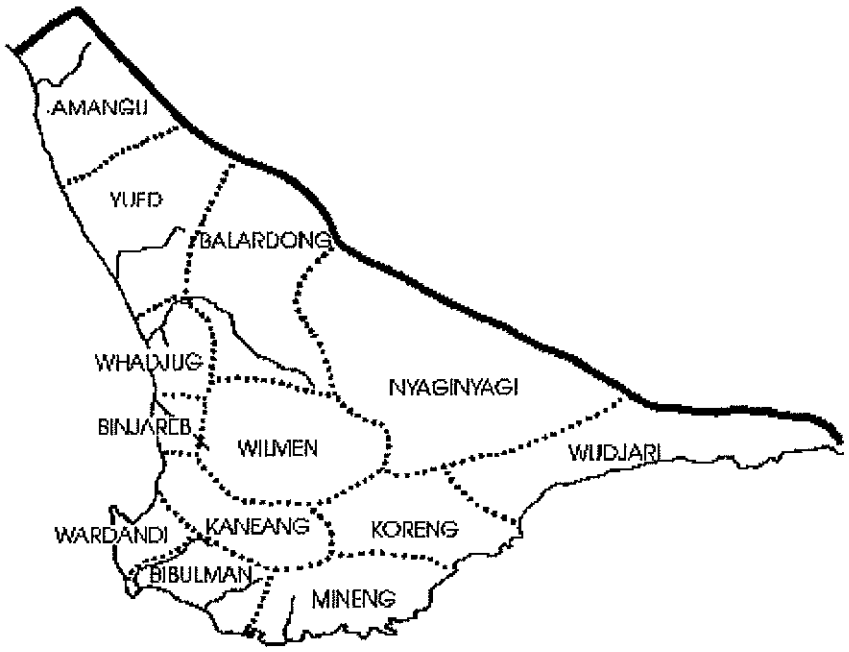
IBRA Region - Jarrah Forest
Description:

Duricrusted plateau of Yilgarn Craton characterised by Jarrah/Marri forest on laterite gravels and, in the eastern part, by Marri/Wandoo woodlands on clayey soils. Eluvial and alluvial deposits support Agonis shrub lands. In areas of Mesozoic sediments, Jarrah forest occurs in a mosaic with a variety of species-rich shrub lands.

IBRA Region - Warren
Description:

Dissected undulating country of the Leeuwin Complex and *Albany Orogen* with loamy soils supporting Karri forest, laterites supporting Jarrah/Marri forest, *leached sandy soils in depressions and plains supporting paperbark/sedge swamps,* and Holocene marine dunes with *Agonis flexuosa* woodlands.

Appendix 2: Noongar peoples



Appendix 3: Flora likely to occur in the reserve

Plant Family	Species
ADIANTACEAE	*Adiantum aethiopicum*
ANTHERICACEAE	*Johnsonia acaulis* *Johnsonia lupulina*
APIACEAE	*Eryngium pinnatifidum* *Pentapeltis silvatica* *Xanthosia rotundifolia*
ASPARAGACEAE	*Lomondra integra* *Lomondra purpurea*
ASTERACEAE	*Craspedia glauca* *Senecio var. pieridoides* *Trichocline spathulata*
CASUARINACEAE	*Allocasuarina decussata* *Allocasuarina fraseriana* *Allocasuarina humilus*
CYCADACEAE	*Macrozamia riedlei*
CYPERACEAE	*Cyathochaeta azvenacea* *Lepidosperma squamatum* *Mesomelaena uncinata* *Mesomelaena tetragona* *Schoenus curvifolius* *Tetraria octandra*
DASYPOGONACEAE	*Calectasia grandiflora* *Dasypogon bromeliifolius* *Kingia australis*
DILLENIACEAE	*Hibbertia amplexicaulis* *Hibbertia depressa* *Hibbertia gracilipes* *Hibbertia microphylla* *Hibbertia pilosa*
DROSERACEAE	*Drosera marcrantha* *Drosera menziesii* *Drosera stolonifera* *Drosera sp*
ELAEOCARPACEAE	*Platytheca verticillata* *Tetratheca affinis*
ERICACEAE	*Andersonia longifolia* *Andersonia caerulea* *Andersonia simplex* *Astroloma drummondii* *Astroloma pallidum*

	Cosmelia rubra *Leucopogon australis* *Leucopogon concinnus* *Leucopogon glabellus* *Leucopogon ovalifolius* *Leucopogon oxycedrus* *Leucopogon affin ovalifolius* *Leucopogon revolutus* *Leucopogon verticillatus* *Lysinema ciliatum*
FABACEAE	*Acacia browniana* *Acacia divergens* *Acacia drummondii subsp drummondii* *Acacia extensa* *Acacia pilosa* *Acacia myrtifolia* *Acacia pentadenia* *Acacia pulchella* *Acacia triptycha* *Albizzia lopantha* *Bossiaea linophylla* *Bossiaea ornata* *Brachysema praemorsum* *Daviesia alternifolia* *Daviesia angulata* *Gastrolobium bilobum* *Gastrolobium brownii* *Gastrolobium forestii* *Gompholobium knightianum* *Gompholobium ovatum* *Gompholobium scabrum* *Gompholobium venustum* *Hardenbergia comptoniana* *Hovea chorizemifolia* *Hovea trisperma* *Isotropis cuneifolia* *Jacksonia spinosa* *Kennedia coccinea* *Kennedia prostrata* *Pultenaea reticulate* *Sphaerolobium alatum* *Sphaerolobium medium* *Viminaria juncea*
GRAMINAE	*Amphipogon sp.* *Danthonia caespitosa*

GOODENIACEAE	*Dampiera alata* *Dampiera linearis* *Scaevola striata*
HAEMODORACEAE	*Anigozanthos bicolor* *Anigozanthos flavidus* *Anigozanthos preisii* *Conostylis aculeate* *Conostylis setigera subsp setigera* *Haemodorum spicatum*
HEMEROCALLIDACEAE	*Agrostocrinum scabrum* *Johnsonia lupilina* *Stypandra impricata*
IRADACEAE	*Patersonia occidentalis*
LAMIACEAE	*Hemiandra pungens* *Hemigenia rigida*
LINDSAEACEAE	*Lindsaea linearis* *Pteridium esculentum*
LOBELIACEAE	*Isotoma hypocrateriformis*
LORANTHACEAE	*Nuytsia floribunda*
MALVACEAE	*Rulingia corylifolia* *Thomasia triloba*
MYRTACEAE	*Agonis ciliatum* *Agonis marginata* *Agonis undulata* *Astartea fascicularis* *Beaufortia andisandra* *Beaufortia decussata* *Calothamnus sp.* *Calythrix asperula* *Calythrix flavescens* *Darwinia citiodora* *Darwinia vestita* *Eucalyptus calophylla* *Eucalyptus decipiens* *Eucalyptus doratoxylon* *Eucalyptus marginata* *Hypocalymma strictum* *Kunzea recurva* *Kunzea vestita* *Leptospermum crassipes* *Melaleuca lateritia* *Melaleuca pubescens* *Melaleuca striata* *Melaleuca thymoides*

	Taxandria linearifolia
	Taxandria parviceps
OLACACEAE	*Olax phyllanthi*
ORCHIDACEAE	*Caladenia arrecta*
	Caladenia aphylla
	Caladenia cairnsiana
	Caladenia discoidea
	Caladenia falcate
	Caledenia flava subsp flava
	Caledenia heberleana
	Caladenia lobata
	Caladenia longicauda subsp longicauda
	Caladenia pectinata
	Caladenia plicata
	Caladenia polycroma
	Caladenia macrasylis
	Caladenia reptans subsp reptans
	Cyanicula servicea
	Diuris corymbosa
	Diuris longifolia
	Diuris laxifloera
	Elythranthera bruins
	Elythranthera emarginata
	Eriochilus dilatatus subsp dilatatus
	Leporella fimbriata
	Leptoceras menziesii
	Lypernthus serratus
	Microtis media subsp media
	Praecoxenthus aphyllus
	Prasophyllum brownii
	Prasophyllum fimbria
	Prasophyllum parvifolium
	Pterostylis barbata
	Pterostylis dilatata
	Pterostylis recurva
	Pterostylis vittata
	Pyrorchris nigrans
	Thelymitra benthamiana
PITTOSPORACEAE	*Billardiera heterophylla*
	Billardiera variifolia
POLYGALACEAE	*Comesperma confertum*
	Comesperma virgatum
POLYPODIACEAE	*Pteridium esculentum*
PROTEACEAE	*Adenanthos cuneatus*

	Adenanthos obovatus *Banksia grandis* *Banksia gardneri var gardneri* *Banksia occidentalis* *Banksia sphaerocarpa var latifolia* *Dryandra armata subsp armata* *Dryandra formosa* *Dryandra lindleyana subsp lindleyana* *Dryandra preisii* *Dryandra porrecta* *Franklandia fucifolia* *Grevillea depauperata* *Grevillea pulchella* *Grevillea quercifolia* *Grevillea tenuiflora* *Grevillea trifida* *Hakea amplexicaulis* *Hakea ceratophylla* *Hakea corymbosa* *Hakea florida* *Hakea lissocarpa* *Hakea nitida* *Hakea marginata* *Hakea ruscifolia* *Hakea trifurcata* *Hakea undulata* *Hakea varia* *Isopogon spp* *Persoonia elliptica* *Persoonia microcarpa* *Petrophile diversifolia* *Petrophile longifolia* *Petrophile serruriae* *Synaphea polymorpha* *Synaphea petiolaris* *Synaphea sp.*
RESTIONACEAE	*Anarthria scabra* *Loxocarya flexuosa* *Anarthria proliferus*
RHAMNACEAE	*Trymalium ledifolium* *Trymalium spathulatum*
SANTALACEAE	*Leptomeria cunninghamii*
SAPINDACEAE	*Dodonaea attenuata*
STYLIDIACEAE	*Stylidium sp*
THYMELAEACEAE	*Pimelea sp.*

XANTHORRHOEACEAE	*Xanthorrhoea gracilis* *Xanthorrhoea preissii*

Appendix 4: Fauna lists

List of mammals likely to occur in the reserve.
indicates introduced species

Common name	Scientific name
Black Rat *	*Rattus rattus*
Bush Rat	*Rattus fuscipes*
Brush tailed Phascogale	*Phascogale tapoatafa*
Cat *	*Felus catus*
Common Brushtail Possum	*Trichosurus vulpecula*
Common Dunnart	*Sminthopsis murina*
Common Ringtail Possum	*Pseudocheirus peregrinus*
Dog *	*Canis familiaris*
Fox *	*Vulpes vulpes*
Gould's Wattled Bat	*Chalinolobus gouldii*
Great Pipiostrelle	*Pipistrellus tasmaniensis*
Grey bellied Dunnart	*Smithsopsis grisoventer*
Honey-Possum	*Tarsipes rostratus*
House Mouse *	*Mus musculus*
King River Eptesicus	*Eptesicus regulus*
Lesser Long-eared Bat	*Nyctophilus geoffroyi*
Mardo	*Antechinus flavipes*
Rabbit *	*Oryctolagus cuniculus*
Southern Brown Bandicoot	*Isoodon obesulus*
Water Rat	*Hydromys chryogaster*
Western Brush Wallaby	*Macropus irma*
Western Grey Kangaroo	*Macropus fulignosus*
Western Pygmy Possum	*Cercartetus concinnus*

List of amphibian species likely to occur in the reserve.

Common Name	Scientific Name
Slender Tree Frog	*Litoria adelaidensis*
Green and Gold Tree Frog	*Litoria moorei*
Western Banjo Frog	*Limnodynastes dorsalis*
Burrowing Frog	*Heleioporus inornatus*
Moaning Frog	*Heleioporus eyeri*
Gunther's Toadlet	*Psuedophrne guntheri*
No common name	*Crinia georgiana*
No common name	*Geocrinia leai*
Pobblebonk Frog	*Limnodynastes dorsalis*
Quacking Frog	*Crinia georgiana*

List of avian species likely to occur in the reserve.

Common Name	Scientific Name
Australian Kestrel	*Falco cenchroides*
Australian Magpie	*Gymnorhina tibicen*
Australian Magpie-lark	*Grallina cyanoleuca*
Australian Owlet-nightjar	*Aegotheles cristatus*
Australian Raven	*Corvus coronoides*
Australian Shell Duck	*Tadorna tadornoides*
Baudin's Cockatoo	*Calyptorhynchus baudinii*
Black-faced Cuckoo-shrike	*Coracina noveahollandiae*
Boo-book Owl	*Ninox noveaseelandiae*
Bronzewing Pigeon	*Phaps chalcoptera*
Brown Falcon	*Falco berigora*
Brown Goshawk	*Accipter fasciatus*
Brown Honeyeater	*Lichmera indistincta*
Brush Bronzewing	*Phaps elegans*
Carnaby's Cockatoo	*Calyptorhynchus latirostris*
Darter	*Anhinga melanogaster*
Dusky Moorhen	*Gallinula tenebrosa*
Dusky Woodswallow	*Artamus cyanopterus*
Elegant Parrot	*Neophema elegans*
Emu	*Dromaius noveahollandiae*
Golden Whistler	*Pachycephela pectoralis*
Grey Currawong	*Strepera versicolor*
Grey Fantail	*Rhipidura fulignosa*
Grey Shrike-thrush	*Colluricincla harmonica*
Grey Teal	*Anas gibberifrons*
Inland Thornbill	*Acanthiza apicalis*
Kookaburra	*Dacelo gigas*
Laughing Kookaburra	*Dacelo noveaguineae*
Little Eagle	*Aquila morphnoides*
Musk Duck	*Biziura lobata*
New Holland Honeyeater	*Phylidonyris noveahollandiae*
Pacific Black Duck	*Anas superciliosa*
Painted-button Quail	*Turnix varia*
Pallid Cuckoo	*Cuculus pallidus*
Port Lincoln Ringneck	*Barnardius zonarius*
Purple-crowned Lorikeet	*Glossopsitta porphyrocephala*
Red Tailed Black Cockatoo	*Calyptorhynchus banksii*
Red Wattlebird	*Anthochaera carunculata*
Red-wing Fairy Wren	*Malurus elegans*
Restless Flycatcher	*Myiagra inquieta*
Richard's Pipit	*Anthus noveaseelandiae*
Rufous Treecreeper	*Climacteris rufa*
Rufous Whistler	*Pachycephala rufinventris*
Sacred Ibis	*Threskiornis aethiopica*
Sacred Kingfisher	*Halcyon sancta*
Scarlet Robin	*Petrioca multicolor*
Shining Bronze Cuckoo	*Chrysoccyx lucidus*
Silvereye	*Zosterops lateralis*
Southern Emu Wren	*Stipiturus malachurus*
Splendid Fairy Wren	*Malurus splendens*
Spotted Pardalote	*Pardalote punctatus*
Straw-necked Ibis	*Threskiornis spinicollis*
Stubble Quail	*Coternix noveazelandiae*

Tawny Frogmouth	*Podargus strigoides*
Tree Martin	*Hirundo nigricans*
Varied Sitella	*Daphoenositta chrysoptera*
Wedge-tailed Eagle	*Aquila audax*
Welcome Swallow	*Hirundo neoxena*
Western Rosella	*Platycerus icterotis*
Western Spinebill	*Acanthorhynchus superciliosus*
Western Thornbill	*Acanthiza inornata*
Western Yellow Robin	*Eopsaltria griseogularis*
Whistling Kite	*Heliastur sphenurus*
White-breasted Robin	*Eopsaltria georgiana*
White-browed Scrub-wren	*Sericornis frontalis*
White-faced Heron	*Ardea noveahollandiae*
White-naped Honeyeater	*Melithreptus lunatus*
White-tailed Black Cockatoo	*Calyptorhynchus baudinii*
Willie Wagtail	*Rhipidura leucophrys*
Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*
Red-tailed Black Cockatoo	*Calyptorhynchus magnificus naso*
Red-capped Parrot	*Purpureicephalus spurius*
Red-capped Robin	*Petroica goodenovii*
Red-eared Firetail	*Emblema oculata*

-

List of reptile species likely to occur in the reserve.

Common Name	Scientific Name
No common name	*Ctenotus catenifer*
Bardick	*Echiopsis curta*
Black Tiger Snake	*Notechis ater occidentalis*
Blind Snake	*Ramphotphlops sp.*
Bobtail	*Tiliqua rugosa*
Bungarra	*Varanus gouldii*
Burrowing Skink	*Hemiergis peronii peronii*
Crowned Snake	*Drysdalia coronata*
Dugite	*Pseudonaja affinis affinis*
Fry's Skink	*Egernia pulchra pulchra*
King's Skink	*Egernia kingii*
Marbled Gecko	*Phyllodactylus marmoratus*
Morning Skink	*Egernia luctuosa*
Mueller's Snake	*Rhinoplocephalus bicolor*
Napoleons Skink	*Ergernia napoleonis*
New Holland Skink	*Leiolopisma trilineatum*
Oblong Turtle	*Chelodina oblonga*
Race-horse Goanna	*Varanus rosenbergi*
Red-legged Skink	*Ctenotus labillardieri*
Smith's Skink	*Egernia napoleonis*
Swamp Skink	*Ergernia luctuosa*
Tiger Snake	*Notechis scutatus occidentalis*

Appendix 5: Declared and Environmental weeds likely to occur in the reserve.

Common name	Botanical name
Arum Lily	*Zantedeschia aethiopica*
Bamboo	*Arundo donax*
Blackberry	*Rumex acetosella*
Blackberry nightshade	*Solanum nigrum*
Black Wattle	*Acacia decurrens*
Bridal Creeper	*Asparagus asparagoides*
Broom bush	*Genista sp*
Cape Weed	*Arctotheca calendula*
Cotoneaster	*Cotoneaster spp.*
Cootamundra Wattle	*Acacia baileyana*
Cudweed	*Gnaphalium calviceps*
Dock	*Rumex sp.*
Dolichos Pea	*Dipogon lignosus*
Gladioli	*Gladiolus undulatus*
Flat Weed	*Hypochaeris glabra*
Fleabane	*Conyza spp.*
Flinders Range Wattle	*Acacia iteaphylla*
Goosefoot / Fat Hen	*Chenopodium spp.*
Honeysuckle	*Lonicera japonica*
Ink Weed	*Phytolacca octandra*
Kikuyu	*Pennisetum clandestinum*
Lantana	*Lantana camara*
Pampas Grass	*Cortaderia selloana*
Paspalum	*Paspalum dilatatum*
Periwinkle	*Vinca major*
Pine Tree	*Pinus sp.*
Plantain	*Plantago sp.*
Rats Tail Grass	*Vulpia myuros*
Silver Wattle	*Acacia dealbatta*
Sweet Pittosporum	*Pittosporum undulatum*
Sydney Golden Wattle	*Acacia longifolia*
Golden Wreath Wattle	*Acacia saligna*
Taylorina	*Psoralea pinnata*
Victorian Ti-Tree	*Leptospermum laevigatum*
Water Couch	*Paspalum distichum*
Watsonia	*Watsonia bulbillifera*
Wild Oat	*Avena fatua*
Yorkshire Fog	*Holcus lanatus*

Appendix 6: Authorized Persons

Below is a list of personnel authorised to enter the Reserve with vehicles. Other people can be authorised as needed.

Name	Purpose	Organisation
Water Corporation	Access to Water Reserve	Water Corporation
Main Roads	Access to Main Roads Reserve	Main Roads
Ranger	Regulatory	Shire of Plantagenet
Community Emergency Services Manager	Regulatory, Planning	Shire of Plantagenet
Fire Crews	Fire Control, Planning	FESA, Brigades, DEC
Friends of Mondurup	Planned notified events	Friends of Mondurup
Chris Pavlovich	Check water pipe	Omrah
Bruce Macmahon Keith Smith	Seed Collectors	Greening Australia

Appendix 7: Estimated Work Plan and Budget for year 1

Activity	Funding source	budget
Design and produce signs	Wilson Inlet Catchment Committee	$2,490
Install signs • Post hole digger • Quick set concrete	Friend of Mondurup Reserve	In kind
Close tracks • Source large rocks • Machinery	Successful State NRM funding application for $2,500	$5,000
Install access gates • Design and make gate • Machinery • Post hole digger • Quick set concrete	Successful State NRM funding application for $5,000	$8,000
Hygiene survey • Engage consultant	Successful State NRM funding application for $8,900	$8,900
Burn plan	Shire of Plantagenet Community Emergency Services Manager	$3,000
Fire Management Plan	Shire of Plantagenet Community Emergency Services Manager	$7,000

Appendix 8: Example of informative signage