

## Briefing Note – Proposed Marda East Development

### Background

Southern Cross Goldfields Ltd (SXG) completed a positive Feasibility Study on the Marda Project in Western Australia in 2012. SXG is now progressing environmental and statutory approvals for the Marda East Project, including completion of a number of environmental baseline studies to inform the approvals process.

### Marda East Project Summary

The Marda East Project, which includes the Red Legs and Fiddleback (previously named Die Hardy) ore deposits (see maps at Appendix A and B) is located north east of the Marda Central project. These areas are approximately 12 ha and 33 ha in size, respectively, and are located within a project survey area of approximately 245ha. The two prospects are located adjacent to the Die Hardy Range approximately 140 km north of Southern Cross and are connected to the Bulfinch Evanston Road by 3.68 km of haul roads. The total disturbance area for the Marda East project is anticipated to be no greater than 60ha.

The prospects are on the ex-Diemals pastoral lease that is currently destocked, and is located within the Southern Cross sub-region of the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) Bioregion.

The Marda East Project will involve the development of two small pits and waste dumps, and connecting haul roads, as well as a small footprint of infrastructure including crib rooms and mining equipment hard stands. Ore from these deposits will be processed at the Marda Central processing facility, with tailings placed in the Marda Central tailings storage facility. Accordingly, no significant supporting or processing infrastructure is proposed as part of the Marda East project.

### Conservation Areas

- The Fiddleback project area currently resides within the Department of Parks and Wildlife (DPaW) Act Section 5(1)(h) proposed 'Conservation and Mining Reserve' (see Appendix B).
- The project area intersects the Mount Manning - Helena and Aurora Ranges Conservation Park at the south eastern corner of the Fiddleback prospect, however **no part of the proposed disturbance area infringes upon this Conservation Park.**
- An area encompassing a significant proportion of the Die Hardy Range has been nominated for inclusion in a proposed 'Class A' Nature Reserve (see Appendix C). This proposed reserve abuts the north western boundary of the Red Legs prospect, but **no part of the proposed project area or disturbance area infringes upon this proposed A Class Nature Reserve.**
- The Mount Manning Range Nature Reserve and Mount Manning Range Conservation Park are located approximately 10 km and 17 km east of the project area respectively.

### Flora and vegetation values

A level 2 flora and vegetation survey has been completed covering the Project Area. No rare flora species declared under the *Wildlife Conservation Act 1950 (WA)* or Threatened flora species listed under the *Environment Protection and Biodiversity Conservation Act 1999 (C'th)* were recorded within the project survey area. There were four Priority species encountered within the project survey area, namely *Grevillea georgeana* (P3), *Mirbelia ferricola* (P3), *Dryandra arborea* (P4), and *Eucalyptus formanii* (P4). With the exception of *Mirbelia ferricola*, all other priority species are well represented in the survey area, outside of the project disturbance (see Appendix D and E). The Marda East project survey areas intersect the Priority One (P1) Die Hardy Range / Diemels vegetation complex (banded ironstone formation). The project disturbance footprint intersection

with the PEC is on the boundary of the PEC, is well removed from the Die Hardy Range banded ironstone formations themselves and represents less than 0.2% of the entire mapped PEC area.

SXG will carry out a further footprint design optimisation in light of the vegetation and flora values identified, and will relocate infrastructure away from PEC and Priority Flora values where possible. This includes relocating waste dumps, topsoil stockpiles and other supporting infrastructure, to ensure the smallest impact on both Priority Flora and PEC conservation values. This optimisation will be carried out prior to the formal referral of the project.

#### Fauna values

SXG is about to undertake a fauna survey of the Marda East project area including a comprehensive trapping survey on site. While there are a number of fauna surveys available regionally, these are focused on the BIF ranges, not in the area of the proposed project. A Level 1 fauna survey was completed for the Marda Central project.

The nearby Marda Central project identified that a number of conservation significant species may be present in the general area, including the Major Mitchell's Cockatoo (*Lophochroa leadbeateri*) which is listed under Schedule 4 of the *Wildlife Conservation Act*, and the Malleefowl (*Leipoa ocellata*) which is listed as Vulnerable under the EPBC Act and *Wildlife Conservation Act*. The fauna survey of the Marda East project area will determine the presence of any species of conservation significance, and will also include survey for short range endemic invertebrates.

#### Hydrology and Hydrogeology

Studies to determine the likely incursion of groundwater into the pits are currently being undertaken. Groundwater in the project area is estimated to be approximately 60m below ground level (similar to the Marda Central project area), and the Marda East pits are proposed to be no deeper than 50m. Accordingly, it is anticipated that groundwater incursion will be minimal.

Early consideration of topography indicates a potential watershed that will direct surface water flow in the project area away from the proposed Class A Nature Reserve.

#### Material Characterisation

Rock types in the nearby Marda Central area are characterised as non-acid forming with very low reactive carbonate levels, insufficient sulphur and no sulphide present (due primarily to the extent of weathering). In addition, the rock types have been identified to have significant acid neutralising capacity over time. The Marda East project area has a similar weathering profile and it is expected that rock types will be similar, however this will be confirmed through materials characterisation investigations as permitting progresses. A full soil survey will be completed once the EPA has reached a decision on the Referral outcome.

#### Stygofauna and Troglifauna

It is anticipated that the desktop stygofauna and troglifauna assessment conducted for the Marda Central deposits will apply to the Marda East project, given its close proximity. In addition, it is expected that the Marda East pits will interact minimally with groundwater, given they are likely to be located above the water table.

### Further Work

SXG anticipates preparing an EPA Referral document for the Marda East project. While there is a significant amount of regional survey data available from both the Marda Central project and other surrounding mines, which SXG will use to inform the discussion regarding the regional context, SXG is in the process of preparing and/or completing the following specific surveys for the Marda East project, to support the EPA Referral:

- Level 2 Flora study;
- Level 2 Fauna;
- Hydrology study; and
- Aboriginal Heritage study.

SXG is proposing to defer the following further investigations until a decision on the Referral is reached, in order to obtain further advice from the EPA in relation to scoping. These studies include:

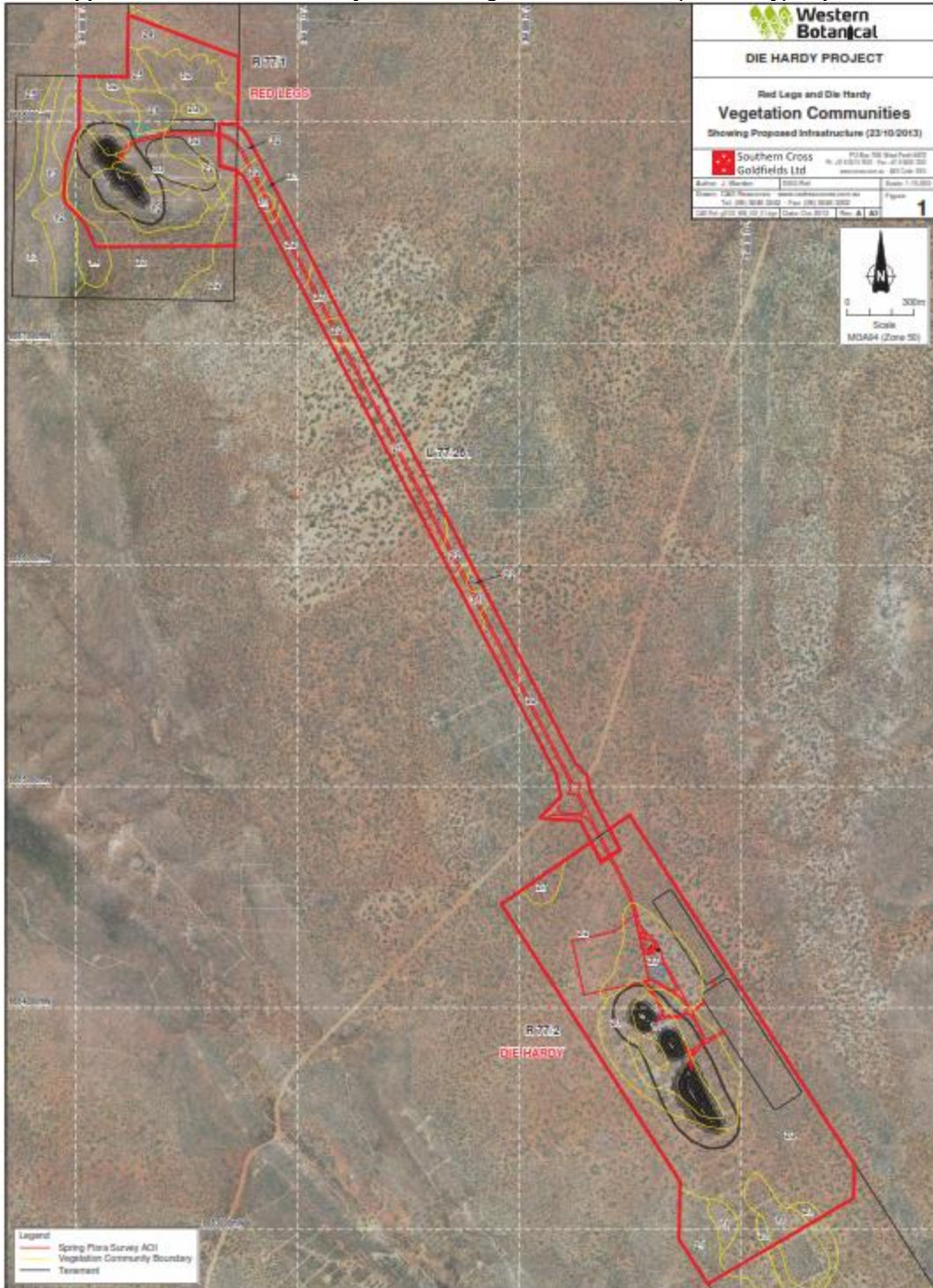
- Soil and landform study (including more detailed rehabilitation design and closure planning);
- Materials characterisation study;
- Desktop stygofauna and troglofauna study;
- Hydrogeology study; and
- Air quality, noise, vibration and amenity study.

### Consultation

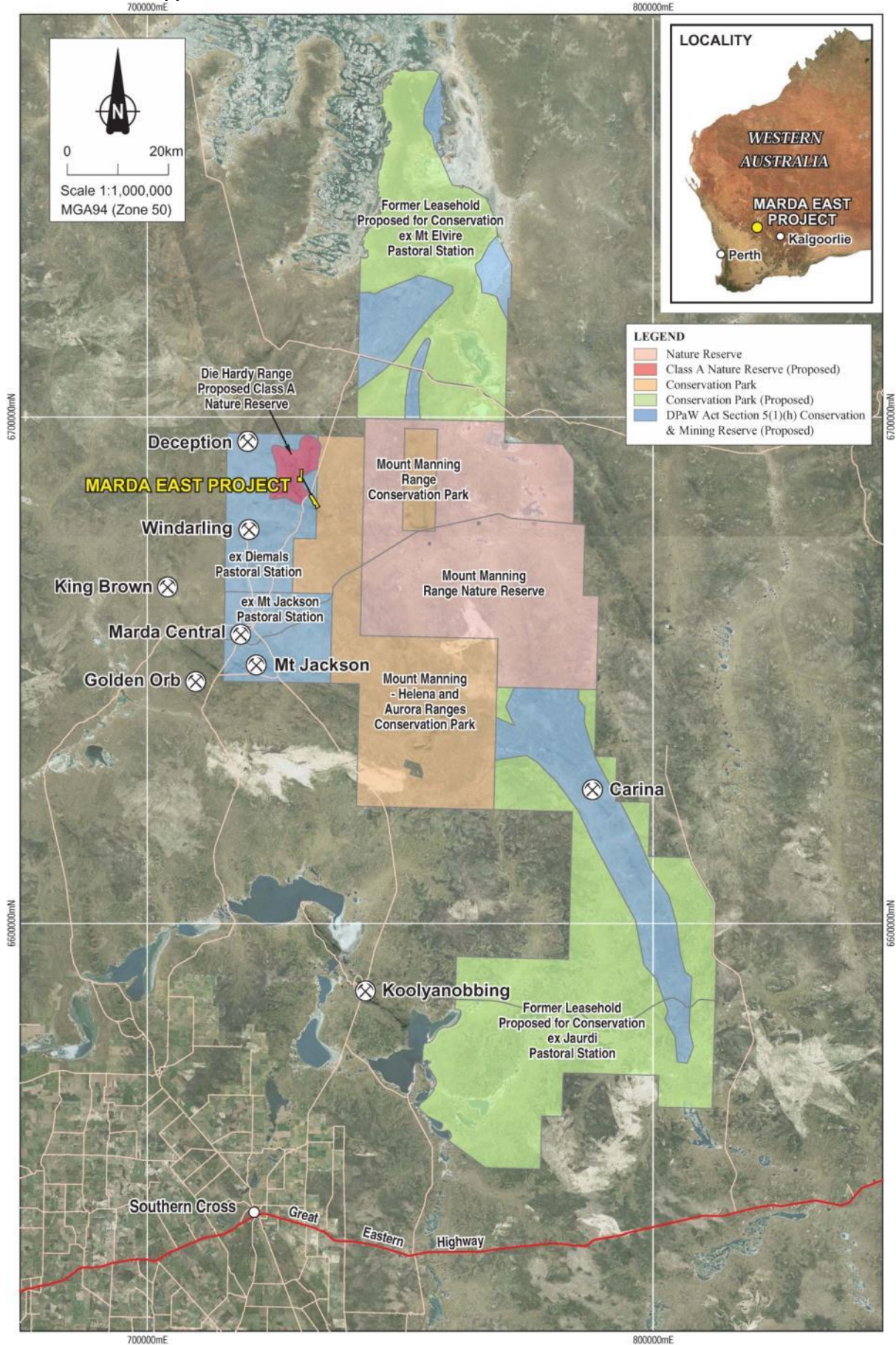
SXG is currently engaging with government and non-government stakeholders, with the aim of understanding:

- Areas of interest and concern;
- Key focus points for addressing as part of the referral;
- Any potential improvements that may be made to mine design and/or infrastructure placement in order to minimise impacts; and
- Likely final land use and implications for mine rehabilitation strategies.

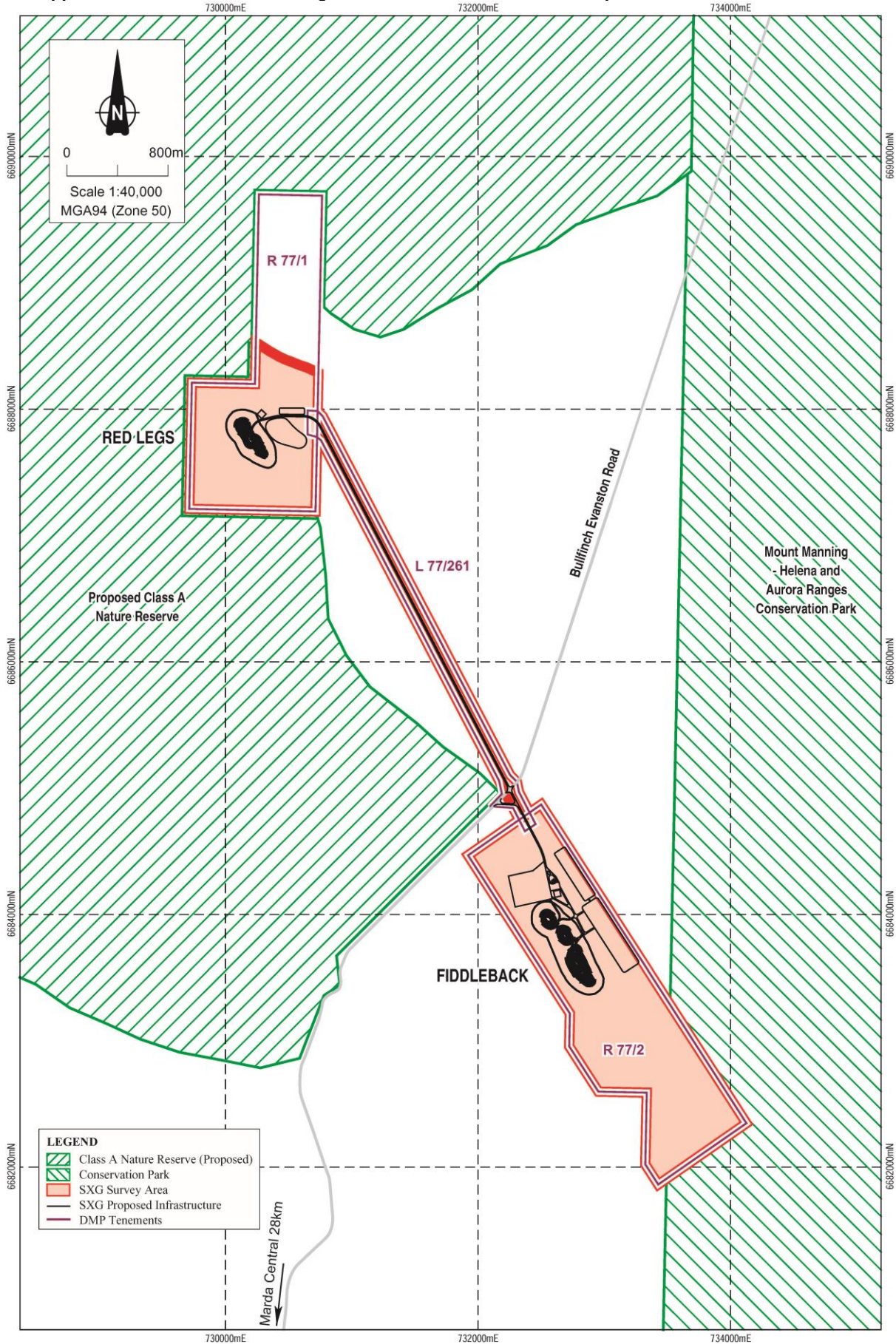
# Appendix A – Marda East Project – Red Legs and Fiddleback (Die Hardy) Deposits



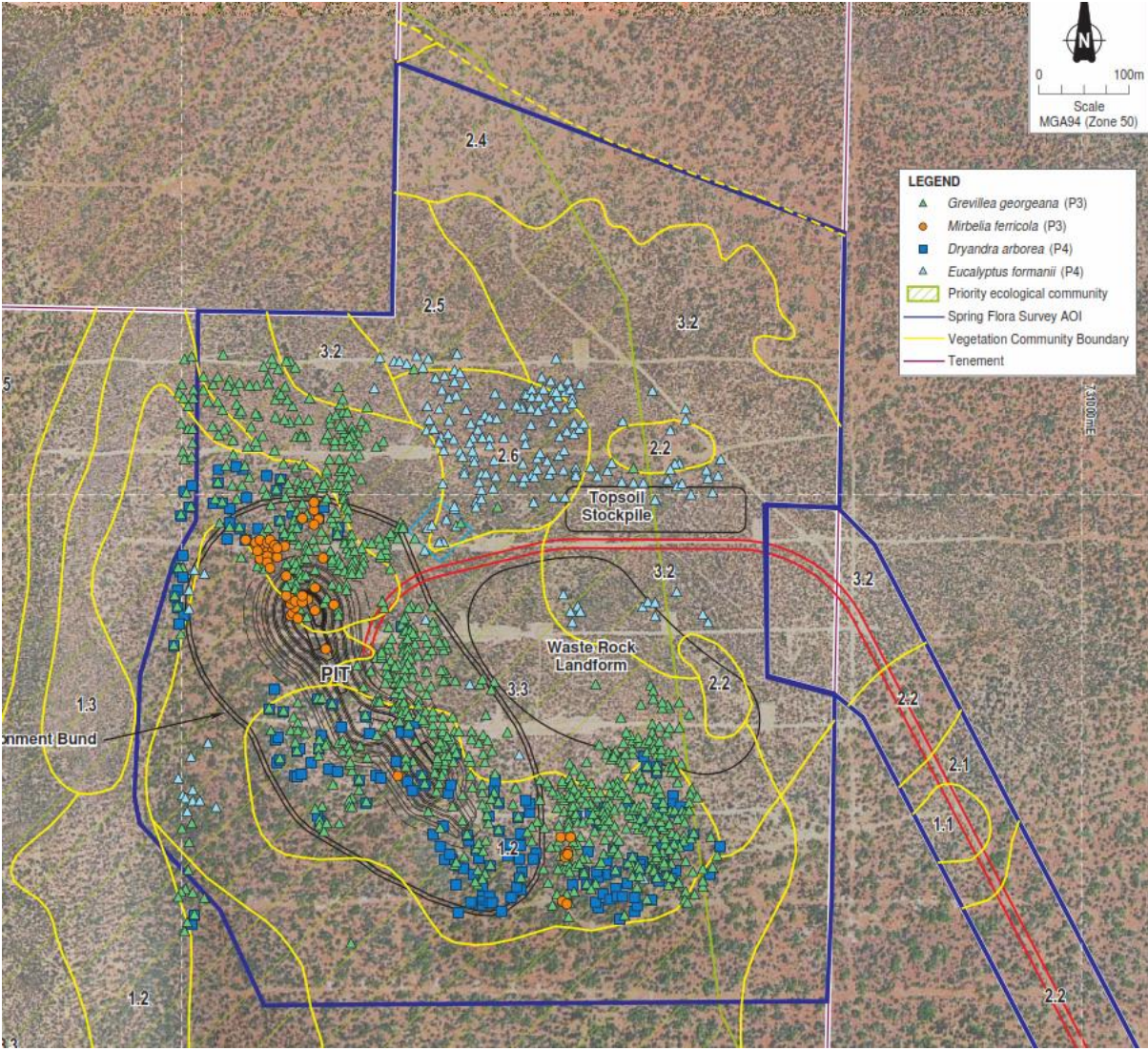
## Appendix B – Location of Marda East in relation to Conservation Areas



# Appendix C – Location of Red Legs Infrastructure in relation to Proposed Class A Nature Reserve



Appendix D – Red Legs Proposed Infrastructure (Indicative) in Relation to Priority Flora



## Appendix E – Red Legs Proposed Infrastructure (Indicative) in Relation to Priority Flora

