Woodside Solar Facility Impact Reconciliation Procedure

September 2022

Revision 0

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1. CONTEXT, SCOPE AND RATIONALE

1.1 Purpose of this report

The Impact Reconciliation Procedure (IRP) outlines the methodology Woodside will use to calculate the environmental value impacted within the Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the Pilbara. The Proposal (refer Section 2.1) lies in the Roebourne Subregion (PIL 4) as described by the IBRA (Version 7). Beard (1975) mapped broad-scale pre-European vegetation associations over the Proposal Development Envelope (DE).

1.2 Proposal Overview

The Proposal is to construct and operate a Woodside Solar Facility in the Maitland Strategic Industrial Estate, approximately 15 km south-west of Karratha, in the Pilbara region of Western Australia.

The Proposal will generate electricity from a large-scale Solar PV Farm, complemented by battery storage facilities. Electricity will be delivered to industrial customers via the North-West Interconnected System

Table 1-1 The Proposal

Element	Location/description	Maximum extent, capacity or range
Physical elements		
Solar PV Farm	**Figure 1-1** Located in the MSIA Buffer Area	Disturbance of up 843 ha of native vegetation within a 943 ha development envelope.
Solar Plant Supporting Infrastructure (SPSI)	**Figure 1-1** Located on the eastern boundary of the MSIA	Disturbance of up to 33 ha of native vegetation within a 157 ha development envelope.
Construction elements		
Solar PV Farm	**Figure 1-1**	Installation of the following infrastructure, across one or more phases; – Approximately 1,000,000 solar panels each approximately 1 m by 2 m each attached to mounting structures (fixed or tilting) positioned 0.5 – 4 m above ground, with output of up to 500 $MW_{(AC)}$ in total. – Unsealed access tracks – Supporting infrastructure such as inverters, cabling, battery energy storage system and electrical substations / transformers. – Supporting facilities that may include a maintenance workshop, laydown areas, office, ablutions and crib facilities.
Solar Plant Supporting Infrastructure (SPSI)	**Figure 1-1**	Installation of the following infrastructure, across one or more phases; – Supporting infrastructure including a battery energy storage system, electrical substation and access road. – Supporting facilities that may include a maintenance workshop, laydown areas, office, ablutions and crib facilities.
Operational elements		

Element	Location/description	Maximum extent, capacity or range
Solar PV Farm	**Figure 1-1**	Operation of a Solar PV Farm capable of generating up to 500 $MW_{(ac)}$ of electricity from Solar PV including a battery energy storage system delivered to industrial customers via the North West Interconnected System.
Solar Plant Supporting Infrastructure (SPSI)	**Figure 1-1**	Operation of infrastructure supporting the Solar PV Farm.

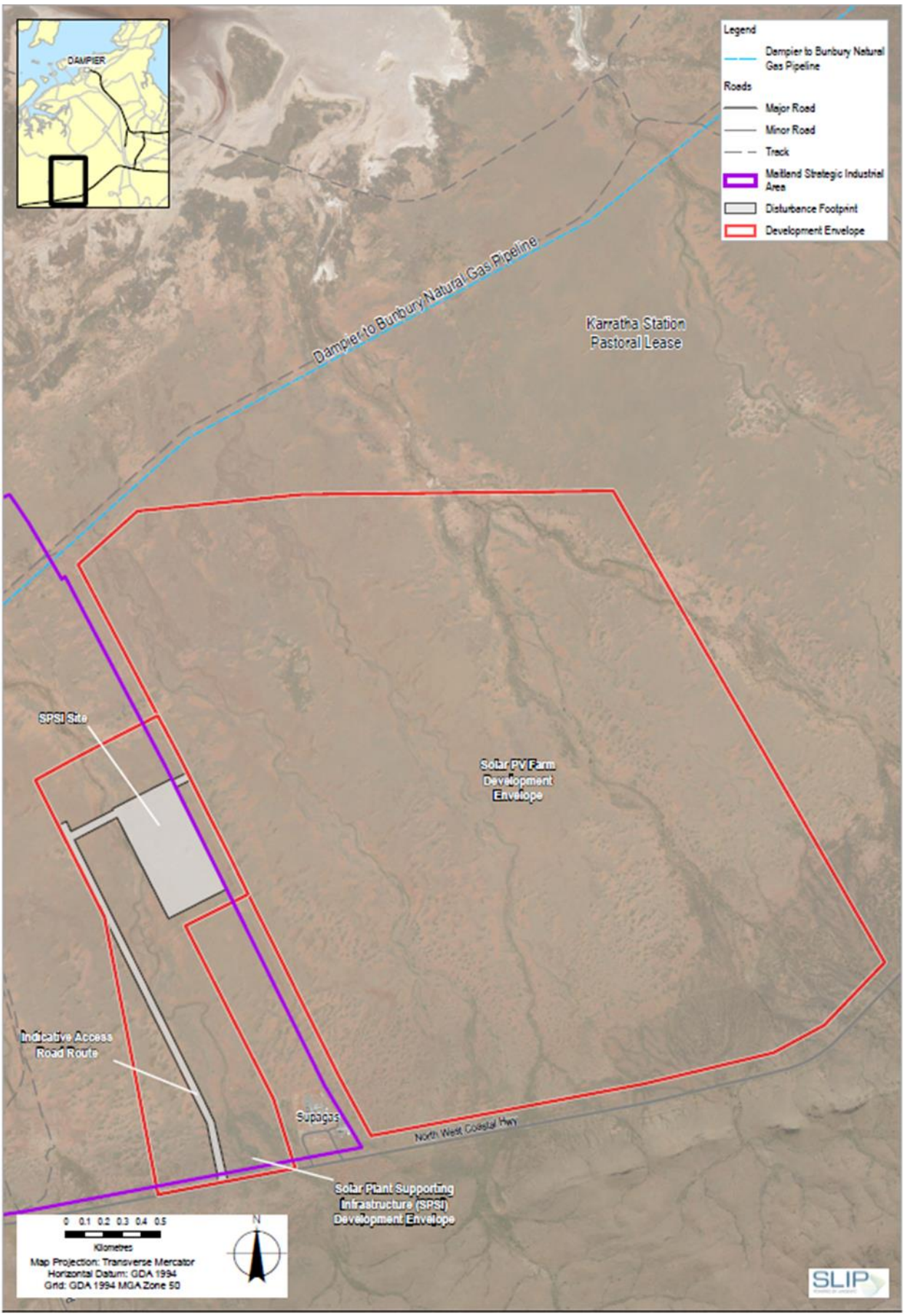

Figure 1-1 Proposal Location

1.3 Condition requirements

The Proponent referred this Proposal to the WA Environmental Protection Authority (EPA) under Part IV (Section 38) of the *Environmental Protection Act 1986* (WA) (EP Act) on Tuesday 30th November 2021, as a Proposal that has potential to have a significant impact on the environment.

The Proponent is also referring the Proposal to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) as a Proposal that has potential to impact matters of national environmental significance (MNES).

As an offset is being proposed, it is expected that condition(s) may need to be included in the future Ministerial Statement requiring an offset be implemented. The IRP is approved during the assessment process such that, if the project is approved, the Ministerial Statement will include a condition requiring the proponent to implement the IRP.

2. Procedure

2.1 Identification of values requiring offsets

2.1.1 Flora and Vegetation

The Australian Bioregions, Interim Biogeographic Regionalisation (IBRA), divides the Australian continent into 89 bioregions and 419 sub regions. IBRA regions represent a landscape-based approach to classifying the land surface, including attributes of climate, geomorphology, landform, lithology and characteristic flora and fauna. The IBRA is a key tool in identifying land for conservation.

The Western Australian (WA) Environmental Protection Authority (EPA) identified in 2012, an increase in project applications and the clearing of native vegetation within the Pilbara IBRA Region. The Department of Water and Regulation (DWER) invests contributions to the Pilbara Environmental Offsets Fund (the Fund) to assist strategic biodiversity conservation projects across the Pilbara.

The potential direct impacts to vegetation by type, Priority Ecological Community (PEC) and condition class, due to clearing for construction of the Proposal components are summarised below. The indicative impact areas for each vegetation type and condition class are estimated based on the proportion of the vegetation type and condition within the Proposal DE. The specific impact footprints for each Proposal component will be determined following a review of site constraints including ecological, hydrological, heritage, geotechnical and topographic aspects.

As presented Woodside Solar Facility Referral Supporting Document, the Proposal has potential to result in clearing of approximately 943 ha of native vegetation in the Solar PV Farm DE. The condition of the vegetation within the Development Envelope

- 64.54 % in ‘Excellent’ and ‘Very Good to Excellent’ condition
- 23.0% in ‘Good’ to ‘Good to Very Good’ condition
- 1.0% in ‘Poor’ condition

2.1.2 Summary of environmental values requiring offset

A summary of the environmental values that the Proponent is proposing to offset for the Proposal are provided in Table 2-1.

Table 2-1 Environmental values that require offsets

Environmental value	IBRA subregion
Vegetation in Good or Excellent Condition	Roebourne
Remnant vegetation of the Horseflat land system of the Roebourne IBRA – Priority Ecological Community P1 (Roebourne Plains coastal grasslands with gilgai microrelief on deep cracking clays) – Priority Ecological Community P3 (Horseflat land system of the Roebourne plains)	Roebourne

For all other factors, the residual impact from the Proposal is not considered to be significant and therefore offsets are not proposed.

An assessment of the impact of the proposal, the measures to avoid, mitigate and rectify these impacts and any significant residual impact or clearing in variance to the clearing principles has been included in Section 13 of the Environmental Referral Supporting Document.

The following offsets were identified as being required (as a maximum).

- Disturbance to up to 87.8 ha of vegetation in Very good to Excellent condition, where this vegetation is not a PEC
- Disturbance to up to 95.5 ha of P1 PEC in any condition
- Disturbance to up to 526.7 ha of P3 PEC in any condition

The nature of impacts is that they are unlikely to be significant but have been identified as requiring offset within the Strategic Advice on Cumulative environmental impacts of development in the Pilbara region (Government of Western Australia, 2014b).

The offset calculation methodology provided in the WA Environmental Offsets Guidelines (Government of Western Australia, 2014a) has not been undertaken as the Proposal will likely be subject to an offset rate per hectare

2.2 Methodology to determine impacts

2.2.1 Vegetation Baseline Data

Figure 2-1 provides an illustration of the native vegetation habitat present within the Development Envelope. This baseline was determined via an initial field survey (VLA 2019) conducted in July 2019. A follow up wet season survey (VLA 2021) was undertaken in April and June 2020 to address the limitations of the reconnaissance survey over the Roebourne Plains and has enabled a comprehensive identification of PECs and priority flora species.

The results of the flora survey in VLA 2021 included in accompaniment to the Referral Supporting Document shall define the flora baseline for assessment of impacts of the first six years of implementation of the proposal. After this time, a new survey would be commissioned prior to any new ground disturbing works occurring to update the flora baseline. This is necessary as the initial solar infrastructure would be fenced and contained within a compound but beyond this, the area outside of the disturbance compound but within the development envelope may continue to be grazed or farmed, potentially changing flora habitat or condition.

Given the phases nature of the proposal, with potentially long periods between new ground disturbing works, the Proponent will notify DWER of commencement and completion timeframes prior to any ground disturbance activities. Following any two year period in which ground disturbing activities occurred, the Proponent will utilise on-ground survey and satellite imagery in combination with baseline mapping shapefiles and GIS technology to determine the extent of native vegetation and terrestrial fauna habitat cleared. Clearing in the first six years of the Proposal will be compared to the existing baseline data. After this period, new baseline data will be obtained, with surveys conducted in accordance with relevant DWER procedures and submitted with the relevant Impact Reconciliation Report.

On ground surveys of cleared areas and reconciliation of clearing with be captured and reported to DWER. This reconciled data will be supplied as part of the Impact Reconciliation Report (IRR) refer to Section 4.

2.2.2 Ground Disturbance Procedures

The Proponent intends to develop and implement ground disturbance procedures to manage any anticipated direct impacts as a result of clearing for the Proposal. These procedures will include:

- Demarcating the Proposal Footprint boundary using survey data and appropriate visual markers prior to ground disturbing activities;
- Visual inspection and approval of Proposal Footprint boundary prior to ground disturbing activities; and
- Visual inspection and record of cleared areas to be undertaken post-clearing.

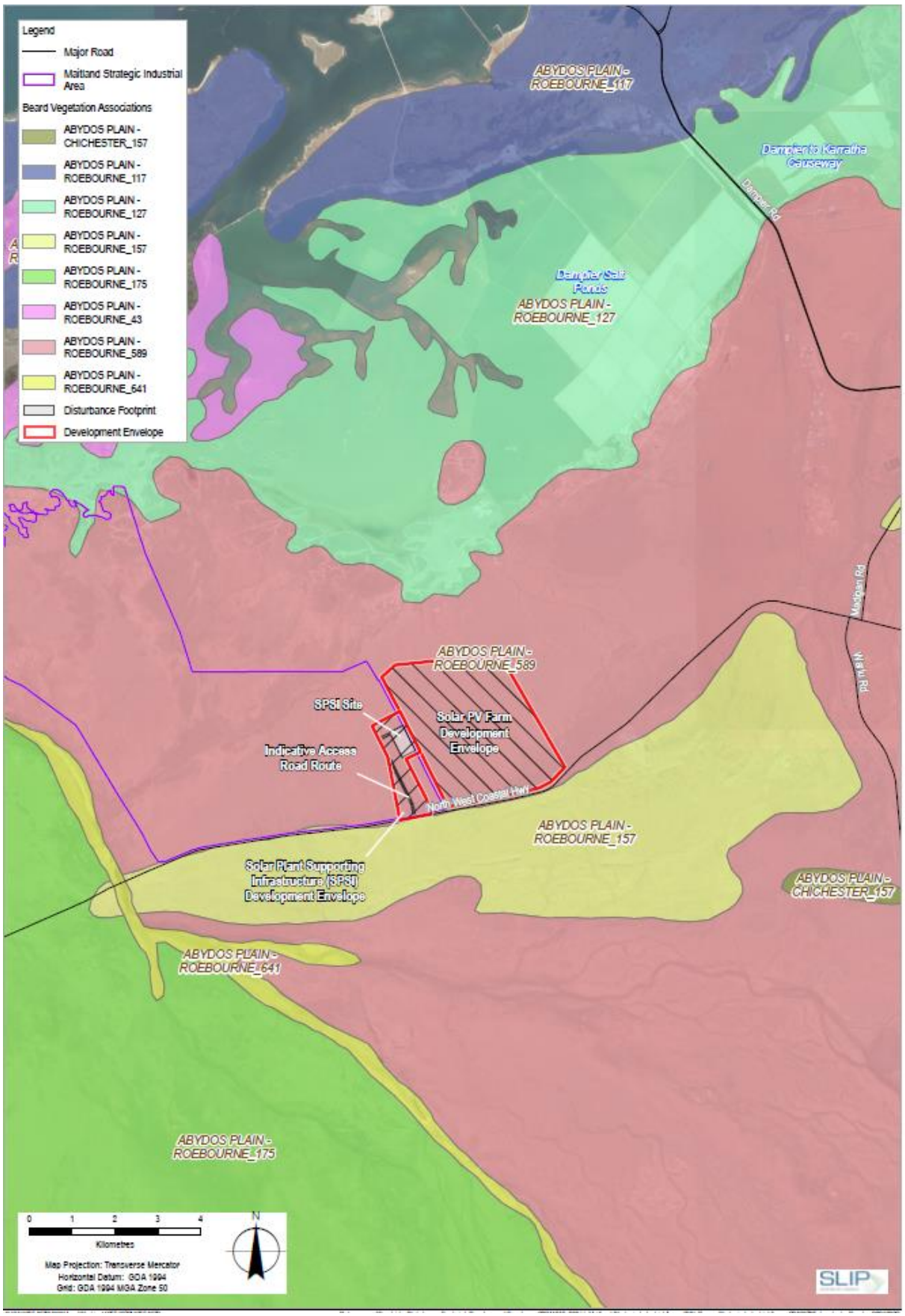

Figure 2-1 Vegetation Associations

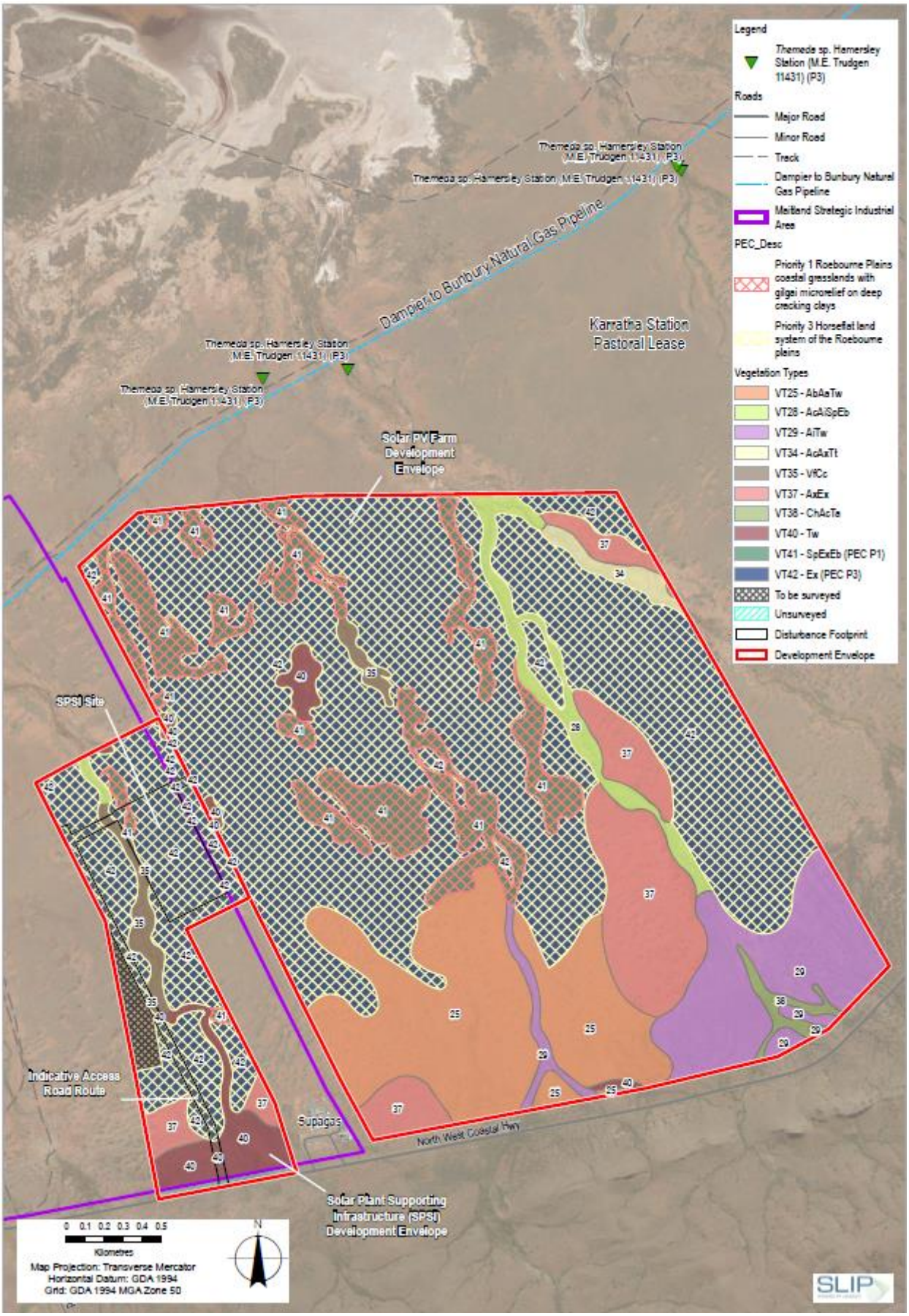

Figure 2-2 Mapped vegetation types within the Development Envelope

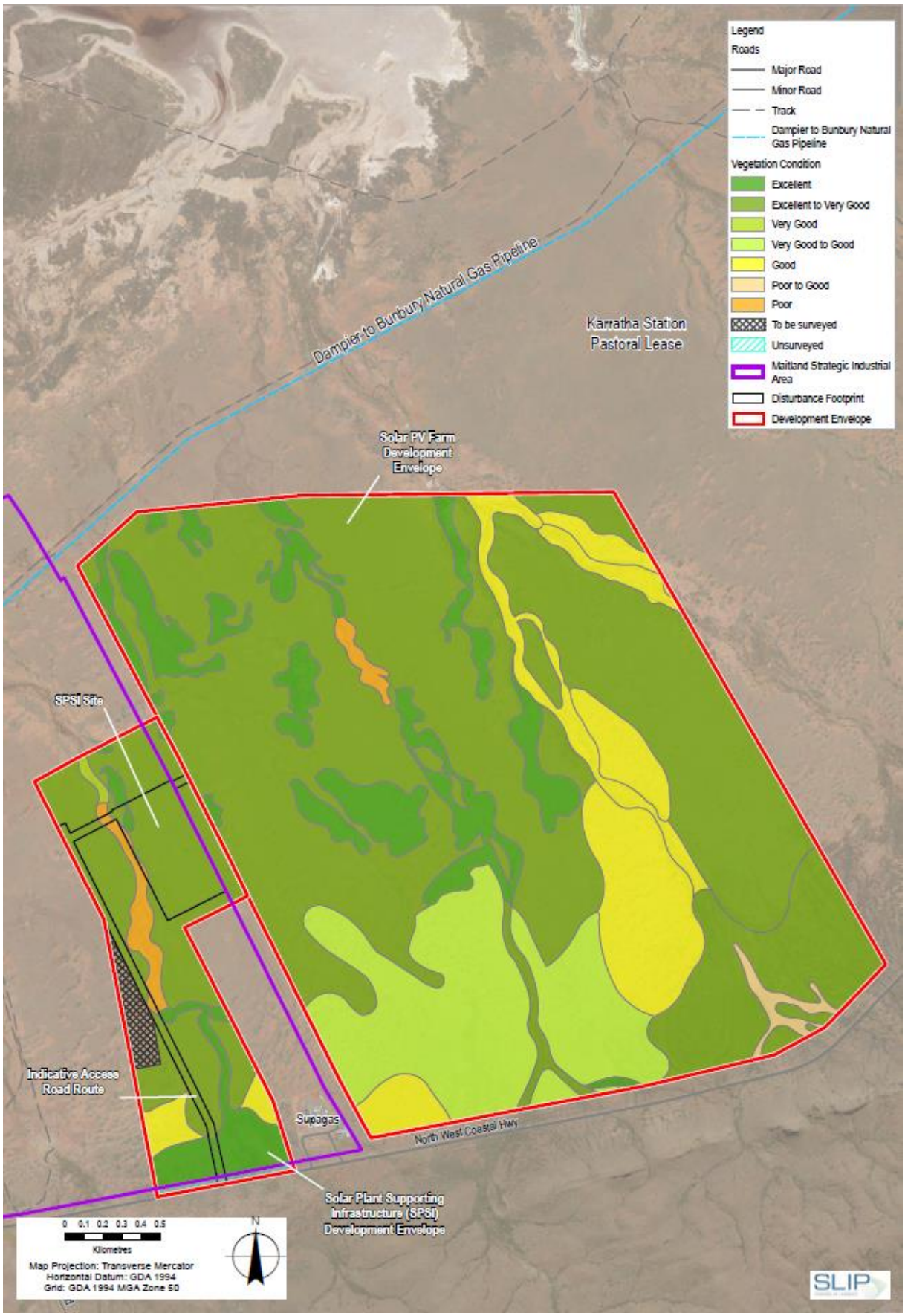

Figure 2-3 Vegetation Condition

3. Reporting

3.1 Frequency and timing

Clearing is anticipated to be completed in a number of stages. Each 50MW of solar PV infrastructure (including supporting infrastructure such as access tracks or power lines) is expected to require clearing of up to 100ha. The first clearing activity is planned for 2023. The first phase of the proposal is expect to commence ground disturbing activities within six months of receipt of the Ministerial Statement, however timing will be subject to all commercial and regulatory authorisations being in place

The reporting schedule is provided in Table 3-1. For each Impact Reconciliation Report (IRR), clearing area will be provided for each financial year of the biennial reporting period.

The first biennial reporting period will commence from issue of the Ministerial Statement and extend until the end of the proceeding financial year (i.e., To be determined). In the case of the "first biennial reporting period," the amount of clearing will be reported for each financial year or part thereof. It is not anticipated subsequent biennial reporting periods will be required. The proponent will submit an Impact Reconciliation Report (IRR) no later than four months after the conclusion of the clearing.

Table 3-1 Reporting period and frequency of the IRRs

Biennial Period	Action	Timing
-	Ministerial Statement issued	January 2023 (Estimated)(1)
	Clearing commences for initial 50MW solar PV installation	Estimated within 6 months of receipt of Ministerial Statement. Proponent will advise DWER four weeks prior to commencement of ground disturbing activities
Period 1*	First biennial reporting period	January 2023 – December 2025.
	Ground Survey to verify cleared areas	December 2025 (subject to seasonal restrictions)
	IRR submitted to DWER	30 April 2026
	Offset invoice provided by DWER	31 May 2026
	Offset payment due	30 June 2026
Period 2 and subsequent periods(2)	Second biennial reporting period	January 2026 – December 2027.
	Ground Survey to verify cleared areas (if clearing occurred)	December 2027 (subject to seasonal restrictions)
	IRR submitted to DWER	30 April 2028
	Offset invoice provided by DWER	31 May 2028
	Offset payment due	30 June 2028

1 – Estimated date. Each subsequent date in this table shall been considered move forward by a date equivalent to the difference between this indicative date and actual date should the Ministerial Statement be issued after January 2023.

2 – Reporting will follow the sequence outlined here, but at an additional two year frequency. Clearing is expected to only occur in discrete period associated with solar PV farm expansion. It is likely that no clearing will occur within the majority of reporting periods. Post activity surveys will not occur in periods where no new infrastructure is installed.

The first offset payment will be due by the end of the financial year two years after ground disturbance commences (To be determined). An IRR will be compiled detailing the clearing undertaken during the biennial period and will be submitted to DWER at the conclusion of disturbance activities.

3.2 Impacts and reconciliation

Each IRR shall be structured in the manner prescribed in the DWER 'Instructions on How to Prepare Environmental Protection Act 1986 Part IV Impact Reconciliation Procedures and Impact Reconciliation Reports, January 2018', and use the temple provided in the below link: http://www.epa.wa.gov.au/forms-templates/instructions-preparing-impact-reconciliationprocedures-and-impact-reconciliation

Information to be included in the IRR is likely to include:

- The total cleared area that has occurred during each financial year of the period, attributed by environmental value (i.e. Flora and Vegetation and Terrestrial Fauna Habitat) and IBRA subregion (i.e. Roebourne IBRA subregion)
- Information used to validate impact areas, including aerial imagery; digitised polygons showing cleared areas and any on-site visual inspection notes or photographs used to determine impacts for each financial year
- Information regarding any exemptions, other clearing approvals or reductions to contributions to the fund, where relevant
- Details and spatial data for historical impacts which are excluded from offset contributions, where relevant.

4. References

Beard, JS (1975), Vegetation Survey of Western Australia, Pilbara. 1:1 000 000 Vegetation Series. Explanatory Notes to Sheet 5, University of Western Australia Press, Nedlands, Western Australia.

Environmental Protection Authority (EPA). 2011. WA Environmental Offsets Policy. DRAFT (epa.wa.gov.au)

Environmental Protection Authority (EPA). 2014. WA Environmental Offsets Guidelines. August 2014 https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/WA Environmental Offsets Guideline August 2014.pdf

Environmental Protection Authority (EPA). 2021. Instructions: Impact Reconciliation Procedures and Impact Reconciliation Reports.

Government of Western Australia, (2014 a). Environmental Offsets Guidelines.

Woodside, (2021). Woodside Solar Facility, Environmental Referral Supporting Document.

Impact Reconciliation Procedure

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