



**WIMMERA MINERAL  
SANDS PROJECT  
LANDSCAPE & VISUAL  
IMPACT ASSESSMENT**

# PRESENTATION CONTENT

- EES scoping requirements
- Purpose of the Study
- Impact assessment methodology
- Findings and recommendations so far

# EES SCOPING REQUIREMENTS

The EES draft evaluation objective is:

- *Minimise adverse effects on landscape and visual amenity.*

*Key Issues:*

- *The potential for effects on the landscape values including views from Grampians National Park, Mount Arapiles-Tooan State Park and Black Range State Park, visual amenity for residents and character of region.*
- *Potential cumulative impacts of other existing and proposed projects (including mining) on landscape values of the region.*

# PURPOSE OF THE STUDY

- Define the criteria relevant to the study - legislation, standards and guidelines.
- Characterise - existing landscape features, landscape character, scenic quality.
- Prepare visual simulations - during development and end of life from indicative, sensitive locations.
- Assess the potential visual impacts on identified sensitive locations, including lighting impacts.
- Propose measures for the mitigation and management of potential visual impacts.

# METHODOLOGY

## Qualitative Assessment

- Visual Modification – the contrast of the proposal with the landscape character – how readily can the setting absorb change?
- Scenic Quality - what are the qualities / values of the landscape setting?
- Viewer Sensitivity – how sensitive are viewers to change?

## Quantitative Assessment

- How much of the proposal is visible from particular viewpoints? – field of view occupied.

# METHODOLOGY: *VISUAL SETTINGS*

The assessment has been undertaken for settings based on distance from the proposal:

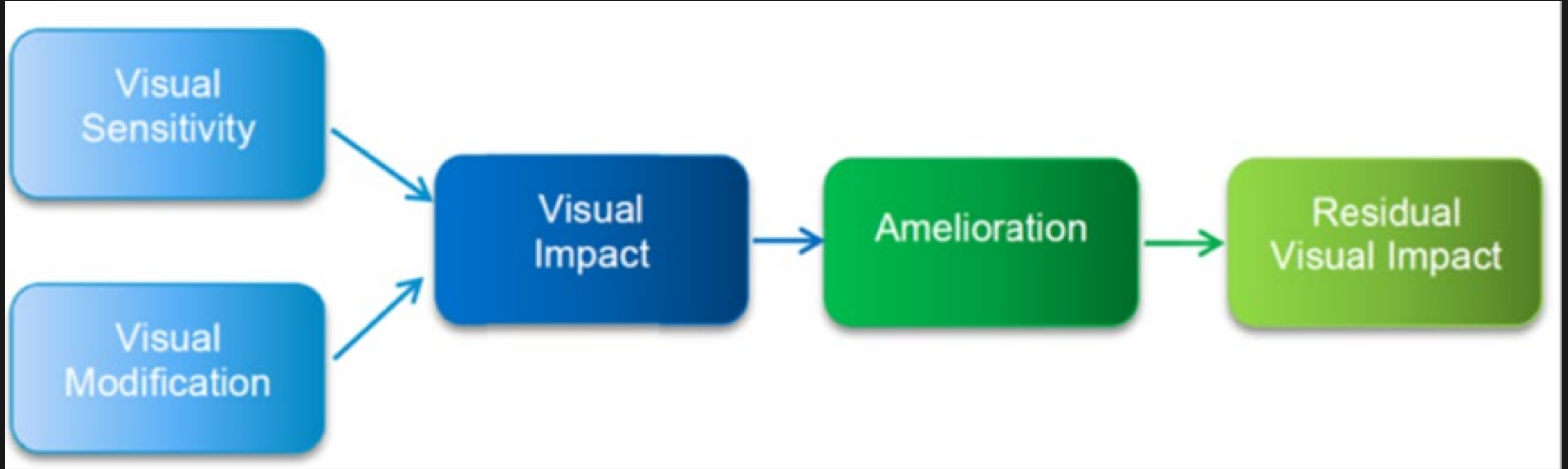
| VISUAL SENSITIVITY - LAND USE AREA | FOREGROUND    |            | MIDDLEGROUND           |            | BACKGROUND       |
|------------------------------------|---------------|------------|------------------------|------------|------------------|
|                                    | Local Setting |            | Sub - Regional Setting |            | Regional Setting |
|                                    | 0 - 0.5 km    | 0.5 – 1 km | 1 - 2.5 km             | 2.5 - 5 km | > 5 km           |
| National/State/Scenic Parks*       | H             | H          | H                      | M          | M                |
| Residences / Townships             | H             | H          | H                      | M          | L                |
| Tourism / Accommodation            | H             | H          | H                      | M          | L                |
| Conservation/Wildlife Reserve      | H             | H          | M                      | L          | L                |
| Recreation Reserves/Lakes          | H             | M          | M                      | L          | L                |
| Tourist Routes                     | H             | M          | M                      | L          | L                |
| Local Roads                        | L             | L          | L                      | VL         | VL               |
| Agricultural Areas                 | L             | L          | L                      | VL         | VL               |

*Legend - H = High, M = Moderate, L = Low, VL = Very Low*

# METHODOLOGY: *MATRIX*

| Level of Visual Impact<br>VL = Very Low, L = Low,<br>M = Moderate, H = High |    | Viewer Sensitivity |    |    |
|---|----|--------------------|----|----|
|   |    | H                  | M  | L  |
| Level of<br>Visual<br>Modification  | H  | H                  | H  | M  |
|   | M  | H                  | M  | L  |
|   | L  | M                  | L  | L  |
|   | VL | L                  | VL | VL |

# METHODOLOGY: *PROCESS*



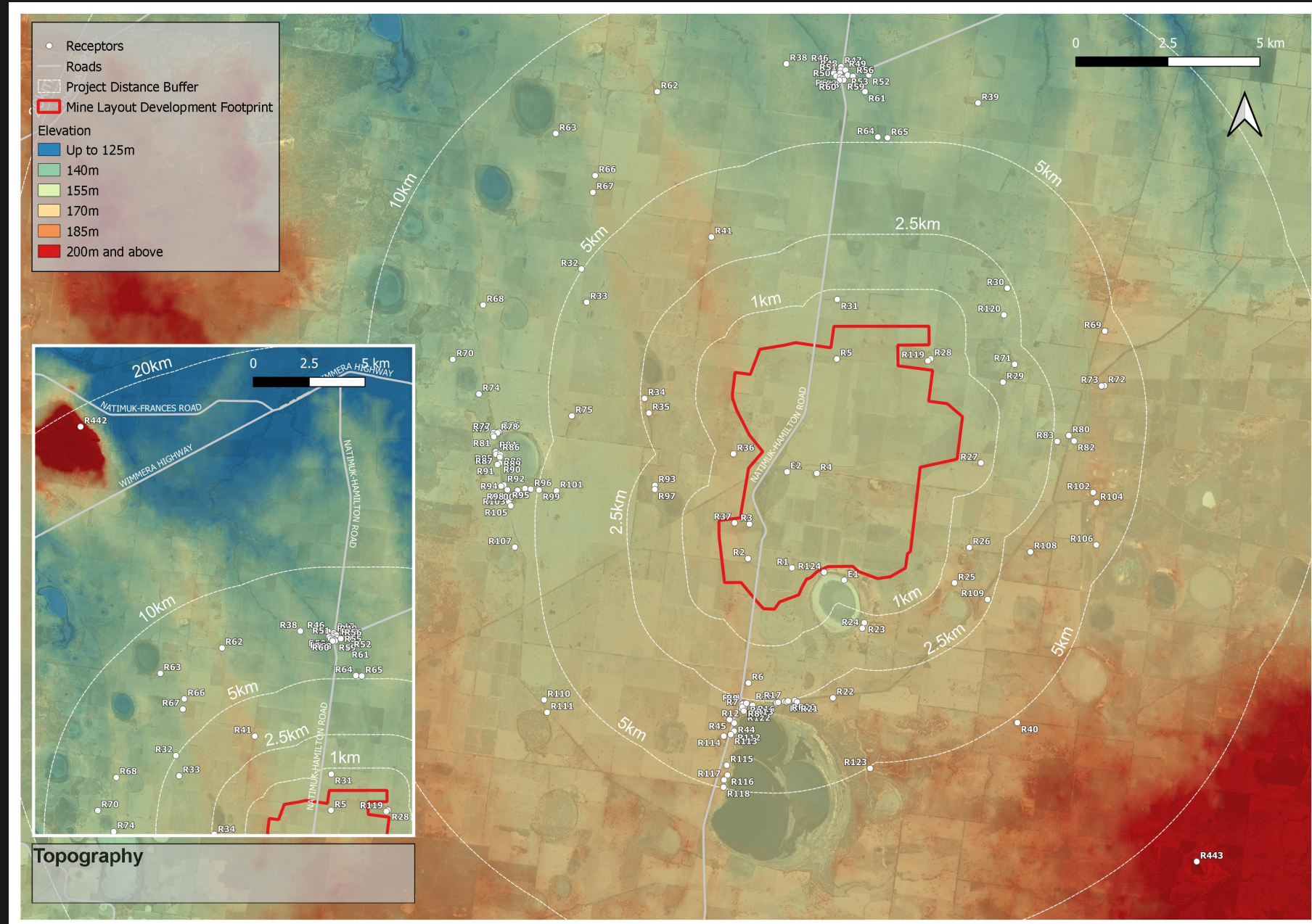


# PROJECT PROPOSAL: *KEY VISUAL CONSIDERATIONS*

- Mine Life – approx. 20-25 years
- Footprint – 3,396ha
- Annual pit disturbance - approx. 30-55ha
- Most visible components:
  - Tailings storage
  - Mining unit plants
  - Wet concentrator plant – 25m (50m stack)
  - Mine void and areas of active mining
  - Overburden stockpiles – 15m
  - Topsoil stockpiles (temp) – 2m
  - Subsoil stockpile (temp) – 5m
  - General infrastructure



# TOPOGRAPHY



# LANDSCAPE VALUES

The Grampians (Gariwerd NP) (30km distant)

The South West Victoria Landscape Assessment Study identifies:

- Mt Arapiles (State Significance – National Trust)
- Bitter Swamp (20km distant)
- White Lake (19km distant)
- Heard's Lake (12km distant)

# LANDSCAPE ABSORPTIVE CAPABILITY

## *Wimmera Subtype – Plains and lakes*

- Topography – High capability due to flat topography and no potential for overlooking.
- Existing Vegetation – Generally low for cleared agricultural areas. Moderate to high capability where vegetation exists.

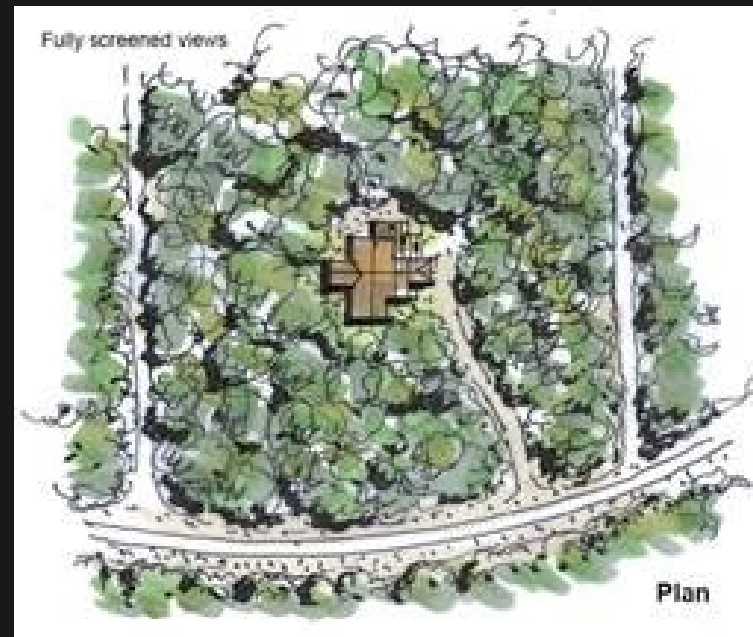
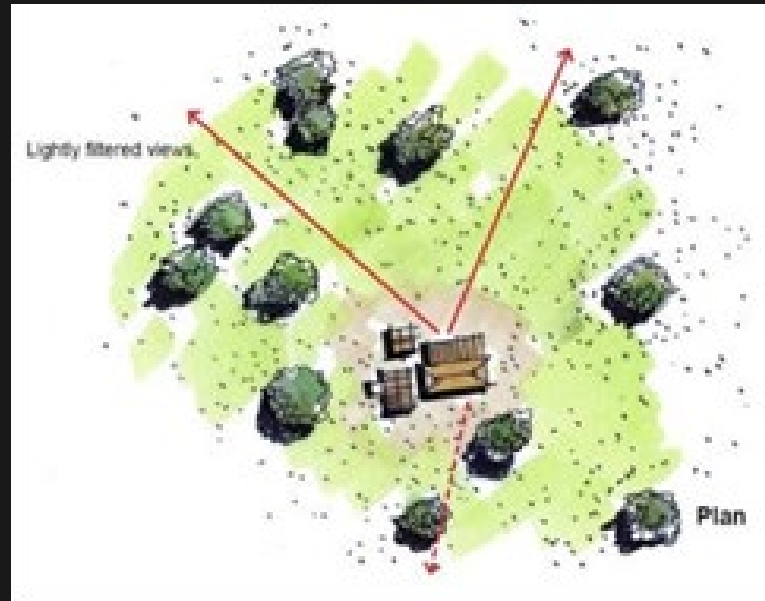
## *Wimmera Subtype – Mt Arapiles and Mt Talbot*

- Topography – Low capability due to elevation and the potential for overlooking.
- Existing Vegetation – Generally moderate to high capability where vegetation exists.

# ENVIRONMENTAL LIGHTING SETTING ZONES

- E1 – Natural – Intrinsically dark – Mt Arapiles
- E2 – Rural – Low district - Settlements

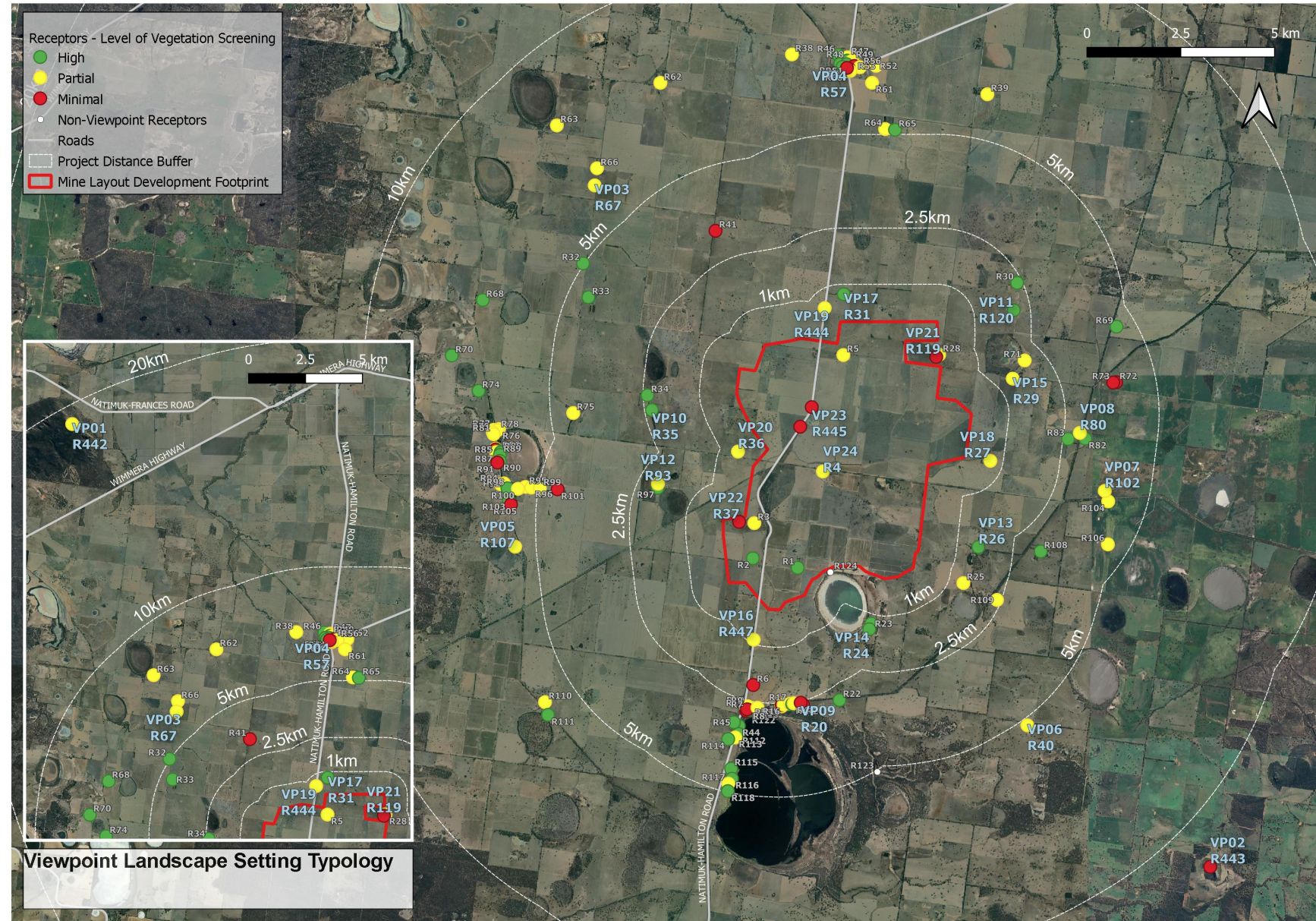
# FINDINGS: *SCREENING EFFECTS OF VEGETATION*



# FINDINGS:

## *KEY SENSITIVE VIEWPOINTS*

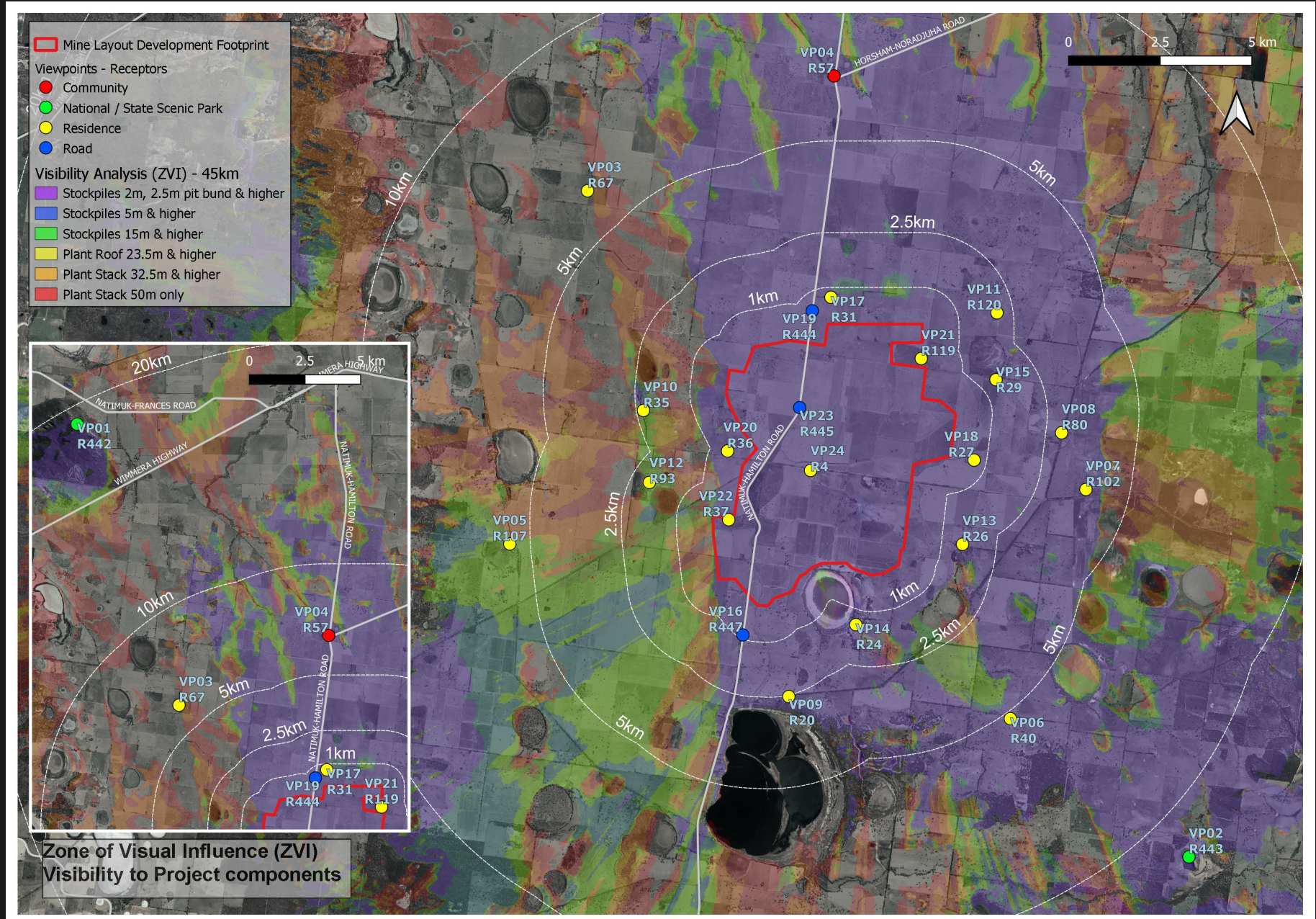
- Rural residences and settlements.
- Recreation and tourist attractions, e.g., Mt Talbot and Mt Arapiles/Tooan.
- Tourist Accommodation, e.g., Toolondo Caravan Park.





# FINDINGS: *VISUAL CATCHMENT ANALYSIS*

- Based on heights of main elements (entire extent of project)
- Worst case – assumes no screening vegetation



# VIEWPOINT 01 – MT ARAPILES

Existing

Post mining > 5 years

During mining ~ year 20

# VIEWPOINT 02 - MT TALBOT

11km from closest element

Existing



Wireframe - During mining ~ year 20



# VIEWPOINT 21 - R119

## QUICK SINCLAIR RUSSELLS RD, NORADJUHA

Existing



Post mining



During mining ~ year 15



# VIEWPOINT 22 – R37

## NATIMUK-HAMILTON RD, CLEAR LAKE

78 metres from closest element

Existing



During mining ~ year 18



# LIGHTING IMPACTS

- Sources
  - Fixed/Permanent – MUP, WCP, Admin buildings
  - Mobile lighting towers
  - Vehicle mounted headlights
  
- Effects
  - Fixed lighting can be shielded – hot spots reduced and an upward glow will be visible.
  - Working lights managed to reduce outward spill and hotspots
  - Vehicle and working lights will often be located behind soil stockpiles
  
- Overall impact expected to be low

# MITIGATION MEASURES

- Building material colour selection - processing plant and other buildings.
- Progressive restoration.
- Foreground visual screening – at perimeter of fixed plant and along road sides.
- Off site mitigation – consultation with landowners regarding amelioration on their land.
- Shielding of fixed lighting and management of vehicle mounted lights.

# SUMMARY

- Existing vegetation assists in screening views, particularly from residences
- Overlooking is not possible (except for distant and remote areas of the National State Park).
- Highest impacts located within the local setting reducing with distance.
- Impact highest for 30 months as mining advances at about 1 km per year.
- Backfilling of pits and flattening of stockpiles - impact will fall to low to moderate, reducing further with revegetation.



# SUMMARY *(CONT)*

- The highest sensitivity viewpoints occur within 2.5 km of the Project, with the sensitivity of viewers progressively dropping beyond this distance.
- Key sensitive viewpoints within 2.5 km of the Project include:
- Individual residences within a rural setting where a high visual impact would result:
  - VP18, VP20, VP21, VP22 and VP24.
- The settlements of Noradjuha and Toolondo, which are located approximately 7 km and 3 km, respectively, to the north and south of the Project.
- Sensitive uses include the Arapiles-Tooan State Park, 16 km to the north-west, and Mt Talbot Scenic Reserve, 11 km to the south-east. However, due to distance, impacts are low to moderate.

# **SUMMARY *(CONT)***

- Minimal impact on surrounding areas once completed.
- Overall, the impacts of lighting are expected to be low.

# SUMMARY: *MOST HIGHLY IMPACTED VIEWPOINTS*

| VIEWPOINT           | SENSITIVITY | MODIFICATION LEVEL | INITIAL IMPACT | RESIDUAL IMPACT |
|---------------------|-------------|--------------------|----------------|-----------------|
| <i>Viewpoint 18</i> | H           | M-H                | H              | M               |
| <i>Viewpoint 20</i> | H           | M                  | H              | M               |
| <i>Viewpoint 21</i> | H           | H                  | H              | M               |
| <i>Viewpoint 22</i> | H           | M-H                | H              | M-H             |
| <i>Viewpoint 24</i> | H           | H                  | H              | M               |

# QUESTIONS?