# 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:

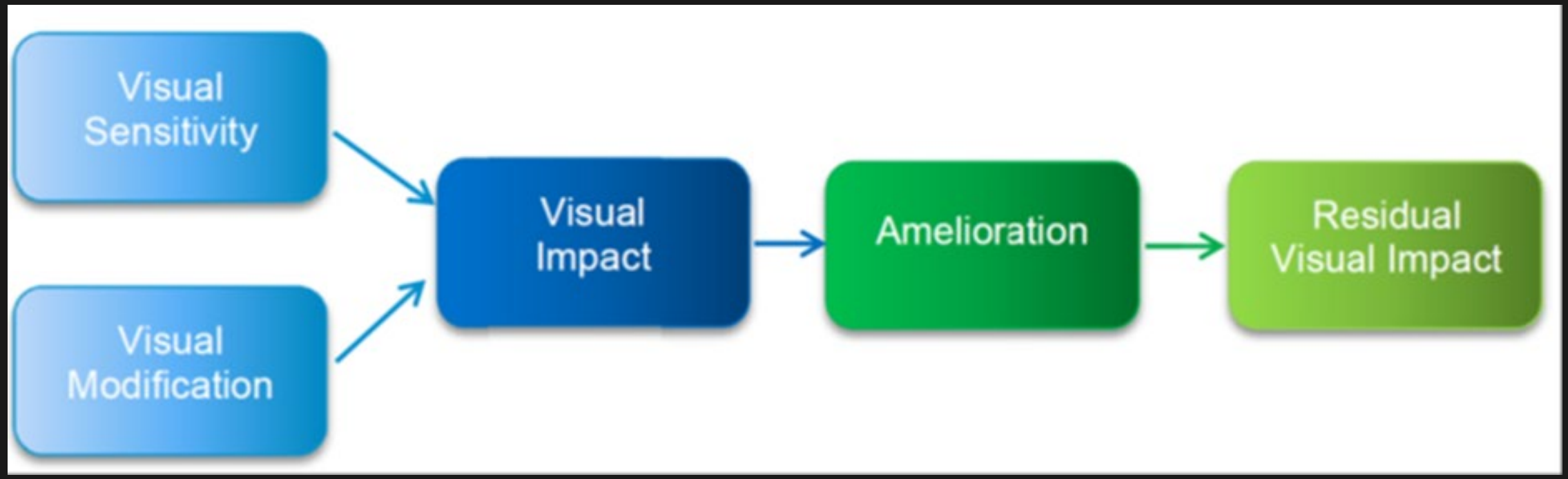
| VISUAL SENSITIVITY - LAND USE AREA | FOREGROUND | | MIDDLEGROUND | | BACKGROUND |
|---|---|---|---|---|---|
| | Local Setting | | Sub - Regional Setting | | Regional Setting |
| | 0 - 0.5 km | 0.5 – 1 km | 1 - 2.5 km | 2.5 - 5 km | > 5 km |
| National/State/Scenic Parks* | H | H | H | M | M |
| Residences / 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 Visual Modification | H | H | H | M |
| | M | H | M | L |
| | L | M | L | L |
| | VL | L | VL | VL |

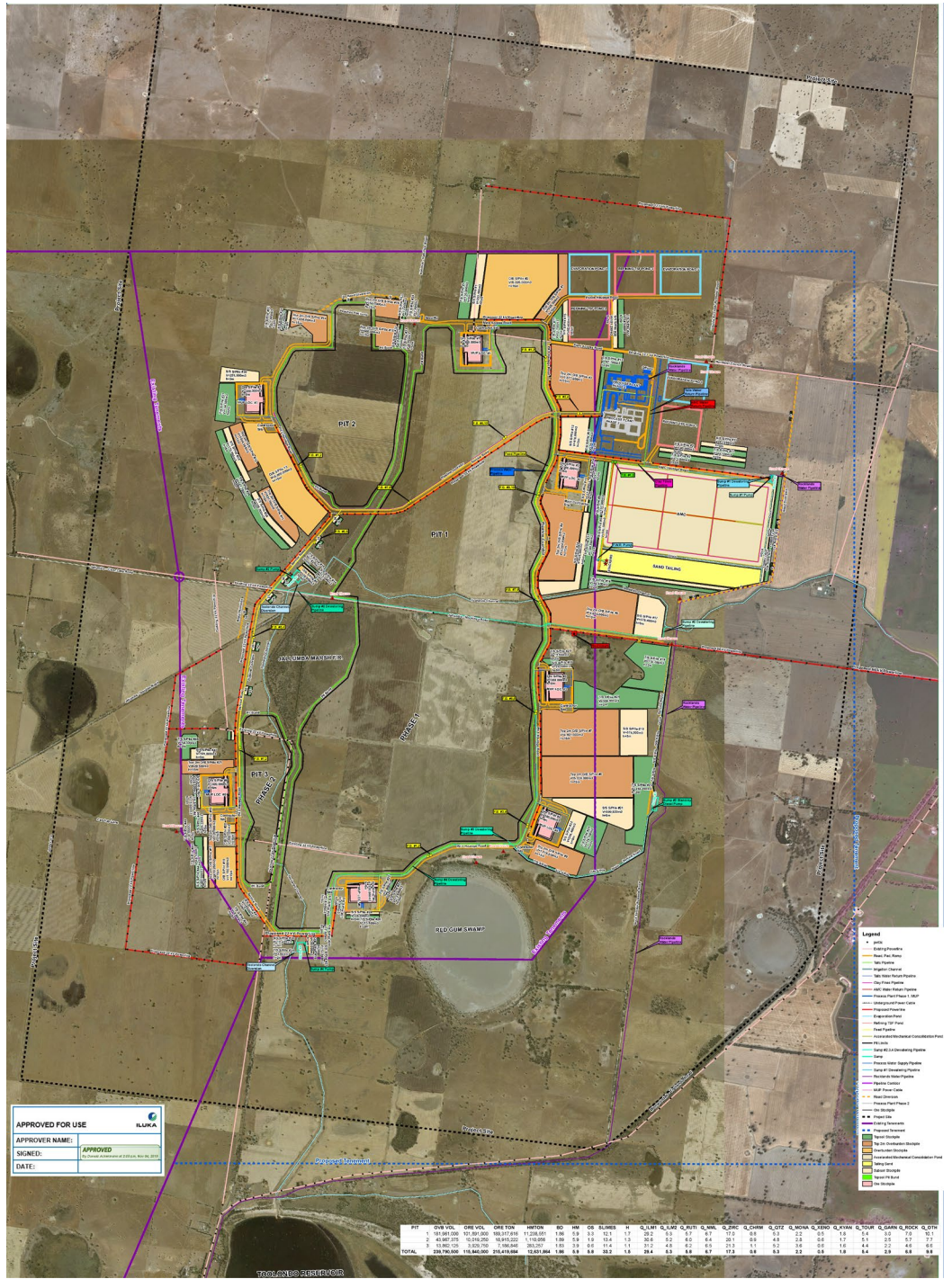
# METHODOLOGY:
## *PROCESS*



# PROJECT PROPOSAL: *KEY VISUAL CONSIDERATIONS*

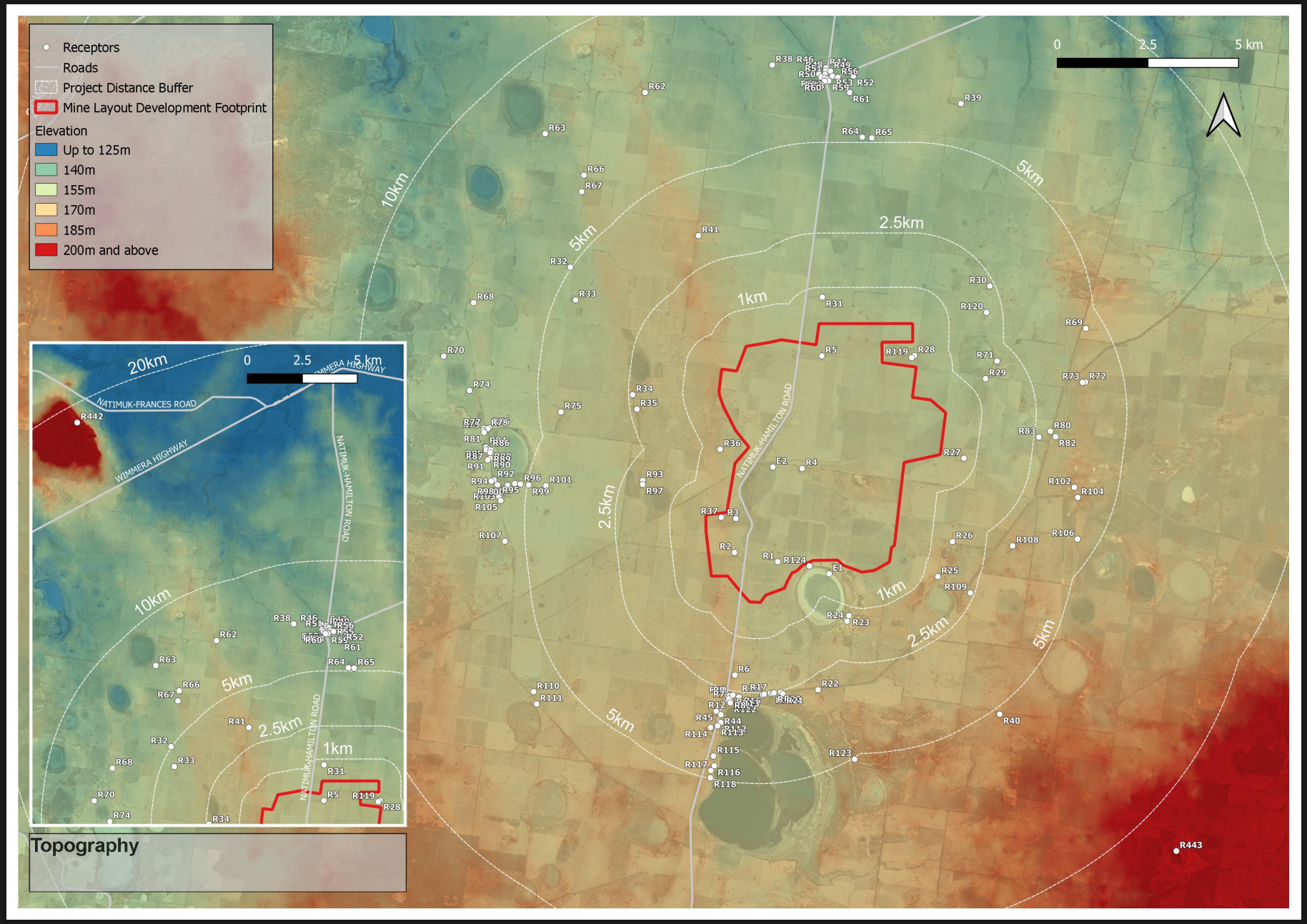
- Mine Life – approx. 20-25 years
- Footprint – 3,396ha
- Annual pit disturbance - approx. 30-55ha
- Most visible components:
  - Tailings storage
  - Mining unit plants
  - Wet concentrator plant – 25m (50m stack)
  - Mine void and areas of active mining
  - Overburden stockpiles – 15m
  - Topsoil stockpiles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

# PROJECT SITE LAYOUT




URBIS.COM.AU

# TOPOGRAPHY




URBIS.COM.AU

# 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.

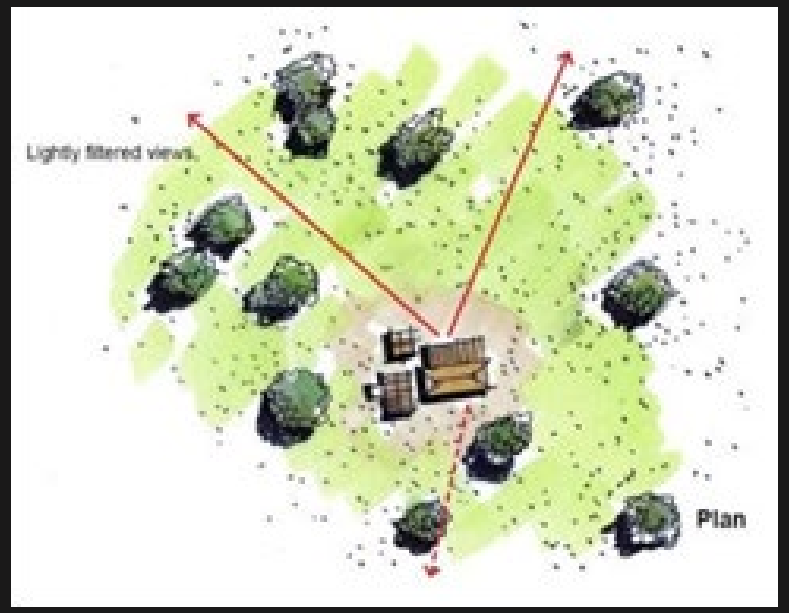
***Wimmera Subtype – Mt Arapiles and Mt Talbot***

- 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*

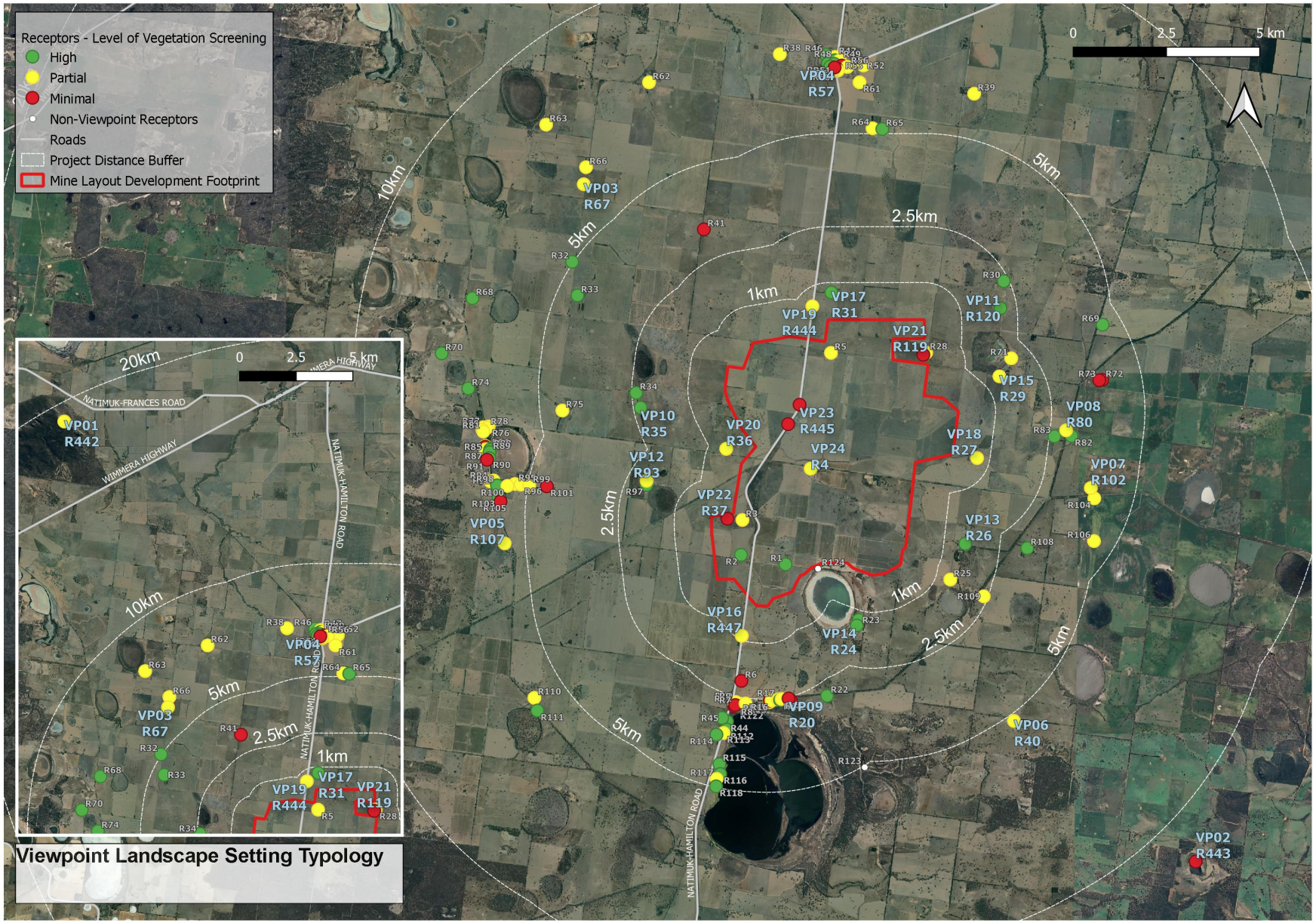





URBIS.COM.AU

# FINDINGS:
# *KEY SENSITIVE VIEWPOINTS*

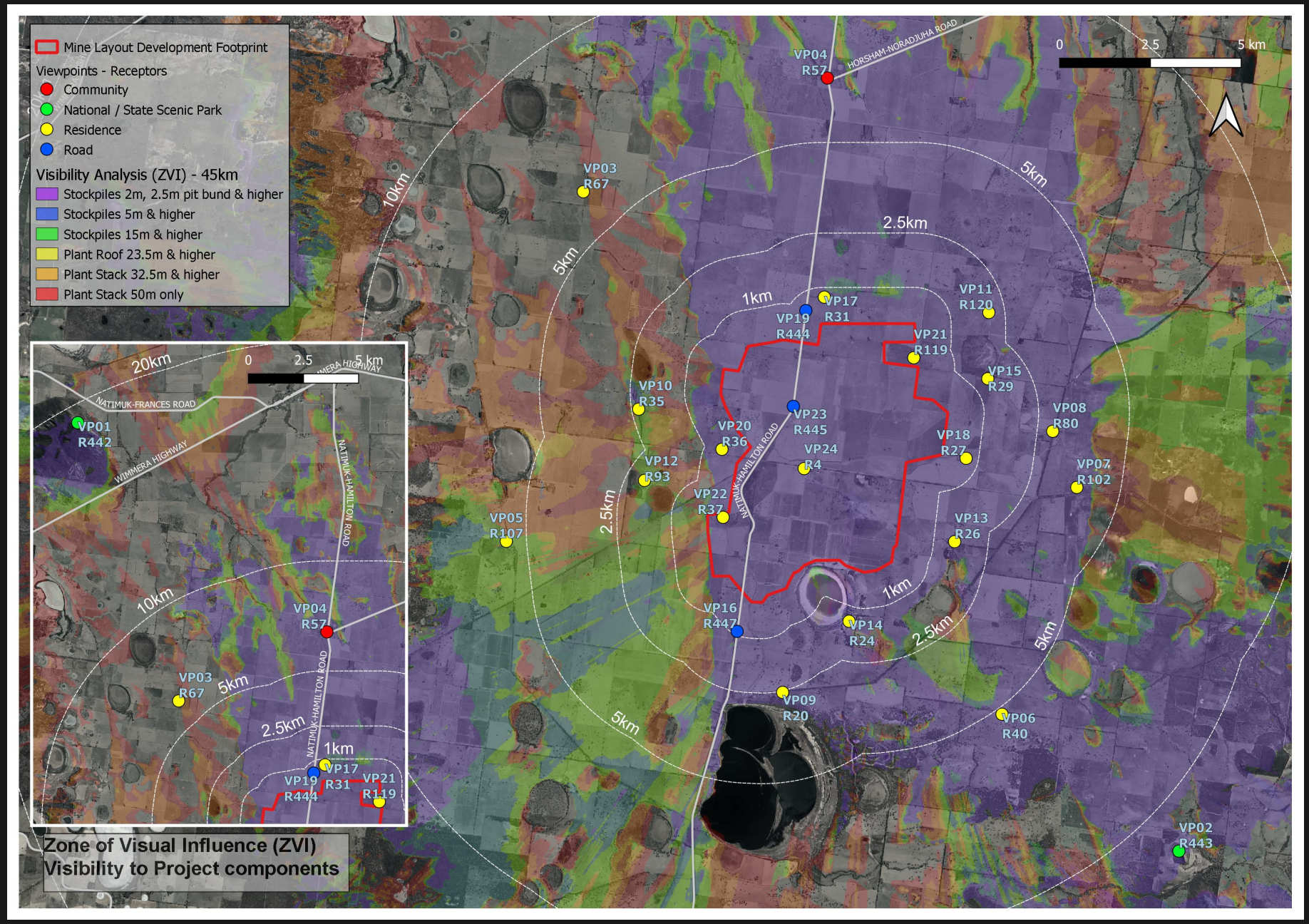
- Rural residences and settlements.
- Recreation and tourist attractions, e.g., Mt Talbot and Mt Arapiles/Tooan.
- Tourist Accommodation, e.g., Toolondo Caravan Park.




URBIS.COM.AU

# FINDINGS: *VISUAL CATCHMENT ANALYSIS*

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




URBIS.COM.AU

# VIEWPOINT 01 – MT ARAPILES




URBIS.COM.AU

19km from closest element

# VIEWPOINT 02 - MT TALBOT

11km from closest element

Existing

Wireframe - During mining ~ year 20

URBIS.COM.AU

# VIEWPOINT 21 - R119

## QUICK SINCLAIR RUSSELLS RD, NORADJUHA




URBIS.COM.AU

140 metres from closest element

# VIEWPOINT 22 – R37

## NATIMUK-HAMILTON RD, CLEAR LAKE

78 metres from closest element

Existing

During mining ~ year 18

URBIS.COM.AU

# 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 |
|---|---|---|---|---|
| *Viewpoint 18* | H | M-H | H | M |
| *Viewpoint 20* | H | M | H | M |
| *Viewpoint 21* | H | H | H | M |
| *Viewpoint 22* | H | M-H | H | M-H |
| *Viewpoint 24* | H | H | H | M |

# QUESTIONS?