

Fingerboards Mineral Sands Project Inquiry and Advisory Committee Technical note

TN No: TN 010

Date: 23 February 2021

Subject: Response to IAC Request for Information – Section 10 (Landscape and Visual), questions 79-92 and 95-98.

Introduction

This technical note responds to IAC's request for information (11 December 2020, Document 16), questions 79-92 and 95-98.

This response is accompanied by a Graphics Package, which contains the additional photosimulations, impact assessment information and other map-based information requested by the IAC.

Questions and responses

10.1 Currency of references

(i) Reference

EES Chapters 8.10 (in particular, 8.10.1.2) and 9.10; Appendix A014 at page 102; Submission 813 at page 561. The Landscape and Visual Impact Assessment (Appendix A014) relies on references that range from 1975 to 2011, AS4282-1997 which was updated in 2019 and a number of references which are not Australian based.

(ii) Request

The Proponent should:

79. Confirm whether these references are the most up to date and most relevant to the Project and provide any updates as required.

80. Explain any change to the Landscape and Visual Impact Assessment required by AS4282 as published in 2019.

Question 79

The references¹ included in the Fingerboards Landscape and Visual Impact Assessment (Appendix A014) (**Project LVIA**) relate to studies or publications concerning Landscape Visual Impact Assessment (**LVIA**) theory and methodologies.

Save for AS4282-1997 (discussed next), they are current and appropriate references to inform the LVIA.

Question 80

No change to the impact assessment is considered necessary as a result of the update of AS4282 by Standards Australia from its 1997 to 2019 version. The 2019 version of the standard introduces lux

¹ Project LVIA, section 9 (References), p 102.

criteria for night time settings which are equivalent to (and in some cases less stringent than)² the criteria applied by the Project LVIA. The criteria applied by the Project LVIA are contained in the guidance document titled *Guidance Notes for the Reduction of Obtrusive Light GN01:2011* (Institution of Lighting Engineers, UK 2011) (a copy of which is extracted at Appendix B of the Project LVIA). Whilst numerical lighting modelling was not carried out as part of the Project LVIA, the risk of obtrusive light spill was assessed as low and consideration of AS4282-2019 does not change this assessment.

10.2 Views

10.2.1 Maps

(i) Reference

EES Figures 8.25 and 9.62.

(ii) Request

The Proponent should:

81. Provide a map that consolidates all sensitive receptors (Figure 8.25) and viewpoints used in the visual impact assessment (Figure 9.62).

Question 81

Provided in the attached Graphics Package (pdf pages 15-16). Note that these maps use the updated receptor maps presented in TN 004 rather than Figure 8.25 of the EES.

10.2.2 Photomontages - residences

(i) Reference

EES Chapter 8.10.3.5 and Table 9.63; Appendix A014. The EES identifies that there are 10 residences that may have views of the Project. The Landscape and Visual Impact Assessment (Appendix A014) at section 6.3 assesses the potential visual impact of the Project on sensitive viewpoints and provides single-shot photographs of relevant views. Residences 15, 19 and 22 are assessed as having potential moderate or high “initial visual modification” or “initial visual impact” (refer Table 9.63 of the EES).

(ii) Request

The Proponent should:

82. Identify these 10 residences (for example by reference to Figure 8.25 and Table 9.63), their owners/occupiers and the submission number of any submission received from the owners/occupiers of these 10 residences. [footnote in original: “This information should be provided to the IAC only in the first instance.”]

83. Select the most impacted and/or representative properties to undertake photomontages to enable the visual impact and the proposed mitigation measures to be effectively assessed (including at least Residences 15, 19 and 22 in Figure 9.63).³

² See, e.g., the recommended post curfew lux level for setting E1 ('Intrinsically Dark, Natural Areas') of 0 lux within the UK guidelines compared with 0.1 lux for the equivalent setting within AS4282:2019.

³ Note that IAC has confirmed that in this question, the reference to 'Figure 9.63' should be a reference to Table 9.63 and the references to 'Residences 15, 19 and 22' should be references to viewpoints 15, 19 and 22.

Question 82

The information requested is included in TN 012 and is provided only to IAC for privacy reasons, as requested.

Question 83

Table 9.63 refers to viewpoints 15, 19 and 22, rather than residences (or receptor numbers).

The corresponding receptor locations are as follows:

- Viewpoint 15 – receptor 6
- Viewpoint 22 – receptor 5
- Viewpoint 19 – receptor 30.

Photosimulations are included in the Project LVIA for these locations.

10.2.3 Photomontages – public domain

(i) Reference

EES Chapter 9.10.2.1, Table 9.63; Appendix A014, section 6.3. The Landscape and Visual Impact Assessment (Appendix A014) at section 6.3 assesses the potential visual impact of the Project on sensitive viewpoints and provides single-shot photographs of relevant views. Viewpoints 11 and VP17 (service corridor) and diverted tourist roads are assessed as having potentially moderate or high “initial visual modification” or “initial visual impact” (refer Table 9.63 of the EES).

(ii) Request

84. The Proponent should provide photomontages of Viewpoints 11, VP17 (service corridor) and diverted tourist roads to demonstrate the assessed visual impact of the Project and the proposed mitigation measures.

Question 84

Photosimulations from Viewpoints 11 and 17 have been prepared and are included in the attached Graphics Package (pdf pages 5-8 and 9-11 respectively).

10.3 Impact on tourist drive experience

(i) Reference

Submission 813 at pages 563-4; EES Scoping Document at 4.6; Appendix A014. The Landscape and Visual Impact Assessment (Appendix A014) provides a visual and landscape assessment of the impacts of the Projects from specific vantage points but does not provide an assessment of the visual and landscape impacts as experienced when traveling along roadways used by tourist traffic driving to and from the Mitchell River National Park.

(ii) Request

The Proponent should:

85. Provide a visual and landscape assessment of the impacts of the Project, including the impact of loss of vegetation cover, as experienced when travelling along roadways used by tourist traffic driving to and from the Mitchell River National Park (for example the Bairnsdale-Dargo Road and the Fernbank-Glenaladale Road) rather than from specific vantage points on such roadways as is currently provided. Include appropriate photomontages demonstrating how the mitigation measures proposed will avoid adverse effects on the landscape and recreational values of the Mitchell River National Park.

86. Provide a topographic profile of these roadways used by tourist traffic driving to and from the Mitchell River National Park in relation to the mine and its highest and lowest visual points.

Question 85

Tourist routes

Although there are no touring routes in the sense of recognised scenic landscapes in the immediate vicinity of the site, Bairnsdale-Dargo Road and Fernbank-Glenaladale Road provide access to tourism attractions such as Mitchell River National Park and Alpine National Park. The Project LVIA defines the sensitivity of these routes (analysed and discussed further through viewpoints RD1, RD3 and RD4 in the LVIA) as high, recognising they provide access to tourist destinations.

Further material to supplement the assessment contained in the Project LVIA of these routes is provided in the attached Graphics Package (pdf pages 18-20). This material includes a series of maps, which document the level of vegetation along various road segments, providing an indication of outward view potential, viewsheds (ZVI) and a corresponding impact assessment drawing on this information and applying the impact assessment methodology used in the Project LVIA.

Mitchell River National Park

The Project LVIA indicates that the Project is not visible from any accessible tourist nodes in the Mitchell River National Park (viewpoints 1-6).⁴ Therefore, the Project was assessed as having no visual impact on these locations.

Elevated areas that may have a view of the Project are low usage walking tracks. In most cases, the tracks are set within tall and dense forest, with limited outward views. Given this setting, and the distances to the Project (greater than 5km), any such views would be assessed as having a low visual impact according to the methodologies in the LVIA.

Question 86

Refer to cross sections provided in the attached Graphics Package (pdf pages 1 and 4).

10.4 Vantage points

(i) Reference

Submission 813 at pages 586; Appendix A014. A number of the vantage points used in the Landscape and Visual Impact Assessment (Appendix A014) appear to be low-lying.

(ii) Request

⁴ See viewpoints 1 to 6; these locations are shown on the map in Figure 19, LVIA Appendix A014, p 39.

87. The Proponent should provide information (such as topographical references or the like) for each of the vantage points discussed in the Landscape and Visual Impact Assessment (Appendix A014) in a manner that the IAC can easily understand the rationale for selection of vantage points and the relative heights and vistas of each vantage point in relation to the Project Area.

Question 87

Cross sections through all viewpoints with accompanying photosimulations have now been prepared and are contained in the attached Graphics Package (pdf pages 1-4). The sections show the elevation of each viewpoint, the elevation of the highest visible component of the Project, as well as the extent of the Project area and extent of mining activities.

The rationale of the Project LVIA for the selection of viewpoints to have a detailed assessment was to focus on those with the highest levels of visual sensitivity coupled with highest levels of visibility of the Project. This assessment has regard to viewshed analysis (ZVI),⁵ distance to the Project and vegetation screening potential.

Given the highest levels of sensitivity, and consequently visual impact, would be experienced within 2.5km of the project, the majority of detailed viewpoint assessments occurred within this radius.

Where access could be negotiated with land-owners, the site assessment, including photography, was undertaken proximate to the residence. Where access could not be negotiated, the site assessment and photography were undertaken as close as possible to the residence, typically a publicly accessible location near the driveway to the property. The specific location of Viewpoints relative to receptors can be seen in the overlay plans provided in the Graphics Package (pdf pages 15-16).

Each detailed viewpoint assessment includes an image showing the setting of the viewpoint, for example whether it was an open setting or surrounded by vegetation, as well as an image looking towards the project showing the existing "vista". Photosimulations were prepared for selected highest visual impact viewpoints, in order to convey the potential "vista" of the project during and post mining.

10.5 Lighting impacts

(i) Reference

EES Chapter 9.10.4. The EES states:

Lighting of the fixed plant components of the proposed mine will be visible from a number of locations with direct views of the sites, such as the surrounding and adjacent road network. For residences with surrounding, screening vegetation, the lighting of the project components will generally be seen as a soft glow during darkness. Refraction off clouds, when present, will make lighting more apparent in cloudy conditions than during clear meteorological conditions. The overall impact of the night lighting is expected to be low throughout the project.

(ii) Request

The Proponent should:

88. Provide details of any residences that will have a direct view of lighting of the fixed plant at night.
89. Provide details of any residences that do not have surrounding, screening vegetation that will mitigate the lighting of the fixed and moving plant at night.

⁵ Refer LVIA, Section 6.2.1, p 37 and, in particular, Figure 20, p 40.

- 90. Provide further details and lux measurements on what is meant by a “soft glow”.
- 91. Provide further details on the degree or amount of increase in the night-time lighting impacts of the Project in cloudy conditions.
- 92. Provide details of how sensitive viewpoints will be impacted by the lighting on moving components of the mine and truck movements at night.

Question 88

Kalbar considers that no dwellings will have direct views of fixed plant or buildings (i.e., the WCP, centrifuges, Fernbank siding, water pump station) that will use lighting at night (i.e., after 10pm).

The centrifuges are located at ‘inboard’ locations within the site, and are not modelled to be visible from dwellings within 2.5km of the Project Area (refer to proposed centrifuge locations shown in Figure 1).



Figure 1 Extract from Technical note TN 01 (IAC Document 42) showing proposed centrifuge locations (MV)

The WCP and associated buildings are within and screened by the existing blue gum plantation.

The Mitchell River pump station does not need to be lit at night (except for a security light and/or motion sensing light which would be minimal and baffled / screened to reduce light spill).

The rail siding will not operate in the night time period (after 10pm).

Further, Kalbar proposes to limit light spill from fixed sources in accordance with mitigation measure VL02 (Mitigation Register, EES Attachment H), which provides:

“Fixed lighting on plant and buildings will be designed to reduce the potential for light spill through measures such as focussed/targeted lighting and installation of shields or baffles.”

Question 89

A response is provided in the attached Graphics Package (pdf page 17).

Question 90-91

Although lux levels for the Project have not been modelled, Kalbar has been advised (and would commit to an obligation to ensure) that the 'soft glow' created by lighting from the Project will not exceed 0.1 lux at any surrounding dwelling, including under cloudy conditions.

Question 92

Impacts from internal mobile operations will be dependent on adoption of management measures, for example, the use of baffled / shielded lights on plant and equipment, mobile lighting units being focused internally and operating behind stockpiles. If these actions are taken, obtrusive light effects on any receivers will be low. These best practice lighting measures, e.g., as contained in Appendix B of the LVIA, will be documented in the Visual Amenity Management Plan (a plan which is foreshadowed in TN02 – Expert Recommendations, p 88, and which would form part of Risk Management Plan under the Work Plan.)

For offsite truck movements, truck lights will provide a source of direct light on public roads for Kalbar's non-preferred transport routes, however no truck movements are proposed along the private haul road to the Fernbank siding at night, therefore no unreasonable truck light impacts would arise from this transport option.

10.7 Consultation with directly impacted landowners

(i) Reference

Appendix A014, section 7.3. The Landscape and Visual Impact Assessment (Appendix A014) states that "Affected landholders adjacent to the Project Area will be consulted on a case by case basis regarding the appropriate mitigation and avoidance measures which may be available".

(ii) Request

The Proponent should:

95. Provide advice about direct consultation with affected landowners adjacent to the Project Area about visual impacts and mitigation options that has been or will be undertaken, including landscape screening.
96. Clarify the process through which requests for landscape screening from affected landowners will be managed, assessed and approved.

Questions 95-96

Kalbar has had informal discussions with nearby landowners, however the procedures for these to be further progressed would be developed as part of the Visual Amenity Management Plan.

Kalbar proposes that the Visual and Landscape section of the Mitigation Register (EES Appendix H) be expanded to include the following concerning offsite landscaping works.

VLx: A program of voluntary landscape mitigation works must be offered, and if accepted, made available, to the owners of dwellings within 1km of the mine. The offered mitigation works must include planting and/or other works on the owner's land to reduce direct views of mining activity from dwellings.

The processes associated with providing these offsite landscaping works will be set within the Visual Amenity Management Plan.

Whilst specific measures would need to be approved to the satisfaction of the Minister (in approving the Work Plan), Kalbar suggests the Plan should make provision for the following:

- timing for the offer to be made (e.g., within 3 months of commencement of construction) to landowners and how long it must remain open for;
- if accepted, the landscaping plan to be prepared in consultation with the relevant landowner;
- the landscaping to be carried out on the landowner's property at the cost of the Proponent;
- details concerning:
 - plant species and expected height and spread of plants at maturity; and
 - maintenance requirements (e.g., maintenance by the Proponent for up to two years from planting).

10.8 Vegetation screens

(i) Reference

Appendix A014, section 7.1.3. Vegetation screens are proposed for foreground visual screening.

(ii) Request

97. The Proponent should provide advice on the effectiveness of using vegetation screens to ameliorate visual impacts associated with the Project (VL01; VL06) including proposed vegetation types and how vegetation screens will be established and maintained.

98. The proponent should provide advice on the proximity of potential vegetation screening to residential or other structures, and whether the proposed vegetation would contribute to any change in potential bushfire risk or impact for any properties identified.

Question 97

Examples and supporting information concerning vegetation screening is provided in the Graphics Package (pdf pages 21-23)

Question 98

Defendable space would need to be maintained around dwellings and bushfire risk assessment associated with all proposed landscaping will be required. This should be assessed at the time landscaping plans are prepared.

Attachments:

1. Graphics Package (pdf pages 1-23).