Visual Impact Addendum to the Assessment Report

Wandoan Coal Project

A report prepared by

Integral
landscape architecture
& visual planning

August 2009

This report was prepared by:

INTEGRAL
Landscape Architecture & Visual Planning

20/8 Bunton Street
Scarborough QLD 4020
Phone: 07 3880 0847
Fax: 07 3880 1659
john@ilavp.com

Contents

Glossary ii

Executive Summary iii

1 Introduction 1
1.1 General
1.2 Project Background
1.3 Description of Study Area
1.4 This report

2 Description of the Proposed Development 4
2.1 Introduction
2.2 Modification to the Wandoan Coal Project
2.3 Mining Plan Wubagul Pit
2.4 Course and Fine Material Dumps adjacent to Austinvale Pit

3 Potential Impacts 7
3.1 General
3.2 Visual Sensitivity
3.3 Visual Effects
3.4 Visual Impact
3.5 Visual Impacts in South East Sector
3.6 Visual impacts in other Sectors

4 Mitigation Measures 13
4.1 At Site Treatments
4.2 At Viewer Location Treatments

5 Residual Impacts 18

6 Conclusions 18

7 Summary of Mitigation Strategies 18

8 References 18

List of figures

Figure 1.1 Location Plan
Figure 3.1 Land Uses around MLAs
Figure 3.2 Photomontage Locations
Figure 3.3 Photomontage at Wandoan Cemetery
Figure 3.4 Photomontage at Leichardt Highway south of Wandoan
Figure 4.1 Visual Mitigation Strategies

Glossary

Contrast	The degree to which a development component differs visually from its landscape setting
Integration	The degree to which a development component can be blended into the existing landscape without necessarily being screened from view
Screen	The degree to which a development element is unseen due to intervening landscape elements such as topography or vegetation.
Visual Effect	A measure of the visual interaction between a development and the landscape setting within which it is located
Visual Impact	A measure of a joint consideration of both visual sensitivity and visual effect that considered together determine the visual impact of a development
VMU	Visual Management Unit is a landscape area with similar visual characteristics
View Zones	
Primary View Zone	Is the primary view from such locations as a lounge room, front door, verandah or outside entertainment area
Secondary View Zone	Is a view zone of less significance to a homestead but still of some significance such as a view from a driveway or a bedroom
Tertiary View Zone	The least significant view zone around a homestead from utility areas such as work sheds, cloths line, etc
Visual Sensitivity	The degree to which a change to the landscape will be perceived in an adverse way

Executive Summary

The visual assessment outlined in this report considered the visual impact of amendments to the Wandoan Coal Project (the Project), since the release of the Environmental Impact Statement (EIS). The information presented builds on the EIS Volume 1, Chapter 19 Visual Amenity Technical Report TR 19-1-V1.5 and should be read in conjunction with this technical report.

The Project is located within Mining Lease Applications (MLAs) 50229, 50230 and 50231, immediately west of the Wandoan township, approximately 65 kilometres (km) north of Miles, in the Dalby Regional Council (former Taroom Shire), Queensland.

Specifically the study defined the visual effect of the changes to the open cut mine pits on the landscape settings of the locality. The study also evaluated and defined the visual sensitivity of various view locations around the amended Project areas.

The decision to not mine the portion of the Frank Creek Pit closest to Wandoan does not alter the visual impact in that location during the day as that part of the pit is screened from the township. This change has benefits in terms of further reducing night lighting effects on the town.

The creation of the Wubagul Pit creates visual change and high visual effects on some immediate surrounding areas. These mining activities will be visible from local sensitive view locations such as the Leichhardt Highway south of Wandoan and some rural homesteads. The removal of the Woleebee South Pit from the mining schedule will have a visual effect and impact reduction on some homesteads in this locality. Such reduction in impact will be one of timing as other Woleebee Pits will have impacts on sensitive receptors in this location.

Initially high visual impacts will result from the combination of high visual effects of the mine pit areas and the high sensitivities of homesteads and the highway relating to the Wubagul Pit. These impact levels will be sustained until landscape rehabilitation is carried out on completion of mining of the eastern edge of this pit and will be completed in a 2 year period.

In summary the Wubagul Pit, will have high initial visual effects and impacts. However with limited overburden removal allowing for high quality rehabilitation of landform and land cover in a short term time frame will result in low visual impacts in the longer term.

1. INTRODUCTION

1.1 General

This Addendum to the EIS technical report has been prepared by Integral Landscape Architecture and Visual Planning, for Parsons Brinckerhoff (PB) on behalf of the Wandoan Joint Venture

Parsons Brinckerhoff has been commissioned to prepare a Supplementary Environmental Impact Statement (EIS) for the Wandoan Coal Project. This Visual Assessment Addendum to the Assessment Report is a component of that Supplementary EIS, and should be read in conjunction with the EIS technical report, TR 19-1-V1.5. The objective of this Addendum to the technical report is to ensure that all visual impacts, direct and indirect, are fully examined and addressed.

The aims of this Addendum to the technical report are:

- To examine the changes to the proposed development's potential impact since publication of the EIS on the landscape and visual amenity of the Site, it's local area and receptors within it
- Recommend mitigation measures to be taken to mitigate all adverse impacts associated with changes to the proposed development

1.2 Project background

In addition to the project described in the visual assessment report of the Project as defined in the initial EIS, there have been a number of changes to the operations. Some of these have visual significance.

These include:

- the scheduling of mining has been modified for Frank Creek Pit due to its proximity to Wandoan township
- the deferral of mining of Woleebee South Pit to a future time
- addition of Wubagul Pit to the south of Wandoan township, adjacent to the Leichhardt Highway to off-set the scheduling changes to Frank Creek Pit and Woleebee South Pit
- identification of an approximate outline of Glen Haven Pit between Woleebee South Pit and Wubugal Pit, with no mining scheduled within the first thirty years of operation of the mine

These changes are illustrated in part on Figure 1.1.

1.3 Description of study area

The boundary of the MLA areas, including the southern boundary is defined by the orange line in figures of the Supplementary EIS, such as Figure 6-1-SV1.3. As discussed in Chapter 1 Introduction, section 1.2.1, the boundaries of the MLA areas have been modified following further consultation and negotiations with landholders and are illustrated in Figure 1.1.

1.4 This report

This report outlines the visual assessment of elements of the Wandoan Coal Project that have been modified since the release of the EIS and is a technical report supporting the supplementary EIS. The report considers only the elements that are likely to have a significant visual impact and not other elements that may have minor and insignificant visual effects and impacts and or have been considered appropriately in the original visual assessment report.

The methodology used in this report to assess visual effect, visual sensitivity and impact is the same as that used and described in the initial report; see EIS Volume 1, Chapter 19 Visual Amenity technical report TR 19-1-V1.5, section 2.0.

Similarly the existing environment has been described in the Visual Amenity technical report TR 19-1-V1.5, section 3.0 and there has been no need to extend or enhance that description in this report.

The locality was not revisited by John van Pelt subsequent to the initial field assessment, but the relevant areas, e.g. areas to the east of the MLAs, including the Leichardt Highway, north and south of Wandoan, the Wandoan Cemetery and Wandoan were thoroughly assessed in earlier site visits. Photography for the photomontage created of the Wubagul Pit was completed by PB staff.

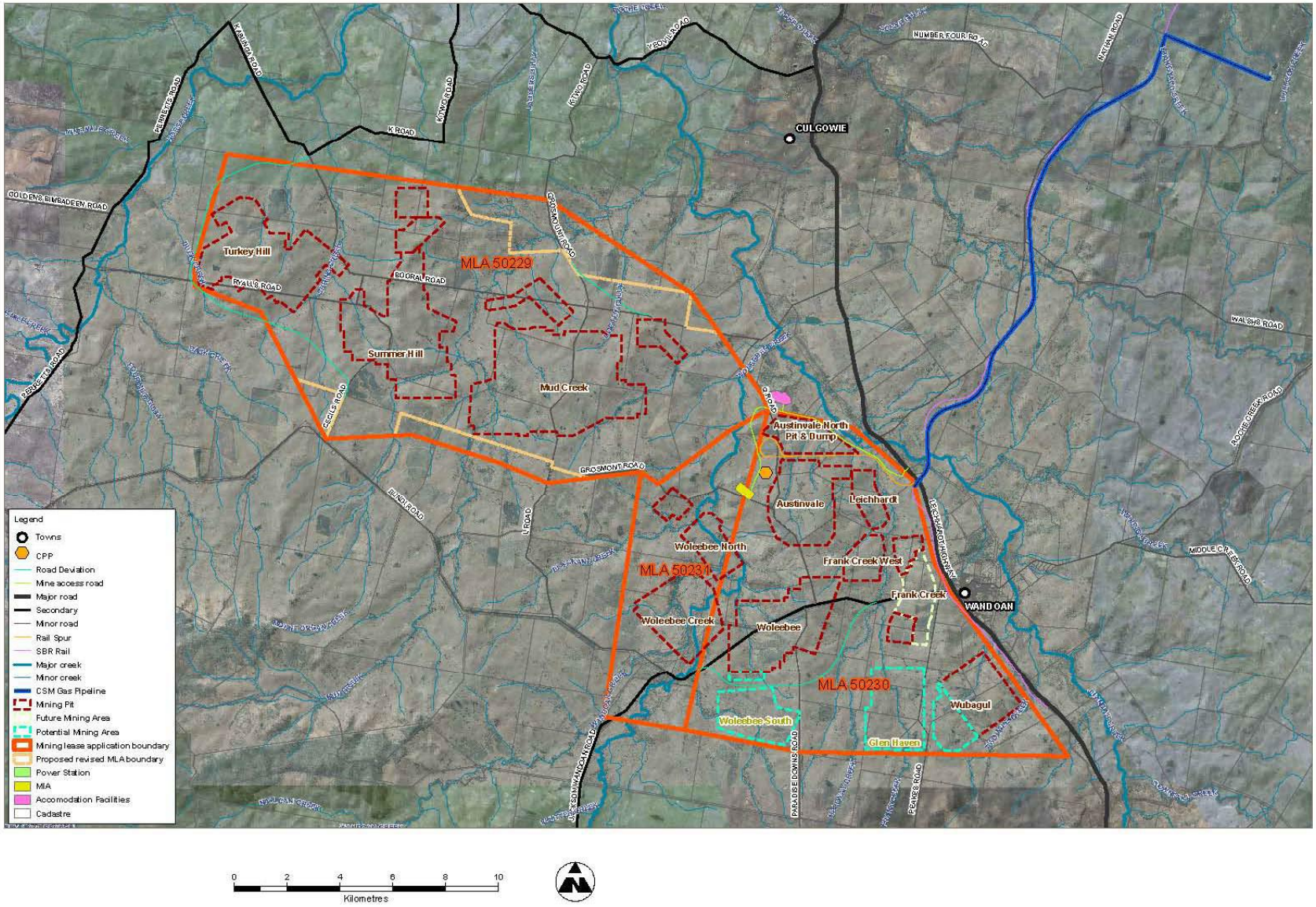

Figure 1-1 Project Location Plan

2. DESCRIPTION OF PROPOSED DEVELOPMENT

2.1 Introduction

The description of the Wandoan Coal Project is generally as provided in the EIS technical report, TR 19-1-V1.5. However is response to submissions on the EIS, an increased understanding of the coal resource, and further feasibility design, the following changes to the Project have been made:

- acquisition of properties by the WJV, or properties that are subject to acquisition negotiations with the WJV, thereby decreasing the number of sensitive receptors
- changes to the mining schedule of Frank Creek Pit
- the deferral of mining of Woleebee South Pit to a future time
- addition of Wubagul Pit to the south of Wandoan township, adjacent to the Leichhardt Highway to off-set the scheduling changes to Frank Creek Pit and Woleebee South Pit
- changes to the coarse and fine (tailings) rejects disposal strategy, mostly associated with Austinvale North Pit
- realignment of the Jackson Wandoan Road
- refinement of the proposed upgrading of the existing Wandoan town potable water supply treatment facilities
- an additional option to develop combined cycle gas fired generators of less than a total of 10MW electrical output for construction and long term emergency power, as an alternative to use of diesel generators

2.2 Modifications to the Wandoan Coal Project

The visual character of the modifications to the Project, are similar to those described in the initial assessment report and relate to the external views of them from sensitive receptors.

From a visual perspective, the modifications to the Project that have visual significance include:

- acquisition of properties by the WJV, or properties that are subject to acquisition negotiations with the WJV, thereby decreasing the number of sensitive receptors and therefore in part decreases impact of the initial proposal
- changes to the mining schedule of Frank Creek Pit removes visual effects, including night lighting, within 2km radius of Wandoan, removing impacts from these new non mined areas as they relate to Wandoan and parts of the Leichardt Highway.
- changes to the fine and course reject strategy, mostly associated with Austinvale North Pit creating a need for an out-of-pit spoil dump in the vicinity.
- the deferral of mining of Woleebee South Pit to a future time is off set in visual terms during the first 30 year time frame by the creation of Wubagul Pit, depending on its relationship with sensitive receptors.

- addition of Wubagul Pit to the south of Wandoan township, adjacent to the Leichhardt Highway to off-set the scheduling changes to Frank Creek Pit does impact in part on the highway and potentially some rural homesteads that have not been previously affected.
- realignment of the Jackson Wandoan Road does redistribute visual effects on this road, with mining now occurring on both sides of this realigned roadway. In the initial proposal mining was generally only to the west and north of the roadway. Mining will now occur to both the east (Wubagul Pit) and west (Woleebee Pit) of the realigned roadway

Components of the Proposal were defined as major and minor visual elements in the initial visual assessment report, EIS technical report TR 19-1-V1.5. The Wubagul Pit is the only major element within the amendments to the operation. The visual character and visual effects of various components of mine pit creation and rehabilitation have been defined in the EIS technical report TR 19-1-V1.5 and apply to the creation of the Wubagul Pit.

These elements include:

- mine pits
- vegetation and topsoil stripping
- overburden removal and emplacement, including draglines
- coal extraction
- rehabilitation

2.3 Mining of Wubagul Pit

Wubagul Pit is proposed to be mined in two periods. The first occurs in Year 3 to Year 6. The second period of mining occurs from Year 25 to Year 30. The first is the critical as it occurs adjacent to the visually sensitive eastern boundary of the MLA. Following the first two years of mining the visually sensitive outer eastern embankment of the out of pit emplacement area will be rehabilitated and provide screening for operations to the west of it.

The mining completed in the second period will be screened from the sensitive eastern viewing locations by existing topography and the eastern part of the pit that was mined and rehabilitated in Years 3-6.

Visual Significance

The eastern part of Wubagul Pit will be visible or partially visible from a number of viewing locations along the eastern edge of the MLA.

As with other mine pits, Wubagul Pit will modify existing landscape values with a range of potential visual effects. These visual effects will change through time and are dependant on how much of the mine areas are seen in a view. Also significant is the stage of the operation. Operations from the removal of land cover, to removal of overburden and coal extraction all have a high visual effect. However many mine areas are restored within two years of coal extraction, this reduces the visual effect levels significantly and limits high effects to a two year operational band in these mine pits.

2.4 Out-of-Pit Spoil Dumps adjacent to Austinvale North Pit

There is some change in the Project in the vicinity of the Austinvale Pits. As part of the revised coarse and fine rejects (tailings) disposal strategy, overburden from Austinvale North Pit will be excavated and stored to the east of Austinvale North Pit.

In the initial years of operation, the fine reject material will be stored in a tailings dam constructed as part of Austinvale North Pit. The dam will have a retaining wall with an elevation of 20-25m and cover an area of several hectares.

Visual Significance

The visual significance of these elements relates more to their location close to the sensitive receptors of the highway and the Wandoan Cemetery. What will be important is to determine the extent of the visibility of these elements from these locations.

Their visual effect will be similar to that created by other overburden emplacement elements. Initial visual effects will be high until earth forms are consolidated and rehabilitated.

In this way it is the visual effect of the tailing dam's earthen retention wall rather than the horizontal spread of the tailing dam that does not project beyond the MLA boundary.

3. POTENTIAL IMPACTS

3.1 General

The modifications to the Project alter the potential visual impact on sensitive receptors and land uses surrounding the Project site. These include: homesteads; the Leichhardt Highway; the Wandoan Cemetery; and Wandoan itself.

The visual impact of the modifications is determined in a similar way to the initial operations defined in the EIS technical report TR 19-1-V1.5.

For a visual impact to occur there has to be visibility of the Project area, e.g. the Wubagul Pit. For areas that have visibility, a sensitivity rating is applied based on land use type and distance from the point of viewing to the MLA areas that are seen. Further information on visibility and sensitivity is provided in the EIS technical report TR 19-1-V1.5.

3.2 Visual Sensitivity

Visibility and sensitivity of the changes to the Project was determined by evaluation of maps, aerial photography, photomontage and the initial field investigations. The Project site and surrounds were divided into four major sectors to determine visibility and sensitivity of the Project. These sectors are north east sector; south east sector, south west sector and north west sector. The Wubagul Pit and Austinvale North Pit occur in the south eastern sector.

Relevant land use types in the locality of the MLA areas in relation to the proposed modifications include:

- Wandoan
- Rural Residences
- Special Places, e.g. cemetery.
- Leichhardt Highway
- the Jackson Wandoan Road.

All of these locations have been given a sensitivity rating. In summary the most sensitive locations with regards to the changes in the Project remain: residences; the town; and the cemetery. Of lower sensitivity are the highway then sub regional roads such as the Jackson Wandoan Road and then local roads with the lowest sensitivity being rural lands.

These visual sensitivities have been applied to the land use zones and the land uses around the MLA areas are illustrated in part in Figure 3.1 and are discussed below in relation to the various sectors around the MLA areas.

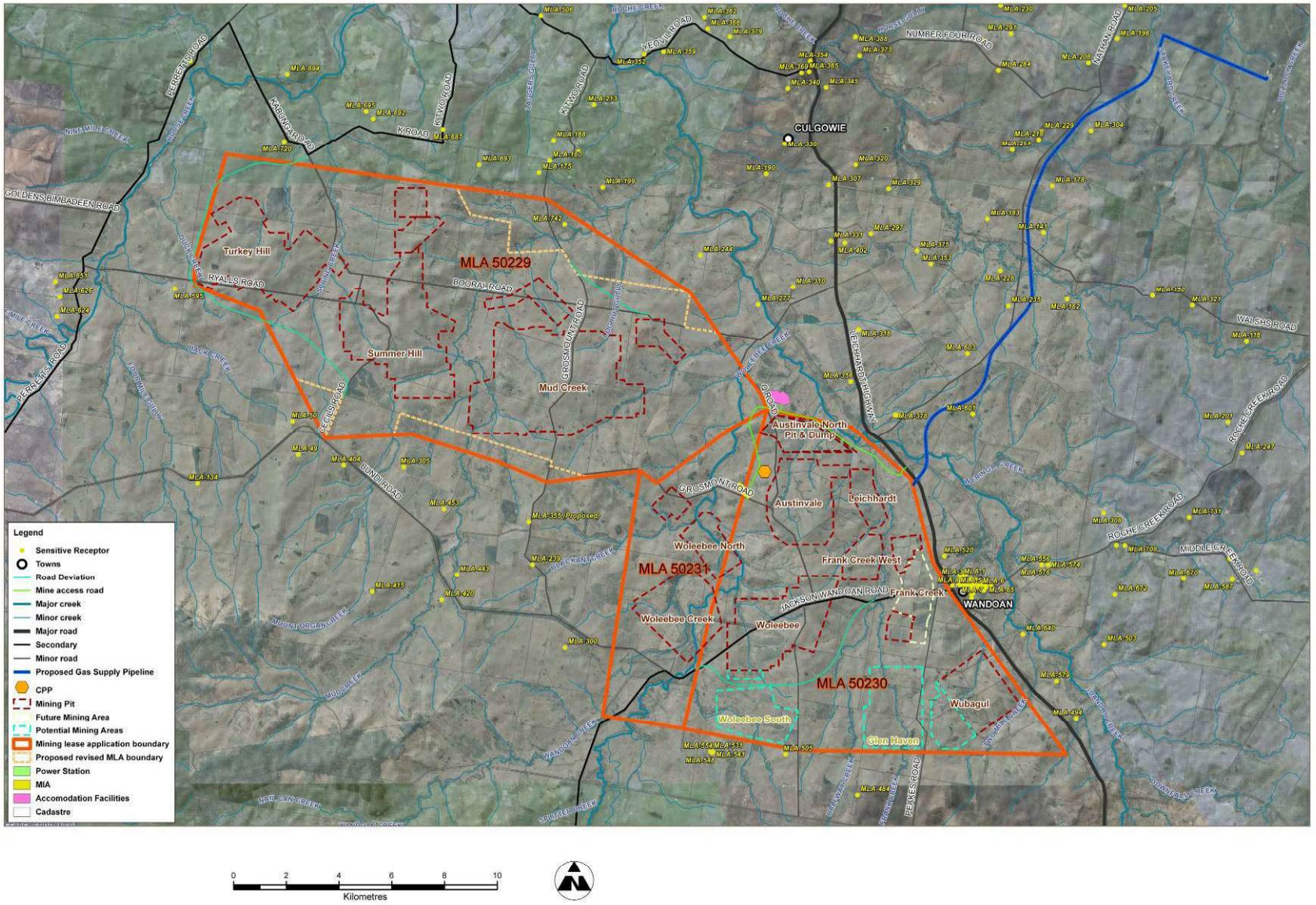

Figure 3-1 Locations of Sensitive Receptors

3.3 Visual Effect

The visual effects created by the modification to the Project are the same as applies to those that were part of the original Project description and the visual effects are described in the EIS technical report TR 19-1-V1.5, in Section 5.2.

Namely the creation of the Wubagul Pit and the overburden emplacement area adjacent to the Wubagul Pit will create the spectrum of visual effects created by vegetation clearing, mining and rehabilitation processes. Initial visual effect levels associated with vegetation clearing and the placement of out of pit overburden will create a high visual effect. The rehabilitation operations of restoring land forms and revegetation lower this visual effect to moderate and low.

Lighting at Night

The major change to night lighting on sensitive receptors will be created by the changes in lighting effects in Frank Creek Pit and operations, Years 3-6 in Wubagul Pit.

In the Frank Creek Pit, operations have been removed within a 2 km arc around Wandoan. The night glow effect will also be reduced as a result of this set back of night operations. While such effects were not considered significant and certainly temporary, removal of operations from the immediate proximity of Wandoan further reduces these potential impacts.

The light effects from the Wubagul Pit will have some potential effect on residences in that location, but visual effects on the highway itself will be limited as long as direct light effects are avoided. Such effects should be avoided for safety reasons.

Photomontage illustration of Visual Effect

The visual effects of the modifications to the Project, including night light effect are illustrated in part by photomontage imagery from two locations. These locations were selected from a ground survey as representative of potential visual impacts from the changes to the Project namely the Wandoan Cemetery north of Wandoan and a site on the Leichardt Highway south of Wandoan, see Figure 3.2.

The photomontage images have been constructed using conventional camera image and computer 3D modeling. The techniques have been defined in EIS technical report TR 19-1-V1.5 in Section 5.2.

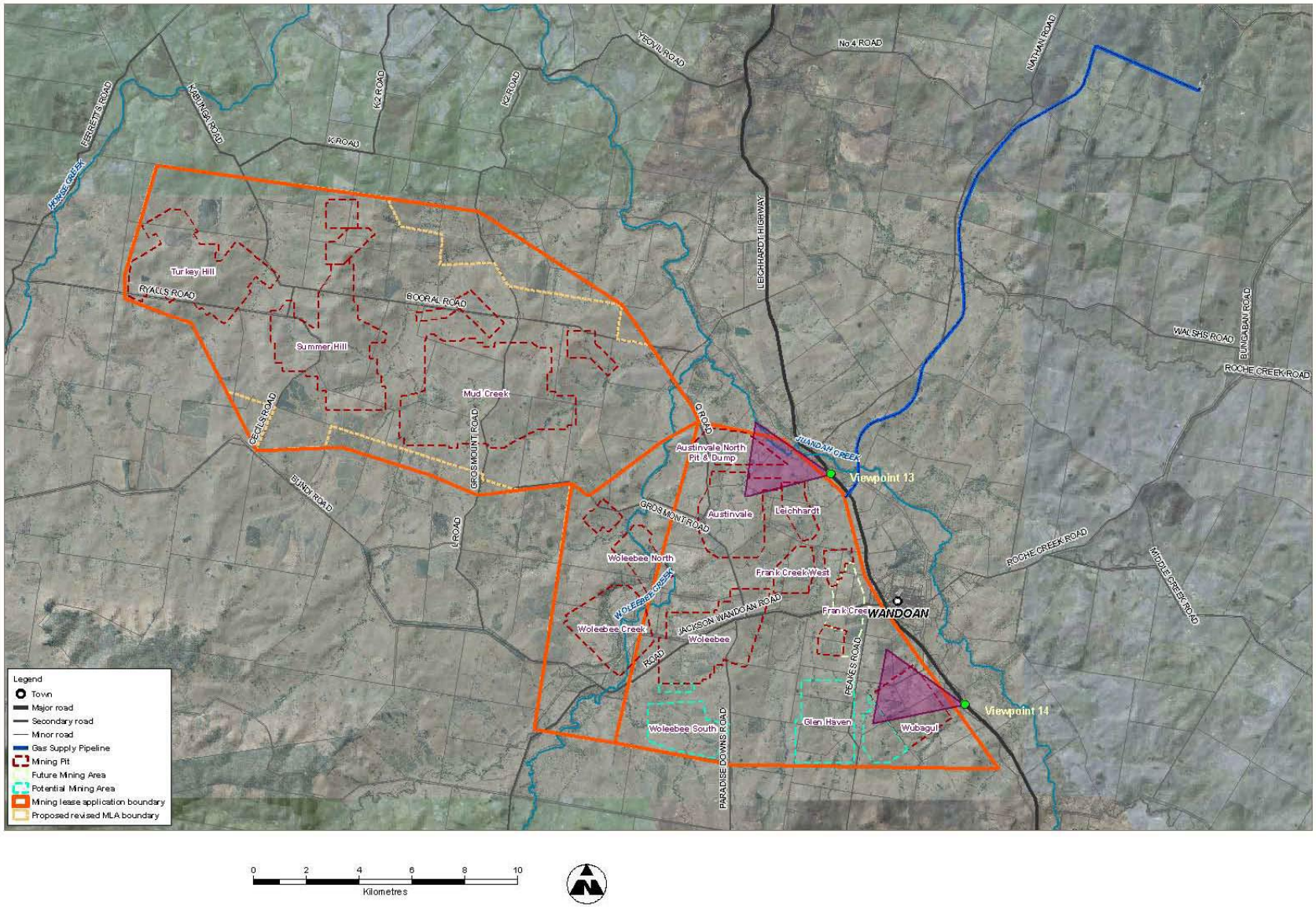

Figure 3-2 Additional Photomontage Viewpoint Locations

3.4 Visual Impact

The visual impact created by the modifications to the Project within the MLA areas is created by the changes to the mine pits and how they are perceived from various viewing locations around the MLA areas.

Visual impact continues to be determined by considering visibility and sensitivity of viewing locations and the visual effect of the operations as seen from those locations. The visual impact of the changes to the mining operations was considered in relation to the one effected view sector around the MLAs, namely the south east sector. This sector contains all the sensitive receptors of significance to the modifications to the Project, namely Wandoan, the Wandoan Cemetery, the Leichardt Highway and rural residences in this sector.

A result of further property acquisitions by the WJV has decreased the number of sensitive receptors around the MLA areas by 19 residences.

3.5 Visual Impacts in the South East Sector

Visual impacts in the South East Sector were addressed in the EIS technical report TR 19-1-V1.5, section 5.3.2.

Visibility and Visual Sensitivity

The south east sector contains the township of Wandoan; the Leichhardt Highway; sub regional and local roads; some rural residences; and the Wandoan Cemetery. This sector is dominated by open grassland with some woodland areas.

Due to limited roadside vegetation and the Project's close proximity to the highway, Leichhardt and Austinvale Pits, north of Wandoan, and Wubagul Pit south of Wandoan, will be seen from the highway. As these pits are in the foreground of the highway, a high visual sensitivity exists for this view zone.

In a similar way, the Cemetery, the town and any rural homesteads along the highway will also have a high sensitivity if visible.

However, the modifications to the Project will not be noticeably visible from the Wandoan Township due to the small ridge running adjacent to the Leichhardt Highway west of the town and the modified operational work area that creates a 2km buffer around the town.

Further south of Wandoan, along the Leichhardt Highway, there will be intermittent views of Wubagul Pit. Topography and roadside vegetation will assist in screening some views, however at certain times, even where the pit itself is not visible, a dragline may be visible from this section of the highway.

The Woleebee Pits and areas outlined as Future Mine Areas would be visible from the realigned Jackson Wandoan Road that will generally traverse between the Frank Creek and Woleebee Pits in a south-west direction, from Wandoan, to the southern edge of the Woleebee Pit, then joining back into Jackson Wandoan Road south of the Woleebee Creek Pit.

Also in this sector are a limited number of rural residences north of the Mooyouee Peaks that would have open views to the Woleebee and Wubagul Pits.

Visual Effect

This Sector is most affected by the mine pits of MLAs 50230 and 50231. The visual effects on the most sensitive eastern areas will be limited with mining in these areas being limited in extent and time. Mining in this area will begin in this area in Year 3 in both the Frank Creek Pit (northern area) and Wubagul Pit. The Frank Creek Pit (northern portion) will be completed by Year 5, as will the first area of mining in Wubagul Pit. This will allow the quick rehabilitation of the screening outer exposed visual edge within two years of mining commencing.

Frank Creek Pit (southern area) will be mined from Years 6 to 10, with the remainder of Wubagul Pit being mined in Years 25 to 30, screened behind the rehabilitated areas mined in Years 3 to 5, many years previously. These pits and those pits further west will have no visual effect on south eastern viewing locations.

In general visual effects would remain high until rehabilitation and revegetation is undertaken. This will quickly decrease visual effects to a moderate level.

Low visual effects will be achieved when land forms and landscape pattern of grassland and scattered tree cover is achieved.

The visual effects of the overburden emplacement area adjacent to Austinvale North Pit are similar to the visual effects created by a mine pit emplacement area associated with the Frank Creek and Wubagul Pits. However the scale of these elements is somewhat smaller than those associated with the primary mine pits.

Photomontage illustration of Visual Effect

In this sector the visual effects of the changes to the Project are illustrated by photomontages from:

- Viewpoint 13: Leichardt Highway at Wandoan Cemetery
- Viewpoint 14: Leichardt Highway, south of Wandoan

Viewpoint 13: Leichardt Highway at Wandoan Cemetery – Figures 3.3

The eastern part of the Austinvale Pit North is in proximity to the sensitive cemetery location. However as Figure 3.3 a and c illustrate the workings in this location are not seen. Figure 3.3 b illustrates that a low ridge behind the cemetery screens the most elevated parts of the out of pit rehabilitation areas at the eastern edge of Austinvale Pit North in this location.

There is an insignificant faint distant glow at the Wandoan Cemetery as a result of night lighting from the mining operations. This glow has very low visual effect which is further lessened in significance by lack of use of this locality at night.

Viewpoint 14 Leichardt Highway south of Wandoan - Figures 3.4

This view location shown in Figure 3.4a is typical of the landscapes in this area adjacent to the highway in the vicinity of the Wubagul Pit. For the greater part, the small rolling hill immediately to the west of the highway will screen Wubagul Pit, however the southern part of the pit will be visible as is illustrated in the redline rendition, Figure 3.4b. This exposure is significant but is short lived as a high visual effect, quickly being rehabilitated within two years of mining commencement, so that by Year 5 the outer, screening face is rehabilitated, Figure 3.4c.

The visual effect in this locality will initially be high on a limited number of viewing locations along the highway. However this visual effect is short lived as the eastern edge of Wubagul Pit will be rehabilitated to grassland within a two year period, reducing visual effects to moderate/low. Subsequent planting of woodland trees will further reduce this visual effect to low.

The effect of night light in this location is illustrated in Figure 3.4 d and e. Figure 3.4d illustrates the existing night environment with the effect of night light illustrated in Figure 3.4e. Insignificant increases in ambient glow and small concentrations of light at low intensity reflect working nodes. In the context of the highway and night traffic this effect has no significance.

Visual Impact

The visual impact in this sector as a result of the modification to the operations associated with the Project will not significantly be altered.

The creation of the additional overburden dumps associated with fine and course rejects disposal in the vicinity of Austinvale Pits will have a low impact due to rehabilitation strategies and low visibility from critical view locations. The already minor impacts of operations on Wandoan will be further reduced by the 2km zone around the township. This will reduce any night light impacts the town will experience. The impact of the Potable Water Facility will not change from low.

The creation of the Wubagul Pit will create a short term impact on parts of the highway for a period of up to two years until the outer face of the out of pit emplacement area is rehabilitated. After five years, rehabilitation will be well advanced with vegetative cover starting to create some effect.

The impact on the highway will be moderate in the first instance and will reduce to low when rehabilitation is completed after 2 years.

The impact of Wubagul Pit on the realigned Jackson-Wandoan Road will be more significant as this road will have views onto the active face of the Pit. This will create a high to moderate impact, due to the proximity of the road to the active work areas.

3.6 Visual Impacts in the other Sectors

There is no increase in visual effect and visual impact in the north east, north west and south west sectors due to the modification in operations. There is however a small decrease in impacts resulting from the purchase of more properties surrounding the MLAs in these sectors. Such purchases remove sensitive receptors from critical foreground locations.

Integral
landscape architecture
& visual planning

Figure 3-3a
existing setting

Integral
landscape architecture
& visual planning

Figure 3-3b
red rendition of proposed pit and disposal area

Integral
landscape architecture
& visual planning

Figure 3-3c
view after construction of pit and disposal area

Integral
landscape architecture
& visual planning

Figure 3-4a
Leichhardt Highway | existing

Integral
landscape architecture
& visual planning

Figure 3-4b
Leichhardt Highway | year 5

Integral
landscape architecture
& visual planning

Figure 3-4c
Leichhardt Highway | year 5 red rendition

Integral
landscape architecture
& visual planning

Figure 3-4d
Leichhardt Highway | existing night view

Integral
landscape architecture
& visual planning

Figure 3-4e
Leichhardt Highway | year 5 night view

4. MITIGATION MEASURES

4.1 At Site Treatments

Refer to the EIS technical report TR 19-1-V1.5, section 6.2 for further discussion on At Site Treatments.

As defined in the EIS technical report, mitigation treatments will be carried out at all mine pit areas. Such treatments included land form restoration and rehabilitation planting. Such mitigation works should also be applied to the emplacement areas adjacent to the Austinvale North Pit and Wubagul Pit.

4.2 At Viewer Location Treatments

It was anticipated that 23 homesteads around the MLA areas that initially required landscape works will be reduced due to the purchase of additional lands in close proximity to the mining operations. In the same way the potential landscape works for another 27 will still require investigation for potential impacts, see Figure 4.1. Further to this, the mitigation strategy should allow for other receptors that consider themselves to potentially be impacted to be assessed, thus alleviating undue visual sensitivity to the Project.

Light Exposure at Night

Similarly the need for treatment of properties affected by night lighting will be reduced due to the acquisition of some properties closest to the mining operations since the publication of the EIS.

Sites for Specific Treatments

There are a number of public places that are impacted by the modification to mine activities. Treatment of these areas will significantly reduce visual impact and restore the integrity of regional landscape views.

These locations include:

- Leichhardt Highway, south of Wandoan
- Realigned Jackson Wandoan Road
- Treatment of these areas will require detail design by a qualified landscape architect in co-ordination with terrestrial ecologists.

Leichhardt Highway, South of Wandoan

Approximately 1km of highway south of Wandoan to screen out views to Wubagul Pit may be required. Such works may not be required due to the intermittent view being outside primary view areas and for limited distances. Further the extent of high visual effects is limited, and so the need for these works to be completed needs to be determined by more detailed site evaluation by a qualified landscape architect.

Realigned Jackson Wandoan Road

Road reserve treatments should be carried out to both edges of the re-aligned Jackson Wandoan Road to filter views to Frank Creek, Woleebee and Wubagul Pits and the Future Mining Areas in the southern area of MLA 50230.

This should consist of screen planting along the 10 km realignment. Screen planting should consist of a minimum of three rows of endemic trees planted at 3-5m centres with rows 4m apart. Selection of species should be in co-ordination with the biodiversity management plan.

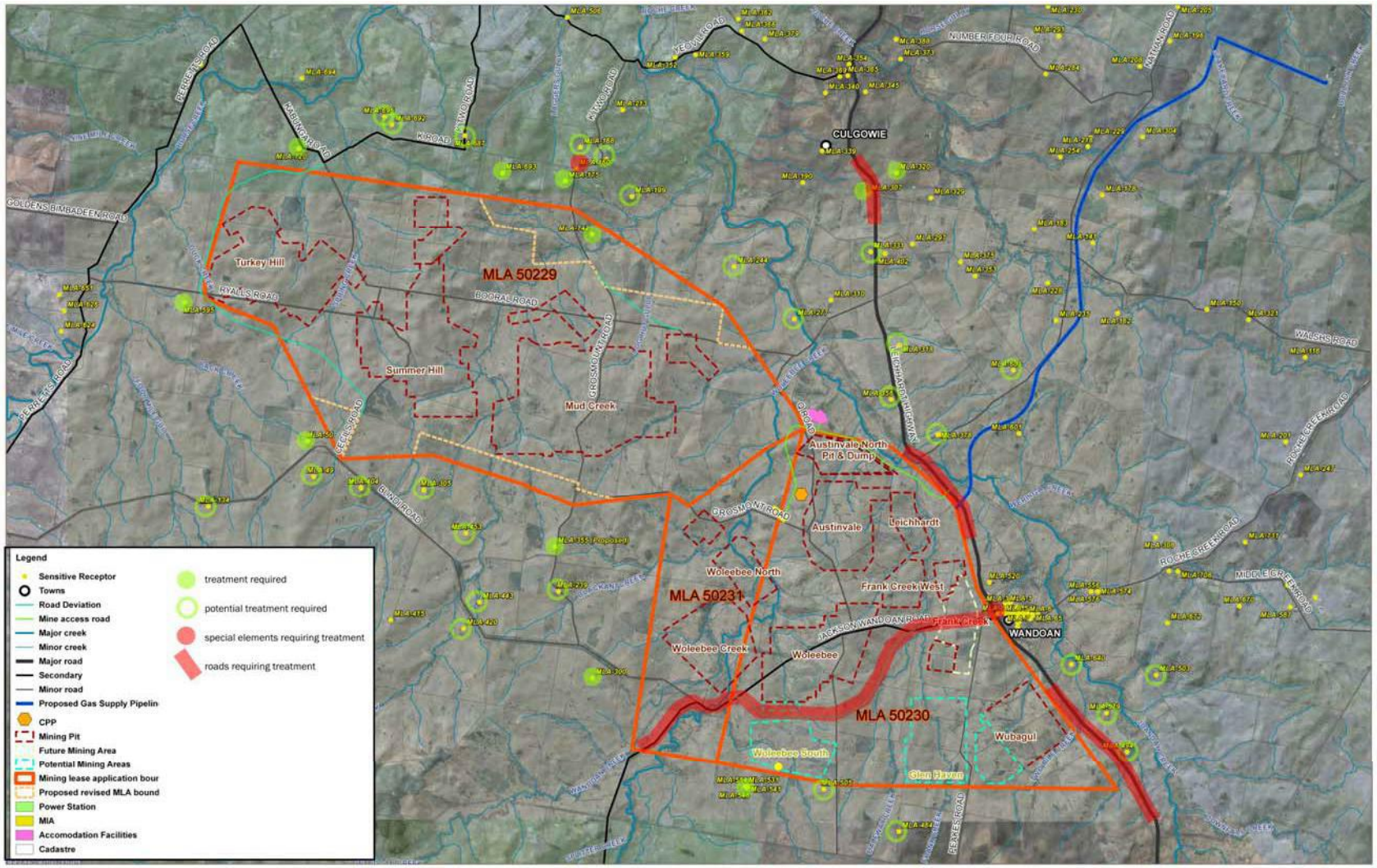

Figure 4-1
Visual Mitigation Strategies

5. RESIDUAL IMPACTS

The residual impacts of the modification to the operations associated with the Project have no significance. The creation of Wubagul Pit and alterations to the Austinvale North Pit, after rehabilitation, will only create minor and localised differences in land form. Other changes are changes to existing operations that have even less residual visual impact than that resulting from the Project as described in the EIS, refer to the EIS technical report TR19-1-V1.5, and therefore have no significant residual visual impacts due to the modifications to the operations.

6. CONCLUSIONS

The modifications to the Wandoan Coal Project create little overall change to visual effect and impact patterns of the Project. Wubagul Pit and to a far lesser extent, changes to Austinvale North Pit, create the greatest visual change as part of the amended operations.

However, the nature of the operation, with limited overburden removal allows for high quality rehabilitation of landform and land cover. This will result in low visual impacts in the longer term, as stated in the EIS technical report TR19-1-V1.5, reducing visual impact levels to low.

7 SUMMARY OF MITIGATION STRATEGIES

Recommended mitigation strategies to minimise potential impacts of the amended Project on adjoining sensitive receptors, as previously detailed in this visual assessment are summarised below:

- Landscape assessment and treatment of up to 10 homesteads around the MLAs. This is 13 homesteads less than were initially requiring treatments to mitigate impacts of the Proposal
- Landscape investigation and potential treatment of a further 27 homesteads.
- Screen planting around the western edge of the Wandoan Cemetery
- Screen planting along a 4km stretch of highway north of Wandoan and generally up to the cemetery
- Screen planting along a 1km stretch of highway south of Wandoan
- Screen planting along the realigned Jackson Wandoan Road for a distance of up to 10km on the eastern side of the road to complement treatments on the western side of the road

8. REFERENCES

The Landscape Institute with the Institute of Environmental Management and Assessment 2002, *Guidelines for Landscape and Visual Impact Assessment (Second Edition)*. Spon Press, London.