

RGP5 Port Facilities Definition Phase Study

VISUAL IMPACT ASSESSMENT

- Rev 0
- May 2008
- WV03418-MV-RP-0025



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1 Introduction

1.1. Background

This report has been prepared to assess the potential visual effects of the reclamation of land related to the proposed development of two additional berths on the western side of the Port Hedland Harbour. These works are part of the (RGP5) development in order to increase BHP Billiton's iron ore export capacity. This visual impact assessment forms part of the Environmental Referral Document under Part IV of the *Environmental Protection Act 1986* that BHP Billiton Iron Ore (BHPBIO) is preparing to assess the impacts of the project.

1.2 Project Overview

BHPBIO is seeking approval under Part IV of the Environmental Protection Act 1986 for dredging at Harriet Point on Finucane Island. The proposal is a component of the RGP5 expansion to increase the throughput capacity of BHPBIO to 205 Mtpa.

The proposal involves the dredging of approximately 3.9 million cubic metres (Mm³) of material for two new berth pockets and extensions to the existing departure channel and swing basin at Harriet Point to accommodate vessels of approximately 250,000 dead weight tonnes (DWT).

The management of the dredged material to Dredged Material Management Areas (DMMA) will be dependent on its characteristics. PASS material will be disposed offshore at the PHPA Spoil Ground 'I'. All other dredged material will be managed at DMMA B1 and B2 (**Figure 1**), with excess fines managed at DMMA A.



■ **Figure 1 Plan Showing Proposed B1 and B2 Reclamation Areas**

Although both areas B1 and B2 have a holding capacity of 1Mm³, dredged material will be stockpiled to the required height where it will remain until it is utilised by one of the BHPBIO expansion projects. Both B1 and B2 shall be filled to a height of 7m above mean sea level (MSL) behind a seawall, which shall be 5m above MSL. An environmental berm shall be constructed at the eastern edge of each of the B1 and B2 areas, where it is anticipated that the maximum height of the berms will both be 17m above MSL.

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1.3 Study Scope

The objectives of this visual impact assessment are:

- To identify publicly accessible locations from which the proposed project maybe visible;
- To assess the potential visual impacts from the identified publicly accessible locations at completion of the reclamation; and
- To identify and discuss any measures that could be implemented to minimise potential visual impact created by the proposal.

1.4 Structure of this Report

The report is structured as follows:

- Introduction and project summary description;
- Visual impact assessment methodology;
- Existing baseline conditions at locations identified as being potentially sensitive;
- Analysis of results;
- Mitigation measures; and
- Conclusions.

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2 Assessment Methodology

2.1 Overview

This assessment considers the visual impacts of the reclamation of land related to the proposed development of two additional berths on the western side of the Port Hedland Harbour. The assessment focuses on the eastern coast of Finucane Island, which is visible from Port Hedland. The section of Finucane Island which has been assessed is currently used for large scale shipping berths, with the area of land behind the berths used for storage and ancillary activities associated with the port area.

The information used for this assessment was gathered from a desktop study. Photomontages have been generated from real photographs taken of Finucane Island across Port Hedland Harbour. GIS supported viewshed analyses were not undertaken as it was considered by SKM that no useful data would be generated. The location of potential visual receptors in the local area, photomontage locations and key features within the study area are shown on **Figure 2**.

2.2 Visual Impact Assessment

Visual effects relate to changes in the views experienced by people observing a landscape. At present, there are no accepted guidelines for undertaking visual impact assessments in Australia. In view of this fact, the assessment has been carried out using a methodology generally in accordance with *'The Guidelines for Landscape and Visual Impact Assessment'* (2002) Second Edition, published by the Landscape Institute (LI) and the Institute of Environmental Management and Assessment (IEMA) (United Kingdom), with some minor modifications to reflect the site's Australian context.

To describe the visual baseline in the Port Hedland area, this study identifies the extent and nature of views of the proposed reclamation areas as observed from identified publicly accessible receptor locations considered representative of the affected views observed by the Port Hedland community. The nature and characteristics of the visual amenity and identified potential sensitive receptors of visual effects have also been described. The extent of visibility of the reclamation area has been assessed and has also taken into account local screening from existing vegetation, buildings and the surrounding topography.

The extent of the potential impact has been assessed objectively according to the sensitivity of the receptor, taking into account any potential mitigation measures. Viewpoints were assessed in the following order of sensitivity (adapted from LI and IEMA, 2002).

- **High Sensitivity** – Private dwellings and gardens where viewers are familiar with the overall scene and are likely to experience the views frequently.

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- **Medium – High Sensitivity** – Footpaths and right of ways, picnic areas, lookout points, recreational or national parks, and other informal recreational facilities where viewers gain a long view due to a slower speed of passage and where the quality of the view is part of the purpose of the visit.
- **Medium – Low Sensitivity** – Commercial premises, public facilities and schools where the viewer may be familiar with the scene but holds it in lower regard than viewers from residential properties and the surroundings are secondary to the purpose of the visit.
- **Low Sensitivity** – Surrounding road and rail networks where the viewer gains brief, transient glimpse of the view at speed.

The significance of the visual effect of the project was assessed according to the following scale, summarised from *Guidance on the New Approach to Appraisal* (Department of the Environment, Transport and the Regions, 1998c):

- **Substantial adverse or beneficial impact** - the development would cause a significant deterioration (or improvement) in the existing view.
- **Moderate adverse or beneficial impact** - the development would cause a noticeable deterioration (or improvement) in the existing view.
- **Slight adverse or beneficial impact** - the development would cause a barely perceptible deterioration (or improvement) in the existing view.
- **Neutral** - the development would cause no discernible deterioration or improvement in the existing view.

In cases where the significance of effect is described as ‘adverse’, mitigation measures should seek to reduce or minimise this effect. However, it should be noted that the effects need not necessarily be detrimental. Management measures that may be considered where effects may be detrimental are described in **Section 5**.

The visual receptor analysis for this study was carried out from areas up to approximately 1.08km from the edge of the proposed project site. Areas beyond this distance have not been discussed as they are not considered to be significant due to the distance from the subject site, presence of screening features, landscape topography and the existing built environment.

2.3 Photomontages

Photographs were used to create a realistic photomontage consisting of a computer generated image of the proposed reclamation (sand and seawall) superimposed on the actual photographs. This process of 3D terrain visualisation uses digital graphic techniques to montage real-time photographs with computer generated images of the future landscape to illustrate how the proposed reclaimed land might actually look like to a person from a specific location.

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The process involved taking photographs with a SLR digital camera from the selected vantage points in the direction of the proposed reclamation. The GPS location and magnetic bearing of each view and the camera's focal length (to enable field of view to be calculated) were also recorded. The ArcGIS 3D Analyst extension, ArcScene was later applied to create a view of the reclamation areas and seawall that directly matched the photographs taken in the field. The input into this process included the terrain, the known coordinates of the vantage point and the photographer's calculated field of view.

The photographs and 3D views were adjusted to create one seamless view for each of the locations. Then the 3D image layer was added on top of the photograph layer. Finally, to create a realistic photographic impression, the 3D object (sand and seawall) was erased in all areas where objects (ships, jetty, etc.) are physically located in front of any 3D objects. This montaging of the photographs with the 3D view has resulted in a photo-realistic interpretation of the proposed reclamation areas from the selected locations.

The following were used as input for the modelling process for both the photomontages:

- Relevant digital photographs taken from each of the four identified receptor locations (Photoshop CS3);
- 3D CAD model of the sand and the seawall provided in DWG format;
- Contour data;
- Location and bearing data which describe the views from the receptor; and
- Reference points, used to align and check the 3D features against existing scenery features.

2.4 Site Visit

The objectives of the visit were:

- To identify the location and sensitivity of visual impact receptor sites for the project;
- To gather baseline photographs from the visual receptor locations; and
- To gather photographs from key vantage points for use in developing photomontages of the project.

The field work was conducted from publicly accessible areas and was constrained as such. The study is therefore an assessment of the site's visibility from publicly accessible areas.

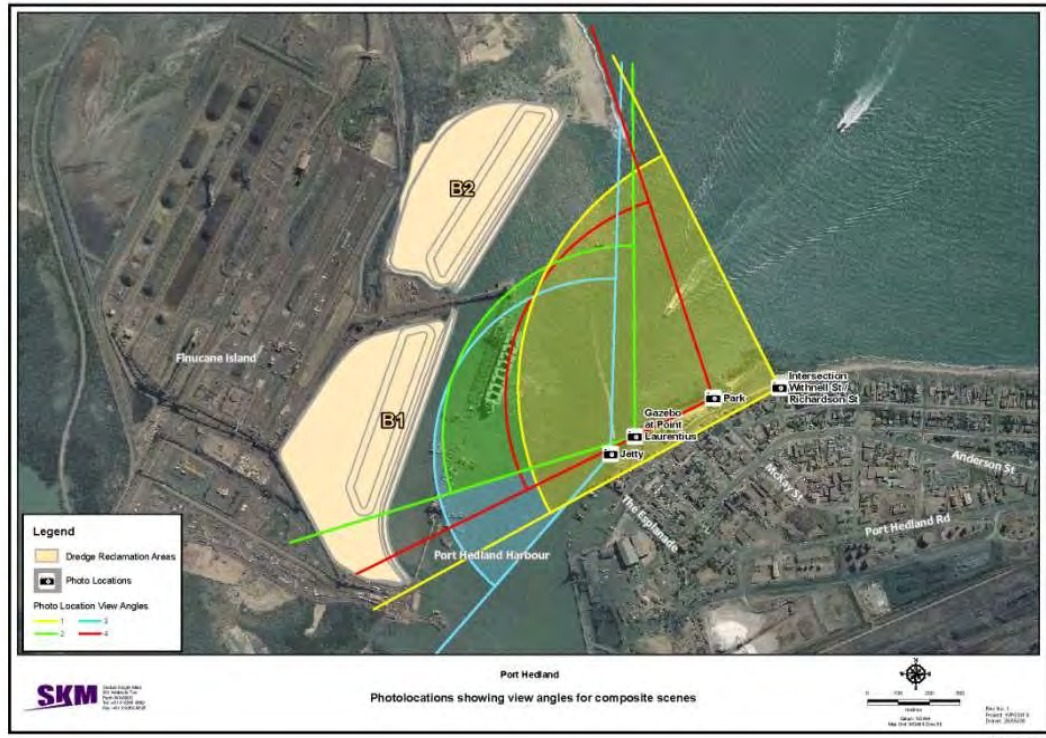
A site visit to validate the results of the desktop study of potential receptors was conducted on 18 April 2008.

A series of photographs were taken from four key vantage points, Location 1 (Intersection of Withnell and Richardson Streets), Location 2 (Gazebo at Point Laurentius), Location 3 (Jetty near

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the north-western end of Wedge Street) and Location 4 (Recreation Park at the north-western end of McKay Street). These locations are shown below in **Figure 2**.



■ **Figure 2 Plan Showing Receptor Locations**

The vantage points were identified as being suitable for one or more of the following reasons:

- The point was situated in an area likely to have a visual impact due to its proximity to a built up area; or
- During the field verification exercise, the proposed reclamation was found to have significant visibility from the point.

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3 Baseline Conditions

3.1 Site Description

3.1.1 Project Site

Existing port facilities are located at Finucane Island. The proposed reclamation areas are located on the eastern side of Finucane Island, opposite Airey Point, Port Hedland. The reclamation is proposed to fill in the existing bays and will be constrained by a seawall. Views of the reclamation areas and seawall would be available from the Port Hedland township.

In order to construct two new shipping berths and a departure area at Harriet Point, sand from the seabed needs to be removed in order to allow the large ships to dock. It is proposed that suitable sand be placed on the eastern coast of Finucane Island. The reclaimed land will then be stabilised by the construction of a seawall, which is to be constructed and armoured with gray basalt rock.

The dominant views of the reclamation will be from Airey Point and the Port Hedland township across the Port Hedland harbour. The views across the harbour will be uninterrupted by any topographical variances. As both Finucane Island and the Port Hedland township centre have a flat topography, the only interruptions provided to the views afforded are from the built environment and ships.

Currently the views of Finucane Island from Airey Point and the Port Hedland town centre are in keeping with the use of the island as a large scale shipping port. The port infrastructure dominates the view; however, a minor amount of vegetation is visible. Large ships are almost always docked within the port area in front of the area identified as B1 which is subject to the proposed reclamation works. Consequently, it is considered that the current views do not have a high visual amenity value.

3.1.2 Surrounding Area

The Port Hedland area is located to the east of the proposed development across the narrow harbour entrance and is comprised of several land use types. The Port Hedland town centre is located at the western most point of Port Hedland and is a predominantly commercial area providing for retail, service and office businesses and includes Airey Point.

The area at the western tip of Airey Point is currently zoned Town Centre and subject to a Development Plan under the Port Hedland Town Planning Scheme Number 5. The precinct objectives for the Port Hedland town centre seek to:

- (a) Consolidate the town centre status of the precinct and to redefine and optimise its visual quality and its administrative, commercial and community function;

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- (b) Consolidate existing development; and
- (c) Ensure that there is continuity in the character of old and new structures, landscaping and other improvements whilst promoting innovative approaches to design which are consistent with the climatic and cultural context of the precinct.

One of the two main residential areas within the Port Hedland region is located approximately 1km to the east of the Port Hedland town centre. The area has a residential density of R12.5/50 under the residential planning code.

An industrial area is located to the east and south east of the Port Hedland town centre. The industrial zoning accommodates the broad range of developments required to support industry and commerce within the town of Port Hedland. The subject industrial area appears to be predominantly service, commercial and light industry. A mixed business zone is located in a single block bound by Hardie, Kingsmill, Anderson and Withnell streets. A narrow park/recreation area runs along the northern coast of Port Hedland.

The relevant Town Planning Scheme map and legend, which shows the respective zones within the town of Port Hedland, is included in **Appendix A** of this report.

3.2 Visual Baseline from Potentially Sensitive Locations

3.2.1 Overview

As described in **Section 2.4**, field work was undertaken on 18 April 2008 to identify potentially sensitive locations and take photographs from key public viewpoints (visual receptors) from where the proposed reclamation is potentially visible, and refine the boundaries of the visual envelope.

Photographs were taken from four vantage points, all of which are located within the Port Hedland town centre. The photographs were taken from the town centre looking westerly across the harbour to Finucane Island. The receptor locations and their fields of view are shown in **Figure 2**. A description of each location is provided in the following subsections.

Photomontages have been generated for all four receptor locations.

3.2.2 Residential Properties (High Sensitivity)

A description of the baseline visual amenity conditions at the location of the main residential development along the waterfront promenade is provided below:

Location 1 Intersection of Withnell and Richardson Streets

This location is within the town of Port Hedland opposite the proposed dredge spoil grounds, near the water's edge and is publicly accessible. The location is just outside the boundaries of a private residential property, situated within an established residential area. This is one of the closest



residential buildings in Port Hedland to areas B1 and B2. At its closest point, the proposed development is 1.08km from this location. Looking across the water to B1, a car park is in the foreground and the view is partially obscured by berthed ships and ship loading infrastructure at Finucane Island.

Figure 3 shows the view looking across the water to area B2, the view is obscured by vegetation in the foreground, berthed ships and ship loading infrastructure coming from Finucane Island. Further to the right of area B2, Hunt Point can be seen. It is our understanding that the shipping berths will be occupied between 90 - 100 % of the time.



■ **Figure 3 Existing View from the Intersection of Withnell and Richardson Streets**

3.2.3 Look-Out Points (Medium – High Sensitivity)

Two look-out points were evaluated as part of this assessment. Description of the baseline visual amenity conditions at these look-outs are provided below.

Location 2 Gazebo at Point Laurentius

This location is within the Port Hedland town centre, directly opposite the proposed reclamation areas, on the water's edge and is publicly accessible. At its closest point, the proposed reclamation areas are 730m from this location.

Figure 4 shows the view across the water to areas B1 and B2 is obscured by berthed ships and ship loading infrastructure on Finucane Island. Further to the right of area B2 the southern side of Hunt Point can be seen.

This location was chosen as it is directly opposite the proposed reclamation areas and is a publicly accessible park. Nearby houses and temporary accommodation buildings will have a similar view, although most of them are further from Finucane Island than the gazebo. As stated previously, it is our understanding that the shipping berths will be occupied between 90 - 100 % of the time.

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■ **Figure 4 Existing View from the Gazebo at Point Laurentius**

Location 3 Jetty Near the North-Western End of Wedge Street

This location is within the Port Hedland town centre, directly opposite the proposed reclamation areas and is publicly accessible. At its closest point, the proposed development is 700m from this location. The view across the water to areas B1 and B2, as shown in **Figure 5**, is obscured by berthed ships and ship loading infrastructure on Finucane Island. Further to the right of area B2, the southern side of Hunt Point can be seen. As stated previously, it is our understanding that the shipping berths will be occupied between 90 - 100 % of the time.

This location was chosen as it is directly opposite the proposed reclamation areas and is publicly accessible.



■ **Figure 5 Existing View from the Jetty**

3.2.4 Recreational Facilities (Medium – Low Sensitivity)

A recreational park was evaluated as part of this assessment. A description of the baseline visual amenity conditions from this park looking towards the proposed development follows.

Location 4 Park at the North-Western End of McKay Street

This location is within the town of Port Hedland directly opposite the proposed reclamation areas, on the water's edge and is publicly accessible. At its closest point, the proposed development is 880m from this location.

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Figure 6 shows the view across the water to B1 and B2, which is obscured by berthed ships and ship loading infrastructure on Finucane Island. Further to the right of area B2, the southern side of Hunt Point can be seen. As stated previously, it is our understanding that the shipping berths will be occupied between 90 - 100 % of the time.

This location was chosen as it is directly opposite the proposed reclamation areas and is a publicly accessible park. Nearby houses and temporary accommodation buildings will have a similar view, although most of them are located further away from the proposed development.



■ **Figure 6** Existing View from the Park



4 Analysis of Results

This section outlines the potential visual impacts associated with the construction of the proposed seawall and the subsequent reclamation of areas B1 and B2 through the necessary stockpiling and contouring for its base and environmental berms.

Section 4.1 below outlines visual impacts likely to be experienced from specific receptors.

4.1 Visual Impact Assessment

The assessment in this section is based on the photomontage results, and uses the visual impact assessment scale summarised in **Section 2.2**.

4.1.1 Residential Properties (High Sensitivity)

The sensitivity criteria summarised in **Section 2.2** are based on the *Guidelines for Landscape and Visual Impact Assessment* published by the Landscape Institute and the Institute of Environmental Management and Assessment. Using these criteria, the location of residential development within proximity to the proposed development has been classified as “high sensitivity”.

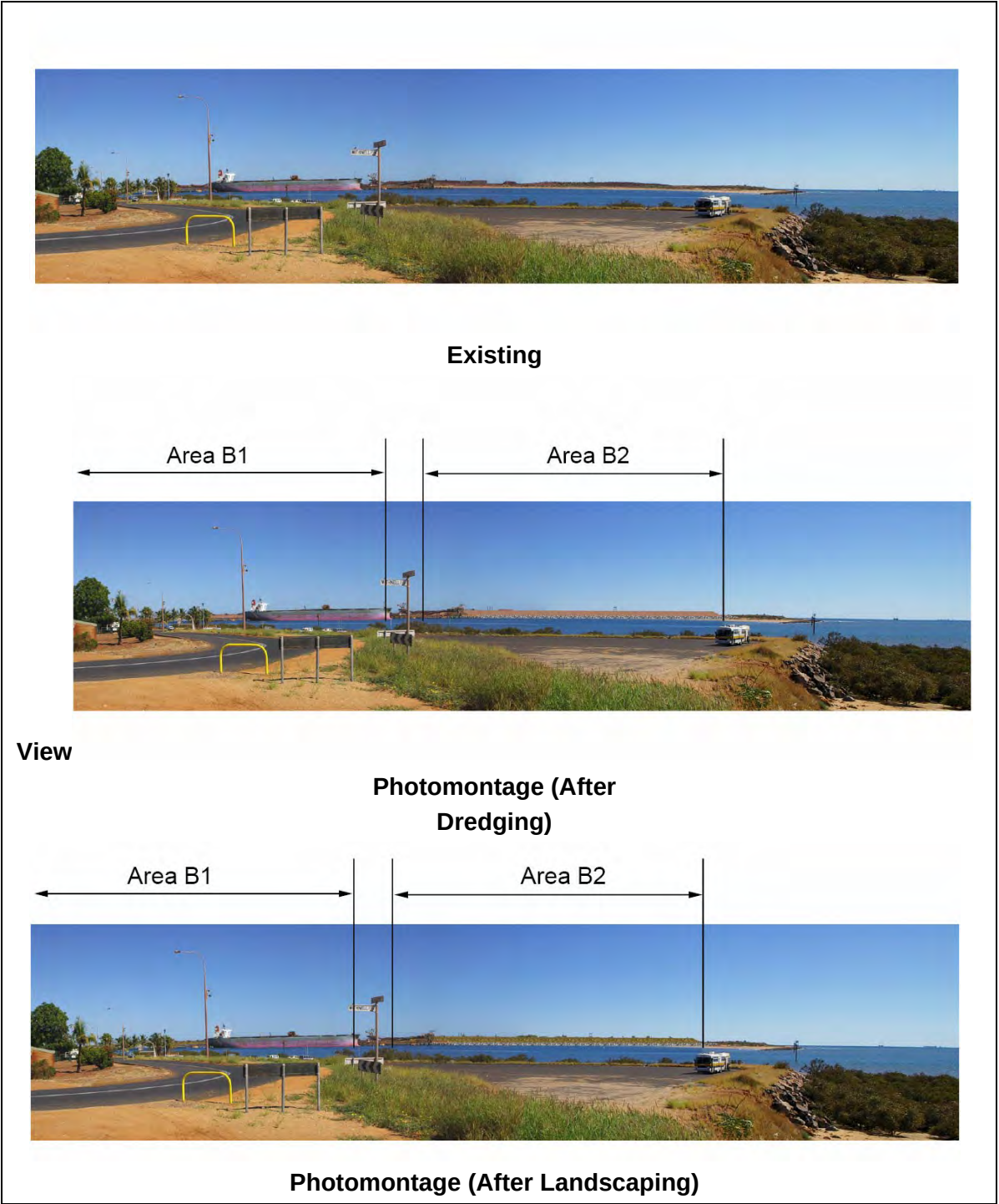
Location 1 Intersection of Withnell and Richardson Streets

As stated under Section 3.2.2, it is rare for ships not to be berthed at the ship loading docks across the water. As such, it is considered that the visual baseline applicable to the proposed B1 development area will largely remain unmodified, as the size and scale of the ships which are docked would provide a continuous, dense visual screening of this area. This is illustrated in **Figure 7**.

The proposed B2 development area will be more visible from this viewpoint, with the current setting comprising of existing industrial infrastructure and activity, stockpiled materials and a dense row of low-lying scrubland near the shoreline as its backdrop. This backdrop setting is commensurate with views of Finucane Island taken from other vantage points along the mainland shoreline, which do not impede upon views to any significant landscapes or features beyond this area. As such, it is considered that the proposed seawall and environmental berms within this location would not impede upon any prominent views but instead provide a form of screening of the existing industrial activity. It is noted that the outlook from this viewpoint towards Hunt Point and the outer Indian Ocean, will remain unimpeded by the proposed works.

Taking into consideration that this receptor is 1.08km from the proposed development, coupled with the existing infrastructure and setting within this section of the port area, the visual impacts of the proposed works are considered to be ‘moderate-adverse’.

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■ **Figure 7 Existing View and Expected View from the Intersection of Richardson and Withnell Streets**



4.1.2 Look-Out Points (Medium – High Sensitivity)

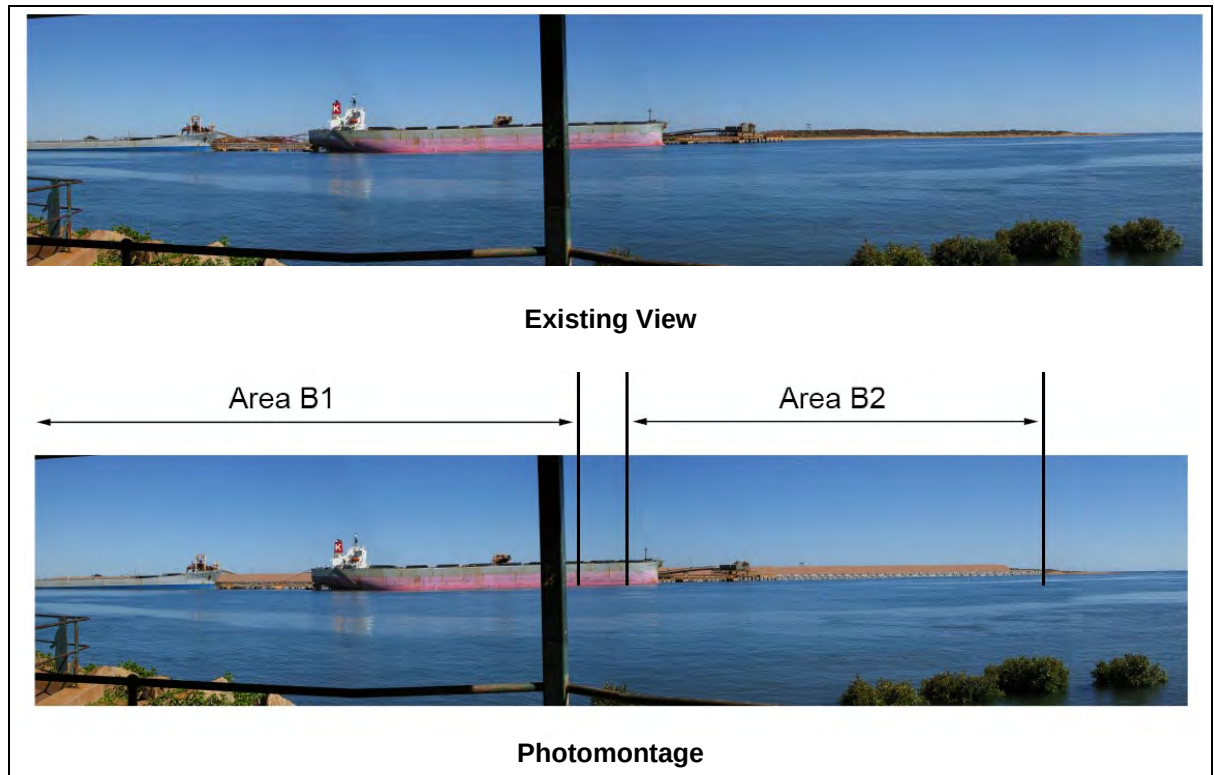
Based on the sensitivity criteria summarised in **Section 2.2**, the gazebo at Point Laurentius and the jetty near the north-western end of Wedge Street have been classified as ‘medium-high sensitivity’ receptors.

Location 2 Gazebo at Point Laurentius

From this viewpoint the docked ships along the existing berths dominate the port area setting, with the shoreline further to the north-east a receding feature. Again the presence of these ships would provide a substantial screening from the proposed works within the B1 area, as demonstrated in **Figure 8**.

It is considered that the receding nature of the shoreline to the north-east, accentuated by the location of the gazebo along the shoreline, will soften the visual appearance of the proposed B2 area as the view diminishes with distance. In essence, the presence of the existing ships takes visual precedence from this viewpoint. To the far right of this view, the southern side of Hunt Point and the outer Indian Ocean can be seen and will remain unimpeded by the proposed works.

In consideration of the receptor’s medium-high sensitivity, the visibility of the current operations and the orientation of the shoreline, the impacts of the proposed works are judged to be ‘slight - adverse’.



■ **Figure 8 Existing View and Expected View from the Gazebo at Point Laurentius**

Location 3 Jetty Near the North-Western End of Wedge Street

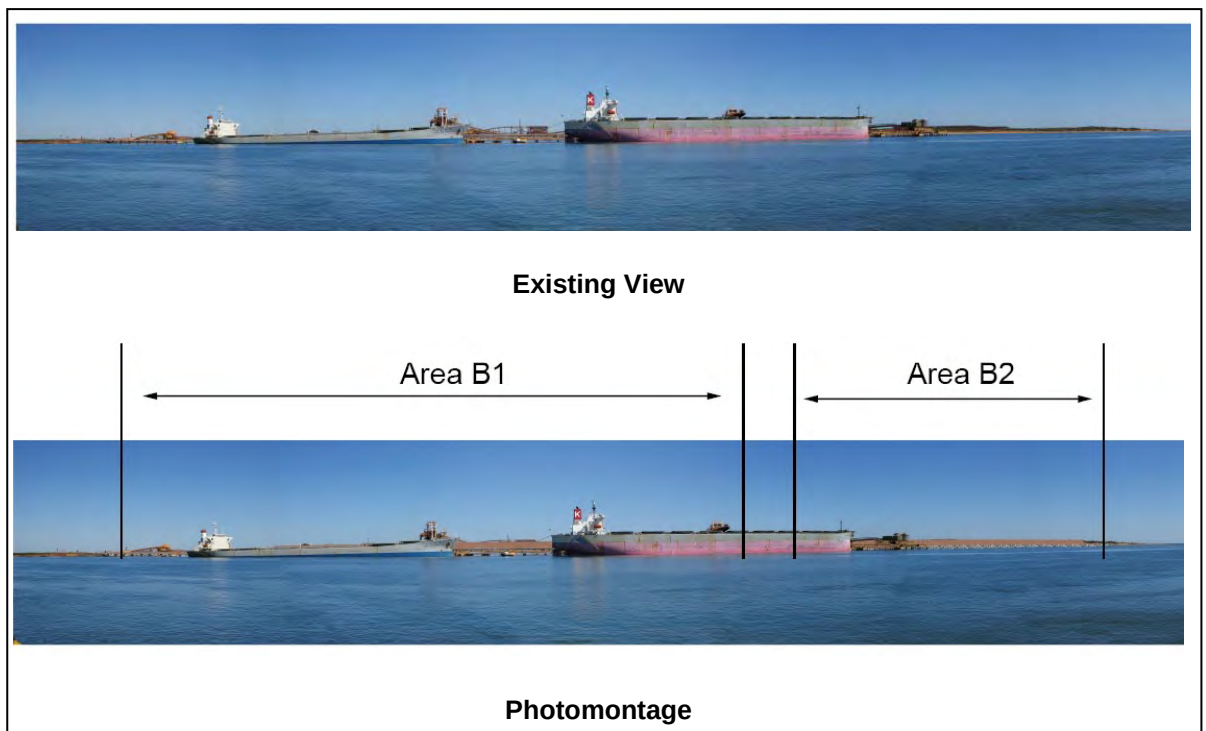
The visual impact of the docked ships within the foreground of this viewpoint is considered not too dissimilar to that when viewed from the gazebo at Point Laurentius, if not more of a dominant feature. Again the proposed works within the B1 area would be predominantly screened by the presence of berthed ships. Additionally, reclamation area B1 will screen existing industrial infrastructure visible between berthed ships as demonstrated in **Figure 9**. Furthermore, existing port infrastructure within the berth area, which extends outward from the shoreline, would provide additional screening to this area.

As illustrated in **Figure 9**, where the B2 area is proposed to be constructed, it will be a receding feature from this location and therefore, the appearance of the proposed environmental berms from this receptor location diminish with distance. To the far right of this view, the southern side of Hunt Point and the outer Indian Ocean can be seen and will remain unimpeded by the proposed works.

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In consideration of the receptor's medium-high sensitivity, the visibility of the current operations and the orientation of shoreline, the impact of the proposed works from this receptor location are considered to be 'slight-adverse'.



■ **Figure 9 Existing View and Expected View from the Jetty**

4.1.3 Recreational Facilities (Medium – Low Sensitivity)

Based on the sensitivity criteria summarised in **Section 2.2**, the recreational park facility at the north-western end of McKay Street has been classified as 'medium-low sensitivity'.

Location 4 Park at the North-Western End of McKay Street

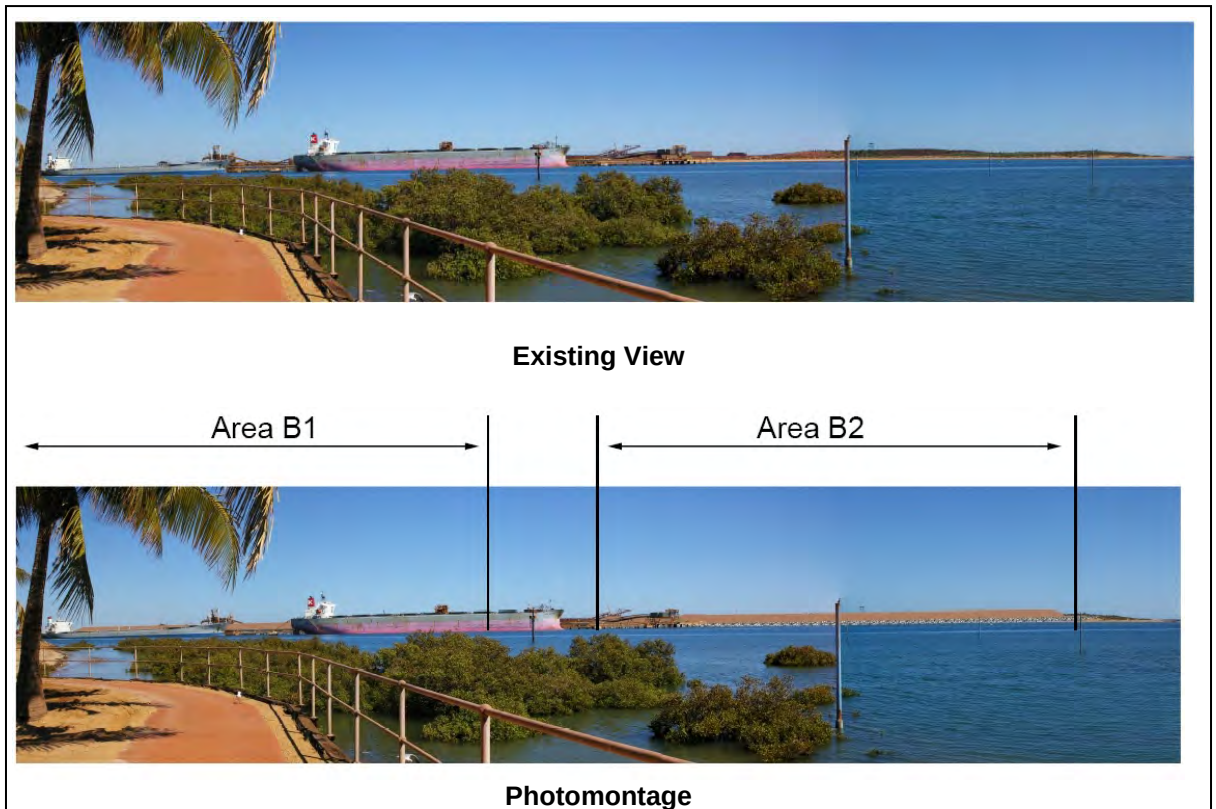
Although a large proportion of the proposed works within the B1 area will be obscured by the presence of ships within the existing berths, the works proposed within the B2 area will be visible from this location, as illustrated in **Figure 10**.

Similar to the view from the intersection of Withnell and Richardson streets, the proposed B2 development area will be more visible from this location than from other receptor locations, with the current setting comprising existing industrial infrastructure and activity, stockpiling of materials and a dense row of low-lying scrubland near the shoreline as its backdrop. Accordingly, the angle of view is such that existing infrastructure within the berth areas would moderately screen the proposed works within the B2 area, as will much of the low-lying scrub. Again it is noted that the

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outlook from this viewpoint towards Hunt Point and the outer Indian Ocean will remain unimpeded by the proposed works. The impacts of the completed development are judged to be ‘slight-adverse’ for this medium – low sensitivity receptor.



■ **Figure 10 Existing View and Expected View from the Park**

5 Management / Mitigation Measures

In order to minimise the potential impacts of the proposed reclamation areas on the visual amenity of the surrounding area, the following strategies should be considered.

5.1 Landscaping

Vegetation screening and landscaping close to potentially sensitive residences is a common method of mitigating visual impacts. In the case of the proposed reclamation, this management measure is unlikely to provide much benefit because the native vegetation found in the area is generally relatively low, sparse, and can take some time to establish without a high degree of maintenance (that is, watering and in some cases fencing). **Figure 11** below shows what the proposed reclamation would look like should it be vegetated.



■ **Figure 11 Photomontage Showing the Reclamation Vegetated**

However, as much of the proposed development is at or near the waterline it will be difficult to establish much screening vegetation at Finucane Island except through the rehabilitation process. Therefore, screening by use of vegetation is most applicable for use on the Port Hedland township side of the harbour and would have an adverse impact by obscuring the view of the water as well as the reclamation areas.

Notwithstanding, some localised use of landscaping may be appropriate.

5.2 Progressive Rehabilitation

It is unlikely that rehabilitation of these reclaimed areas will be undertaken during the dredging phase of the project, as there is a need to keep all areas active during reclamation activities.

5.3 Lighting

Should lighting be required for the project, it is recommended that the visual impact of lighting be given consideration at the procurement stage. Issues for investigation should include downlighting, shielding of lights and purchase of lighting with lower lux ratings.



5.4 General

All equipment and other tools required to complete the reclamation should be housed or stored as required following use. All solid waste should be housed or stored as required at all times prior to being disposed of. All waste should be stored in appropriate facilities in order to minimise rubbish escaping from the site and blowing towards publicly accessible locations, thereby causing a visual nuisance.

Weeds should be managed within the reclamation area in order to ensure that the vegetation in the natural landscape is maintained and monoculture weed populations do not become established.



6 Conclusion

This assessment evaluates the impacts of the proposal with respect to visual amenity. The assessment was undertaken in accordance with the '*Guidelines for Landscape and Visual Impact Assessment*' (2002) *Second Edition*, published by the Landscape Institute (LI) and the Institute of Environmental Management and Assessment (IEMA) (United Kingdom), with some minor modifications to reflect the site's Australian context.

Through the use of GIS information and spatial analysis tools, photomontages from the four identified receptor locations were developed to give a visual representation of the existing environment and a representation of the completed works from these locations. These photomontages have been used to assess the likely impact of the project at the four chosen receptor locations.

The visibility of the proposed works varies slightly when viewed from these receptor locations. Based on the key factors of distance, orientation and the presence of current infrastructure and vegetation, in conjunction with berthed ships being present at most times, the visual impacts of the proposed works have been assessed to be generally moderate-adverse to slight-adverse, with moderate-adverse impacts possible from the area situated near the intersection of Withnell and Richardson Streets. The key works are central to the port area and would not impair the existing views from the Port Hedland town centre to the outer Indian Ocean.

Where practical the following management measures should be considered for implementation to mitigate potential impacts on the visual amenity of the area.

- *Landscaping and Rehabilitation* - Vegetation screening and landscaping may be possible on a selective basis.
- *Lighting* – If required, it is recommended that the visual impact of lighting be given consideration at the design and procurement stages. Issues for investigation should include downlighting, shielding of lights and purchase of lighting with lower lux ratings.
- *General* – All equipment and other tools should be housed or stored as required following use.

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7 References

Department of the Environment, Transport and the Regions, 1998c. *A New Deal for Trunk Roads in England: Guidance on the New Approach to Appraisal*.

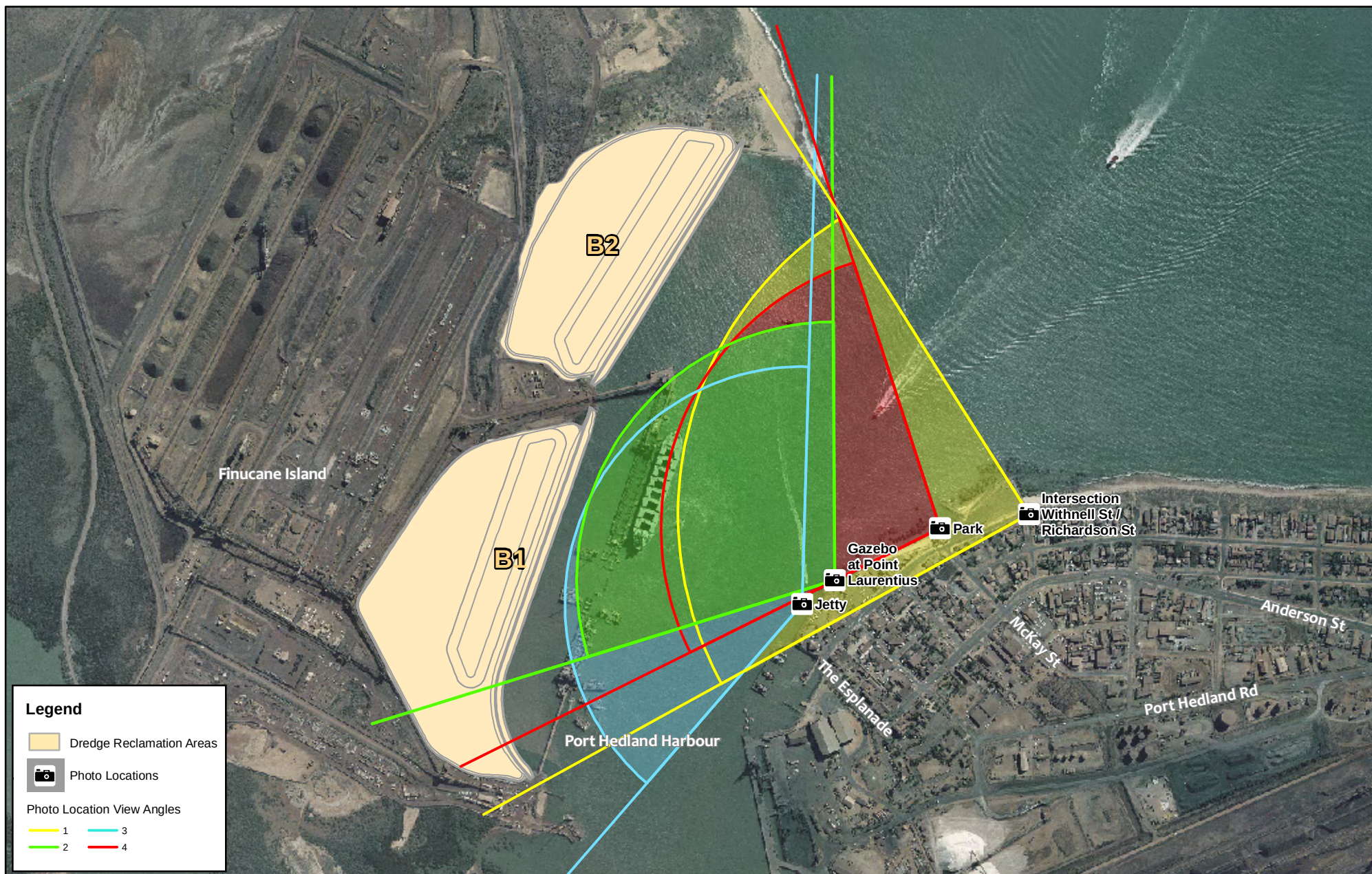
Landscape Institute (LI) and the Institute of Environmental Management and Assessment, 2002. *Guidelines for Landscape and Visual Impact Assessment*, Second Edition, Spon Press, 2002.

Town of Port Hedland, 2001 (as amended). *Town of Port Hedland Town Planning Scheme No. 5 Incorporating the Entire Municipality of the Town of Port Hedland*.



Appendix A Plans

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Legend

Dredge Reclamation Areas

Photo Locations

Photo Location View Angles

1	3
2	4

Port Hedland

Photolocations showing view angles for composite scenes

SKM
 Sinclair Knight Merz
 263 Adelaide Tce
 Perth WA 6000
 Tel: +61 8 9298 4500
 Fax: +61 8 9298 9625

0 100 200 300
 metres

Datum: GDA94
 Map Grid: MGA94 Zone 50

Rev No. 0
 Project: WP03418
 Drawn: 30/04/08



Appendix B Photomontages

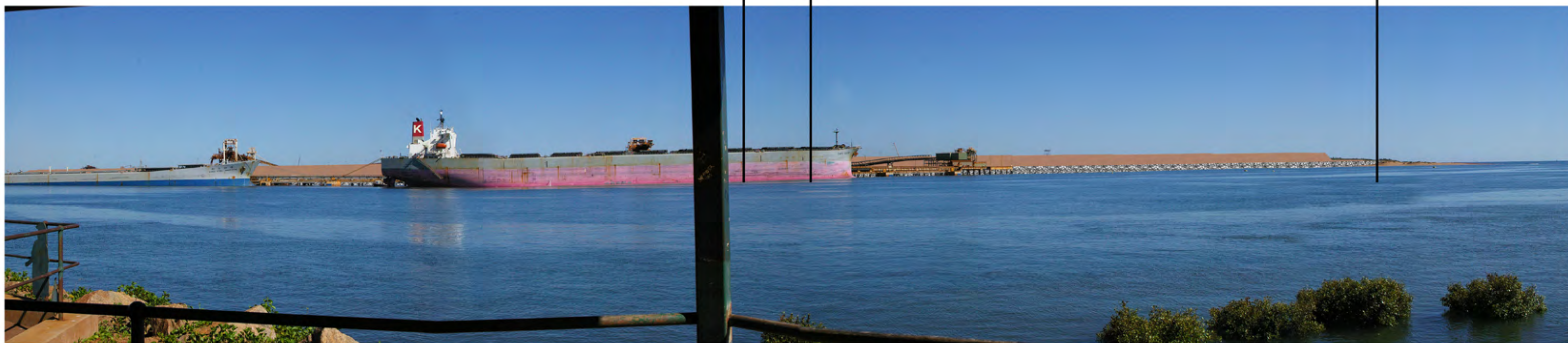
SINCLAIR KNIGHT MERZ

Photolocation at Gazebo at Point Laurentius

View looking NW

Area B1

Area B2



After Dredging

Photolocation at Gazebo at Point Laurentius

View looking NW

Area B1

Area B2



After Landscaping

Photolocation at Gazebo at Point Laurentius

View looking NW



Before Dredging

Photolocation at Jetty near North Western End of Wedge St

View looking WNW



After Dredging

Photolocation at Jetty near North Western End of Wedge St

View looking WNW



After Landscaping

Photolocation at Jetty near North Western End of Wedge St

View looking WNW



Before Dredging

Photolocation at Park at the North Western End of McKay St

View looking WNW

Area B1

Area B2



After Dredging

Photolocation at Park at the North Western End of McKay St

View looking WNW

Area B1

Area B2



After Landscaping

Photolocation at Park at the North Western End of McKay St

View looking WNW



Before Dredging

Photolocation at Intersection of Withnell and Richardson Streets

View looking WNW

Area B1

Area B2



After Dredging

Photolocation at Intersection of Withnell and Richardson Streets

View looking WNW

Area B1

Area B2



After Landscaping

Photolocation at Intersection of Withnell and Richardson Streets

View looking WNW



Before Dredging