Contents

4 Visual amenity

4.1 Chapter content

The Project impact assessment for visual amenity was provided in Chapter 4 of the Project EIS.

This chapter provides additional information to address a submission received during the statutory public display period of the Project EIS. The key issue raised from the Project EIS submission process, relevant to the visual amenity assessment, is summarised Table 4.1.

Table 4.1 Summary of submission issue received in relation to the Project EIS visual amenity assessment chapter

Submitter ID number (refer Appendix A)	Summary of submission issue raised	Project EIS section (public notification version)	AEIS section containing information to address submission comments	Complete replacement section for Project EIS	Supplements the Project EIS information
12.04	Potential impacts and risk assessment rating tables in each draft EIS chapter should be amended to include effective mitigation measures to assist with their interpretation	Section 4.8	Section 4.2	✓	

4.2 Risk assessment

This section replaces the Project EIS Section 4.8 (risk assessment).

4.2.1 Methodology

To assess and appropriately manage the potential visual amenity risks to visual amenity values as a result of Project activities, a risk assessment process has been implemented (herein referred to as 'risk assessment'). The risk assessment methodology adopted is based on principles outlined in the:

- AS/NZS ISO 31000:2009 Risk management – Principles and guidelines
- HB 203:2012 Handbook: Managing environment-related risk.

The risk assessment identifies and assesses the potential visual amenity impact risks to visual values and receptors for the establishment of the BUF and WBE reclamation area, dredging activities, installing navigational aids and operational management of the reclamation area.

The purpose of this risk assessment is to identify potential impacts to visual values/receptors, prioritise environmental management actions and mitigation measures, and to inform the Project decision making process.

The risk management framework incorporates the Australian/New Zealand Standard for Risk Management (AS/NZS 4360:2004) and contains quantitative scales to define the **likelihood** of the potential impact occurrence and the **consequence** of the potential impact should it occur.

An overview of the interaction between Project activities (drivers/stressors), sensitive values/receptors and the risk impact assessment process is provided in Figure 4.1.

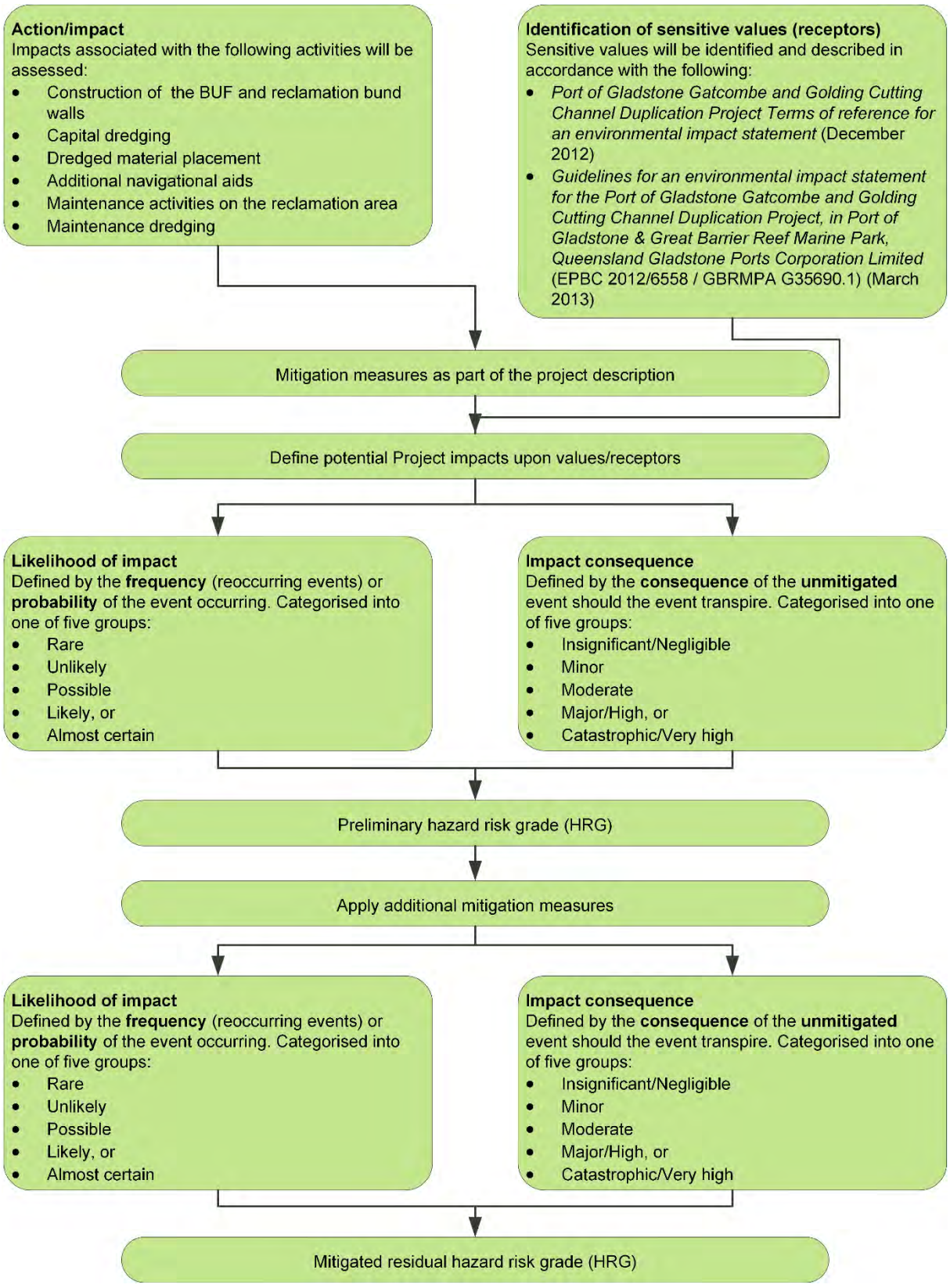

Figure 4.1 Risk assessment framework

Criteria used to rank the **consequence** and **likelihood** of potential impacts are provided in Table 4.2 and Table 4.3, respectively.

Table 4.2 Consequence categories with respect to visual amenity

Description	Definition/quantification[1]
Negligible (insignificance)	Change to the landscape that is barely perceptible, at a very large separation distance, or is temporary in nature. The change complements or is not out of scale with the existing landscape.
Low (minor)	Minor change to the landscape which is visible to a small number of receptors or to receptors of low sensitivity. The change is a small part of the view or is short term in nature. The change is not out of scale with the existing landscape.
Moderate	Perceptible change to the landscape which is visible to a medium number of receptors or to receptors of moderate sensitivity. The change is not within keeping with the existing characteristics of the landscape, and/or is medium-term in nature.
High (major)	Major change to the landscape which is visible to a large number of receptors or to receptors of high sensitivity. The change is large in scale and is out of scale with the existing landscape. The change is long term.
Very high (catastrophic)	Catastrophic change to the landscape to a very large number of receptors spanning a large geographical extent. The change is at complete odds with the existing landscape and is visible to a large number of receptors with high sensitivity. Change is permanent and irreversible.

In Table 4.2, the time periods referred to (duration of impact) are specified in Table 4.3.

Table 4.3 Likelihood categories with respect to visual amenity

Description	Frequency	Probability
Rare	Expected to occur once or more over a timeframe greater than 101 years	0-5% chance of occurring
Unlikely	Expected to occur once or more in the period of 11 to 100 years	6-30% chance of occurring
Possible	Expected to occur once or more in the period of 1 to 10 years	31-70% chance of occurring
Likely	Expected to occur once or many times in a year (e.g. 1 to 250 days per year)	71-95% chance of occurring
Almost certain	Expected to occur more or less continuously throughout a year (e.g. more than 250 days per year)	96-100% chance of occurring

Once the likelihood and the consequence has been defined, determination of the Hazard Risk Grade (HRG) of the potential hazard is determined through the use of a five by five matrix (refer Table 4.4).

Table 4.4 Hazard risk assessment matrix (adapted from GBRMPA 2009)

Likelihood	Consequence rating				
	Negligible (insignificant)	Low (minor)	Moderate	High (major)	Very high (catastrophic)
Rare	Low	Low	Medium	Medium	Medium
Unlikely	Low	Low	Medium	Medium	High
Possible	Low	Medium	High	High	Extreme
Likely	Medium	Medium	High	High	Extreme
Almost certain	Medium	Medium	High	Extreme	Extreme

Table note:

Hazard risk categories identified in Table 4.4 are defined in Table 4.5.

Table 4.5 Risk definitions and actions associated with hazard risk categories

Hazard risk category	Hazard risk grade definition
Low	These risks should be recorded, monitored and controlled. Activities with unmitigated environmental risks that are graded above this level should be avoided.
Medium	Mitigation actions to reduce the likelihood and consequences to be identified and appropriate actions (if possible) to be identified and implemented.
High	If uncontrolled, a risk event at this level may have a significant residual adverse impact on MNES, MSES, GBRWHA and scenic amenity values. Mitigating actions need to be very reliable and should be approved and monitored in an ongoing manner.
Extreme	Activities with unmitigated risks at this level should be avoided. Nature and scale of the significant residual adverse impact is wide spread across a number of MNES, MSES GBRWHA and scenic amenity values.

4.2.2 Summary of risk assessment

The potential visual amenity impacts risk assessment is summarised in Table 4.6.

The likelihood of each event occurring has been assumed to be ‘almost certain’, to identify the possible worst-case scenario (that is that the Project will proceed as proposed and will impact on visual amenity).

As discussed in the Project EIS Section 4.5, the Project activities will be permanent and the identified mitigation measures are not likely to reduce the magnitude of the change with particular respect to the creation of new Port land. Therefore, the residual visual amenity impact or consequence from each viewpoint has not been reduced. Accordingly, all viewpoints, with the exception of viewpoint 2, are considered to have a medium risk. Viewpoint 2 which represents views from Friend Point is considered to have a high risk.

The mitigation measures contained in the Dredging EMP (refer AEIS Appendix F) and the Project EMP (refer AEIS Appendix G) will be implemented to assist in reducing the potential Project impacts on visual amenity.

Table 4.6 Potential visual amenity impacts risk assessment

Viewpoint	Risk description	Preliminary HRG			Post mitigation HRG		
		Likelihood	Consequence	HRG	Likelihood	Consequence	HRG
Yarwun, corner of Landing Road and Forest Road	Viewpoint 1 represents views from the industrial area along Landing Road. The impact of construction and operation of the WBE reclamation area and BUF has an almost certain likelihood, but with a low consequence for visual amenity.	Almost certain	Low	Medium	Almost certain	Low	Medium
Friend Point	Views from viewpoint 2 represent the temporary views experienced by water based users at and surrounding Friend Point. The visual impact of the construction and operation of the WBE reclamation area and BUF has an almost certain likelihood, but with a moderate consequence for visual amenity.	Almost certain	Moderate	High	Almost certain	Moderate	High
Mount Larcom	All Project activities will be visible from Viewpoint 3. Due to the expansive views experienced from the Mount Larcom lookout, the proportion of the view that is occupied by the visual impact of Project activities is not significant, resulting in a low consequence for visual amenity.	Almost certain	Low	Medium	Almost certain	Low	Medium
Port of Gladstone, near The Narrows	Views from viewpoint 4 represent the temporary views experienced by water based users within the Port, near The Narrows. The visual impact of the construction and operation of the reclamation areas and BUF has an almost certain likelihood, but with a low consequence for visual amenity.	Almost certain	Low	Medium	Almost certain	Low	Medium
Port of Gladstone	Views from viewpoint 5 represent the temporary views experienced by water based users within the Port. The visual impact of the construction and operation of the WBE reclamation area and BUF has an almost certain likelihood, but with a low consequence for visual amenity.	Almost certain	Low	Medium	Almost certain	Low	Medium
Auckland Point	The majority of the Project works will not be visible from viewpoint 6. Dredging vessels transferring material from the shipping channel to the BUF will be visible, however it is noted that these would be a transient and temporary impact, and consistent with the character of the Port. The visual impact of Project activities has an almost certain likelihood, but with a negligible consequence for visual amenity.	Almost certain	Negligible	Medium	Almost certain	Negligible	Medium

Viewpoint	Risk description	Preliminary HRG			Post mitigation HRG		
		Likelihood	Consequence	HRG	Likelihood	Consequence	HRG
Round Hill Lookout	The majority of the Project works will be visible from viewpoint 7 however it is noted that due to large separation distances, the introduction of Project works will be a barely perceptible change to a very small part of the view. The impact has an almost certain likelihood, but with negligible consequence for visual amenity.	Almost certain	Negligible	Medium	Almost certain	Negligible	Medium
Corner Goondoon Street and Eden Street	Viewpoint 8 represents one of many elevated residential areas within Gladstone. Due to large separation distances between this viewpoint and Project works, works are unlikely to be readily discernible in the context of the wider landscape.	Almost certain	Negligible	Medium	Almost certain	Negligible	Medium
Upper Piper Street	Viewpoint 9 represents one of many elevated residential areas within Gladstone. The expansive views available from this viewpoint ensures the Project works will be a barely perceptible change to a very small part of the view, resulting in a negligible consequence for scenic amenity.	Almost certain	Negligible	Medium	Almost certain	Negligible	Medium
Birmingham Close	Viewpoint 10 represents one of many elevated residential areas within Gladstone. The majority of the Project works will not be visible from this viewpoint due to the topography of the nearby Reserve to the east, and the location of industrial land uses (e.g. the Gladstone Power Station) which blocks the WBE reclamation area and BUF from view. The impact has an almost certain likelihood, but with negligible consequence for visual amenity.	Almost certain	Negligible	Medium	Almost certain	Negligible	Medium
Mercedes Street	Viewpoint 11 represents one of many elevated residential areas within Gladstone. Project works within the shipping channel are unlikely to be visible from this location due to the ridgelines which extend through the northern suburbs of Gladstone (e.g. Round Hill). Furthermore, due to large separation distances between this viewpoint and Project works, works are unlikely to be readily discernible in the context of the wider landscape.	Almost certain	Negligible	Medium	Almost certain	Negligible	Medium
Watt Street	Viewpoint 12 represents one of many elevated residential areas within Gladstone. Project works within the shipping channel are unlikely to be visible from this location due to the ridgelines which extend through the northern suburbs of Gladstone. Furthermore, due to large separation distances between this viewpoint and Project works, works are unlikely to be readily discernible in the context of the wider landscape.	Almost certain	Negligible	Medium	Almost certain	Negligible	Medium

Viewpoint	Risk description	Preliminary HRG			Post mitigation HRG		
		Likelihood	Consequence	HRG	Likelihood	Consequence	HRG
Barney Point Beach	Viewpoint 13 represents the views experienced by residents and visitors to Barney Point Beach. Dredging vessels and the addition and relocation of navigational aids will be visible from this viewpoint, however these Project elements are an already established part of the landscape. The visual amenity impact has an almost certain likelihood, but with negligible consequence for visual amenity.	Almost certain	Negligible	Medium	Almost certain	Negligible	Medium
Tannum Sands	Viewpoint 14 represents the views experienced by residents and visitors to Tannum Sands. Dredging vessels and the addition and relocation of navigational aids will be visible from this viewpoint, however these Project elements are an already established part of the landscape. Furthermore, the large separation distances between this viewpoint and the shipping channel further reduces the visual impact likely to be experienced at this viewpoint.	Almost certain	Negligible	Medium	Almost certain	Negligible	Medium
Gatcombe Heads, Facing Island	Viewpoint 15 represents the views experienced by residential properties and visitors to Gatcombe Heads on Facing Island. Dredging operations and the addition and relocation of navigational aids will be visible within foreground and middleground views. These elements are an already established part of the landscape. The impact likely to be experienced at this viewpoint has an almost certain likelihood, but with a low consequence for visual amenity.	Almost certain	Low	Medium	Almost certain	Low	Medium