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17 Non-Aboriginal cultural heritage

17.1 Chapter content

The Project impact assessment for non-Aboriginal cultural heritage was provided in Chapter 17 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 non-Aboriginal cultural heritage assessment, is summarised Table 17.1.

Table 17.1 Summary of submission issue received in relation to the Project EIS non-Aboriginal cultural heritage 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 17.8 | Section 17.2 | ✓ | |

17.2 Risk assessment

This section replaces the Project EIS Section 17.8 (risk assessment).

17.2.1 Methodology

To assess and appropriately manage the potential non-Aboriginal cultural heritage risks to environmental 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 non-Aboriginal cultural heritage impact risks to environmental values/receptors for both the establishment of the 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 environmental 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 17.1.

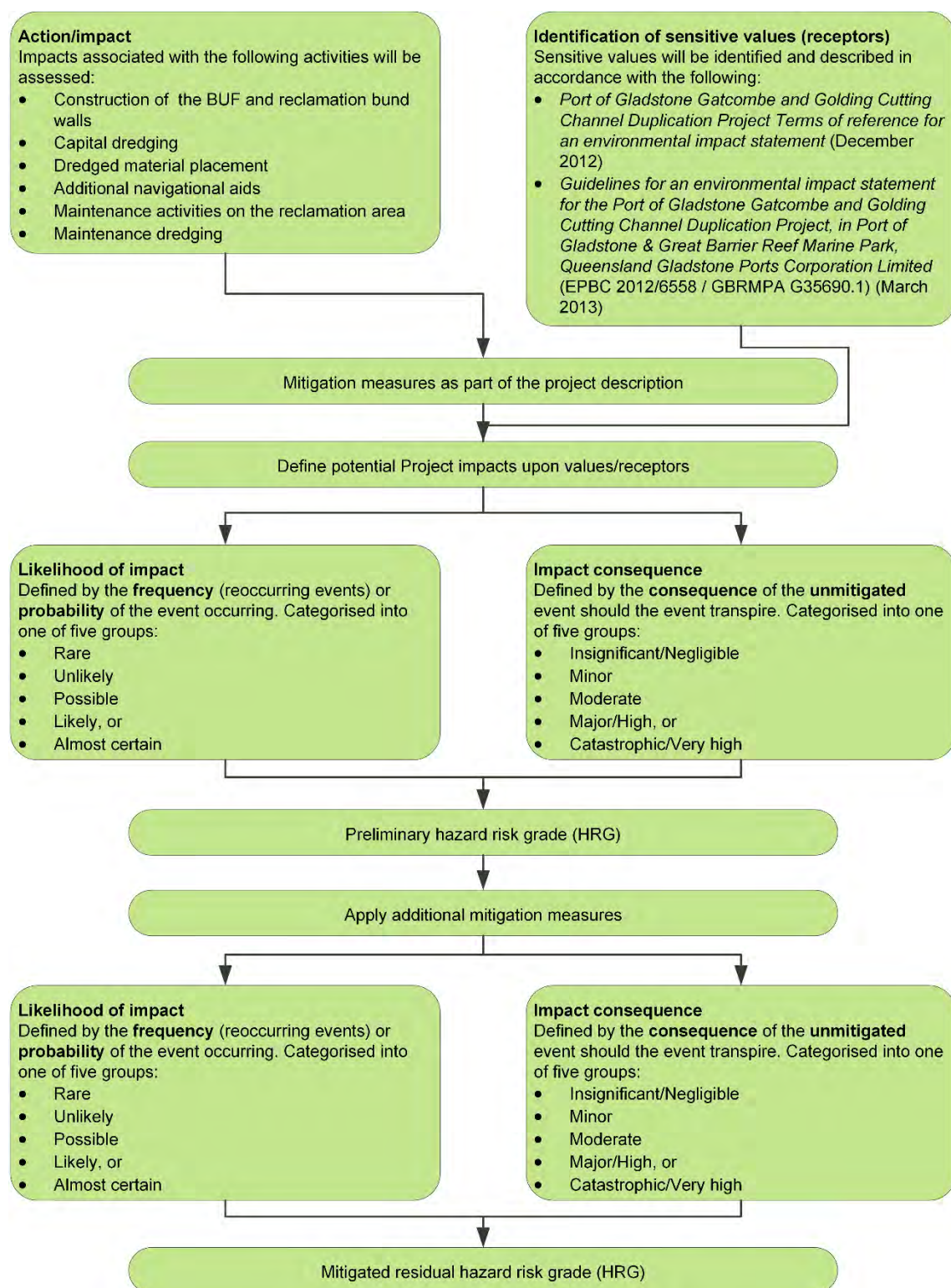


Figure 17.1 Risk assessment framework

Criteria used to rank the **likelihood** and **consequence** of potential impacts are provided in Table 17.2 and Table 17.3, respectively.

Table 17.2 Environmental (ecosystem), public perception and financial consequence category definitions (adapted from GBRMPA 2009)

| Description | Definition/quantification ¹ | | |
|----------------------------|--|--|---|
| | Environmental* | Public perception | Financial |
| Negligible (Insignificant) | No impact or, if impact is present, then not to an extent that would draw concern from a reasonable person No impact on the overall condition of the ecosystem | No media attention | Financial losses up to \$500,000 |
| Low (Minor) | Impact is present but not to the extent that it would impair the overall condition of the ecosystem, sensitive population or community in the long term | Individual complaints | Financial loss from \$500,001 to \$5 million |
| Moderate | Impact is present at either a local or wider level Recovery periods of 5 to 10 years likely | Negative regional media attention and region group campaign | Financial loss from \$6 million to \$50 million |
| High (Major) | Impact is significant at either a local or wider level or to a sensitive population or community Recovery periods of 11 to 20 years are likely | Negative national media attention and national campaign | Financial loss from \$51 million to \$100 million |
| Very high (Catastrophic) | Impact is clearly affecting the nature of the ecosystem over a wide area or impact is catastrophic and possibly irreversible over a small area or to a sensitive population or community Recovery periods of greater than 21 years likely or condition of an affected part of the ecosystem irretrievably compromised | Negative and extensive national media attention and national campaigns | Financial loss in excess of \$100 million |

Table notes:

1 Quantification of impacts should use the impact with the greatest magnitude in order to determine the consequence category

* For Matters of National Environmental Significance (MNES) protected under the provisions of the EPBC Act the *Matters of National Environmental Significance – Significant Impact Guidelines 1.1 – Environmental Protection and Biodiversity Conservation Act 1999* (DoE 2013) are to be used to determine the consequence category

Table 17.3 Likelihood category definitions (adapted from GBRMPA 2009)

| 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 HRG of the potential hazard will be determined through the use of a five by five matrix (refer Table 17.4).

Table 17.4 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 17.4 are defined in Table 17.5

Table 17.5 Risk definitions and actions associated with hazard risk categories (adapted from GBRMPA 2009)

| 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/or social/cultural heritage 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 and GBRWHA values. |

17.2.2 Summary of risk assessment.

The potential non-Aboriginal cultural heritage impacts risk assessment is summarised in Table 17.6.

The implementation of the mitigation measures (refer Section 17.2.3), will result in the residual non-Aboriginal cultural heritage risks from the Project activities being assessed as low to medium.

17.2.3 Mitigation measures

The following mitigation measures will be implemented during the Project activities to minimise impacts on non-Aboriginal cultural heritage values:

- Known shipwreck locations to be avoided by Project activities
- Prior to dredging activities commencing, undertake a thorough survey (e.g. remote sensing survey using multi-beam or side beam scanning sonar with magnetometer) of the areas to be dredged and engage a suitably qualified and experienced maritime archaeologist to interpret the resultant data to identify any potential shipwrecks for further investigation and management
- Ensure that all employees are suitably trained to identify cultural heritage sites or objects and report the finds to the Contractor's Environmental Officer (CEnvO) and maintain a log of all employees who have undergone cultural heritage training
- Inform all employees of their obligations to notify the CEnvO of any cultural finds
- Develop an accidental cultural heritage discovery reporting process and form that includes a clear chain of custody in the report (e.g. details of the person/s who made the discovery, date of discovery, description of discovery, location of discovery, etc). The reporting process is to include roles and responsibility regarding the handling and reporting of cultural heritage discoveries.

- Engage an independent archaeologist for advice upon making a cultural heritage discovery
- Should an item or object of historical non-Aboriginal cultural heritage significance be found during Project activities the following measures will be adopted:
 - All work at the location of the potential find must cease and the CEnvO will be notified
 - The CEnvO will notify GPC's Environment Manager, who will undertake appropriate actions and provide management recommendations to the CEnvO
- GPC's Environment Manager will notify the DES of any relevant finds in accordance with Section 89 of the *Queensland Heritage Act 1992*.

Mitigation measures to manage water quality and potential sediment deposition during dredging activities are provided in the Dredging EMP (refer AEIS Appendix F).

Table 17.6 Potential non-Aboriginal cultural heritage impacts and risk assessment ratings

| Potential impact | Project phase | | | | | Preliminary HRG | | | Post mitigation HRG | | |
|--|--|----------|-------------------|----------------|-------------|-----------------|-------------|--------|---------------------|-------------|--------|
| | Reclamation area and BUF establishment | Dredging | Navigational aids | Demobilisation | Maintenance | Likelihood | Consequence | HRG | Likelihood | Consequence | HRG |
| Direct and indirect impacts on the environmental values of the Great Barrier Reef Region (refer Chapter 9 (nature conservation)) | ✓ | ✓ | ✓ | | ✓ | Likely | High | High | Unlikely | High | Medium |
| Indirect impacts on recorded shipwrecks and/or other places of heritage significance | ✓ | ✓ | ✓ | | ✓ | Possible | Low | Medium | Unlikely | Low | Low |