

Environmental Risk Analysis

INTRODUCTION

This Environmental Risk Analysis provides a summary of the prioritisation process undertaken to identify the key environmental issues associated with the proposed mixed use development at 45 Honeysuckle Drive, Newcastle (Part Lot 4 DP 1238761).

The environmental risk analysis addresses the risks associated with the site and proposal, before any mitigation strategies are taken into account, and the residual risk. The residual risk is the potential for environmental harm after the application of mitigation strategies and site management.

This Environmental Risk Analysis was prepared to satisfy the requirements of the project SEARs (Ref: SSD 9827).

METHODOLOGY

This Environmental Risk Analysis has been prepared on the basis of detailed site investigations undertaken during the preparation of the Environmental Impact Assessment (EIS) for the proposed development and the results of various specialist sub-consultants investigations of the proposal. There is thus a substantial understanding of the site and local issues.

Key Environmental Issues

The key environmental issues identified through the EIS process, in the findings of specialist sub-consultant reports and identified in the DGRs are as follows:

- Built form, urban design and residential amenity;
- Safety, security and crime prevention;
- Noise and vibration;
- Transport, transport and accessibility;
- Flooding;
- Hydrology and Geology;
- Heritage;
- Air quality;
- Biodiversity; and
- Waste.

No other significant issues or risks have been identified for the site.

Prioritisation of Issues

The risk assessment process is used to prioritise issues based on site sensitivities and the proposed construction and operations. Those issues assessed as having the highest risk require a higher degree of assessment. The assessment process identifies the level of threat to the environment and appropriate mitigation strategies.

A level of residual risk remains after mitigation and the consequences of this also require assessment to ensure that there are no unacceptable consequences of the proposal.

The assessment of overall risk is based on the likely consequences or environmental impact of an event and the likelihood of an event occurring.

Event Consequences.

Event Consequence	Event impact
Substantial	Permanent widespread damage
Major	Heavy damage costly restoration
Minor	Limited but medium term negative effects
Negligible	Short term damage

Event Likelihood.

Event Likelihood	Description
Almost certain	The event is expected to occur
Likely	The event is likely to occur commonly
Possible	The event may occur occasionally
Unlikely	The event may occur infrequently
Rare	The event may occur in exceptional circumstances

Risk Matrix.

Risk Matrix	Substantial	Major	Minor	Negligible
Almost Certain	9	8	7	6
Likely	8	7	6	5
Possible	7	6	5	4
Unlikely	6	5	4	3
Rare	5	4	3	2

Event Threat Level.

Very High Threat 8 & 9	High Threat 6 & 7	Moderate Threat 5 & 4	Minor Threat 3	Low Threat 2
Red	Orange	Yellow	Pale yellow	White

RESULTS

The table below shows the prioritisation matrix used to identify priorities. Each issue was given a pre-mediation ranking based on the scope of the risk.

Following assessment of the potential environmental risks it is necessary to determine the residual environmental risks after the application of mitigation measures. This process assists in determining which issues require a greater degree of monitoring.

The prioritisation of environmental issues related to the proposed concept is also shown in the table below. The table is based on the relevant mitigation measures outlined in the Environmental Impact Statement.

Prioritisation of Environmental Risk and Residual Risks.

Issue	Scope of Risk	Pre-Mitigation Risk	Management of Risk/ Issue	Residual Risk
Built Form and Urban Design				
Building form and interface with surrounding development and public open space areas.	The subject site is located within a developing mixed use area. The subject site adjoins the scenically valuable Newcastle Harbour. In the absence of careful architectural design, the proposed development may result in urban design outcomes which are inconsistent with surrounding development and have adverse visual, amenity and public domain related impacts.	4	The proposal has been developed having regard to the requirements of SEPP 65 and the ADG, and has evolved through ongoing consultation with the SDRP. The proposed design represents a high-quality mixed-use development, taking advantage of the sites opportunities and responding to the surrounding environment. No specific additional mitigation is required	2
Safety, Security and Crime Prevention				
Safety, Security and Crime Prevention	The proposed development may increase opportunities for crime and antisocial behaviour and reduce public safety.	4	The design of the proposal incorporates surveillance, access control, territorial reinforcement and space management measures.	2
Noise and Vibration				
Construction Noise and Vibrations Impacts	Disturbance to nearby sensitive receivers during construction activities.	5	Construction noise and vibration to be monitored and mitigated in accordance with the CEMP for the proposed development and recommendations of the Noise Impact Assessment.	3
Noise impacts from mechanical plant	Mechanical plant associated with the proposed development may result in noise impacts to surrounding sensitive receivers.	4	Acoustic barriers provided to mechanical plant as per the recommendations of the Noise Impact Assessment.	2
Existing noise	Impacts of existing road traffic, commercial and port related noise on proposed development.	5	Glazing construction as per Noise Impact Assessment in accordance with the CEMP. Roof/ceiling, wall and balcony treatment/construction as per as per Noise Impact Assessment	3
Structural vibration damage during construction	Constriction vibration resulting in damage to nearby structures.	4	Vibration monitoring to occur during construction. Consideration of a	3

Issue	Scope of Risk	Pre-Mitigation Risk	Management of Risk/ Issue	Residual Risk
			dilapidation survey, monitoring of building changes and underpinning, reinforcement and bracing if required.	
Traffic, Transport and Accessibility				
Traffic, transport and accessibility.	Traffic delays and congestion on public roads	3	The additional traffic movements associated with the development are relatively low and can be accommodated on the local road network. During construction, traffic will be managed in accordance with the draft Construction Traffic and Pedestrian Management Plan.	2
Flooding				
Site Flooding	The subject site is located adjacent to Newcastle Harbour and may be subject flooding. The proposed development may be impacted by flooding.	4	All ground floor levels are situated at or above the 1% AEP of 2.50m AHD. All habitable floor levels are set at the Flood Planning Level, being 2.90m AHD. Non-habitable floor levels (such as bin storage and the proposed substation) are situated at 2.50m AHD, being the 1% AEP.	3
Impact of the development on flood behaviour	The proposed development will inhibit flood water in the 1% AEP ocean flooding event from entering the site.	4	During flood events, flood water will be able to enter the development site at localised locations, most notably the pedestrian linkage paths and shared vehicle access points. The proposed development has been accounted for in the Honeysuckle Redevelopment Area Flood Study (2018).	3
Hydrology and Geology				
Stormwater Management	Increased surface water runoff from the proposed development could impact	5	A Stormwater Management Strategy has been prepared for the	2

Issue	Scope of Risk	Pre-Mitigation Risk	Management of Risk/ Issue	Residual Risk
	the ecology of downstream environments and flooding conditions.		proposed development, which includes storage of stormwater in underground tanks and rainwater tanks to control stormwater discharge.	
Stormwater Quality	Untreated stormwater leaving the site.	5	The Stormwater Management Strategy includes the strategies for water quality treatment.	2
Contamination	Previous investigations have identified localised soil contamination and areas of concern.	6	Development to be carried out in accordance with the remediation action plan prepared for the site.	3
Groundwater	The proposed development may cause changes to groundwater quantity and quality.	6	Remediation and management of groundwater and dewatering activities.	3
Mine subsidence	The site is located within a mine subsidence district.	4	Structural design of the proposed development accounts for mine subsidence.	3
Sediment and erosion controls	Construction will involve considerable disturbance of the site surface. Disturbance leaves the site vulnerable to erosion by wind and water and surrounding land vulnerable to dust and sedimentation. Surrounding land including wetlands and water ways are vulnerable to sedimentation and pollution.	5	A draft Concept Erosion and Sediment Control Plan has been prepared which includes erosion and sediment controls.	3
Acid Sulphate Soils	The site is located in an area of potential acid sulphate soils. Disturbance of soils can cause significant acid runoff problems. The proposed construction methods will minimise risk.	5	An Acid Sulphate Soils Management Plan has been prepared for the site. The plan provides for the neutralisation of any affected soil and leachate.	2
Heritage				
European Heritage	Impacts on items of European Heritage value	2	No mitigation measures required	2
Aboriginal Cultural Heritage	Impacts on items of Aboriginal Heritage significance	3	All personnel working on the site should be made aware of their obligations under the NPW Act. Works to cease if an Aboriginal object is identified.	2
Air Quality				
Emissions of air pollutants during	Construction activities may result in increased air pollutants	4	Dust mitigation during construction. Methods outlined in CEMP.	2

Issue	Scope of Risk	Pre-Mitigation Risk	Management of Risk/ Issue	Residual Risk
construction.				
Biodiversity				
Flora and fauna	Impacts on biodiversity values	2	No mitigation measures required	2
Waste				
Construction Waste	Construction activities will result in the generation of waste materials	4	The CEMP details waste management strategies, with the objective of preventing or minimising adverse environmental impacts from wastes during construction.	2
Operational Waste	Operational works will not be significant. The waste generated by the operational TSF can all be managed within existing waste disposal services.	4	Waste management during operations will be carried out in accordance with the Operational Waste Management Plan developed for the site.	2

CONCLUSION

The level of risk associated with each environmental attribute was considered in the context of the SEAR's and applicable legislative requirements applicable to the proposal to determine the level of assessment that should be undertaken.

The identification of risk enabled the determination and assessment of these matters throughout the preparation of the EIS and accompanying technical reports. Specialist consultant reports have been prepared assessing potential impacts and proposed mitigation measures for Built Form and Urban Design, Landscaping, Crime Prevention, Noise and Vibration, Traffic, Flooding, Geotechnical and Contamination, Ecology, Heritage, Air Quality and Waste. These plans and reports are included as appendices to the EIS and summarised within Chapter 8.