

28 July 2015

Environmental Risk Assessment

SSD 15_6913 - Gosford Hospital Redevelopment and Stage 1 of the Health and Wellbeing Precinct

Based on the environmental assessment in Section 8 of the Environmental Impact Statement prepared by City Plan Strategy and Development (dated July 2015), the following Environmental Risk Analysis assesses the significance of the identified impacts and the ability to manage those impacts to establish a residual risk rating. Refer to Figure 1 below.

Significance of Impact	Manageability of Impact					
	5 Complex	4 Substantial	3 Straightforward	2 Standard	1 Simple	
1 - Low	6 (Medium)	5 (Low-Medium)	4 (Low-Medium)	3 (Low)	2 (Low)	Residual Impact
2 - Minor	7 (High-Medium)	6 (Medium)	5 (Low-Medium)	4 (Low-Medium)	3 (Low)	
3 - Moderate	8 (High-Medium)	7 (High-Medium)	6 (Medium)	5 (Low-Medium)	4 (Low-Medium)	
4 - High	9 (High)	8 (High-Medium)	7 (High-Medium)	6 (Medium)	5 (Low-Medium)	
5 - Extreme	10 (High)	9 (High)	8 (High-Medium)	7 (High-Medium)	6 (Medium)	

Significance of Impacts:

5 Extreme	E1 - Undisturbed receiving environment E2 - Type or extent of impacts unknown E3 - Substantial level of community concern
4 High	H1 - Sensitive receiving environment H2 - Type or extent of impacts not well understood H3 - High level of community concern
3 Moderate	Mo1 - Resilient receiving environment Mo2 - Type or extent of impacts understood Mo3 - Community interest
2 Minor	Mi1 - Disturbed receiving environment Mi2 - Type or extent of impacts well understood Mi3 - Some level of local community interest
1 Low	L1 - Degraded receiving environment L2 - Type or extent of impacts fully understood L3 - Negligible level of local community interest

Manageability of Impacts:

5 Complex	C1 - Extensive/complicated range of mitigation measures required C2 - Safeguards or technology are unproven C3 - Adaptive management not appropriate
4 Substantial	Sub1 - Significant mix of mitigation measures required Sub 2 - Limited evidence of effectiveness of safeguards Sub 3 - Adaptive management feasible
3 Straightforward	Str1 - Straightforward range of mitigation measures required Str2 - Good understanding of effectiveness of safeguards Str3 - Adaptive management readily applicable
2 Standard	Sta1 - Simple range of mitigation measures required Sta2 - Substantial evidence for effectiveness of safeguards Sta3 - Adaptive management unlikely to be required
1 Minimal	Min1 - Minimal/no mitigation measures required Min2 - Safeguards are standard practice Min3 - Adaptive management not required

Figure 1 Environmental Risk Assessment Values

The significance of identified environmental impacts is assigned a value between 1 (Low) and 5 (Extreme) based on:

- The receiving environment;
- The level of understanding of the type and extent of impacts; and
- The likely community response to the environmental consequence of the project.

The manageability of environmental impact is assigned a value between 1 (simple) and 5 (complex) based on:

- The complexity of mitigation measures;
- The known level of performance of the safeguards proposed; and
- The opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

Refer to Table 1 below for the complete environmental risk analysis. Refer to the complete EIS for the range of measures/recommendations to mitigate the "identified environmental impact".

TABLE 1: ENVIRONMENTAL RISK ANALYSIS

Issue	Phase C- construction O - operation	Identified Environmental Impact	Risk Assessment		
			Significance of Impact	Manageability of Impact	Residual Impact
Built and Form Urban Design	O	The height, bulk and scale of the new buildings will be greater than that of the existing surrounding developments.	2 Minor	2 Standard	4 Low-Medium
Environmental Amenity	O	Potential impacts on pedestrian wind comfort of occupants (courtyards, roof terrace etc).	1 Low	2 Standard	4 Low-Medium
		As a consequence of the height and required building footprint for the HWP (Stage 1), there will be minor shadow impacts on some neighbouring existing dwellings.	3 Moderate	3 Straightforward	6 Medium
		Potential light spill from carpark within the HWP (Stage 1) to nearby residential properties.	2 Minor	2 Standard	4 Low-Medium
		Potential impact on amenity of existing hospital buildings (noise, overshadowing, privacy).	3 Moderate	2 Standard	5 Low-Medium
		For noise and vibration, refer to below relevant point in table.	N/A	N/A	N/A
Safety and Security	O	Surveillance of activities in proposed carpark to be mitigated through incorporation of CCTV.	1 Low	2 Standard	4 Low-Medium
Transport and Accessibility	C	Construction traffic impacts on road network.	2 Minor	2 Standard	4 Low-Medium
	O	Impact of additional car parking on traffic generation and operation of road network.	2 Minor	4 Substantial	6 Medium
Ecologically Sustainable Development	All	The proposed ESD measures will have a positive impact on the environment. Hence, there is no	N/A	N/A	N/A

(ESD)		environmental risk identified.			
Noise and Vibration	C	Noise generated and potential impact on nearby sensitive residential receivers during excavation and construction	2 Minor	2 Standard	4 Low-Medium
	O	Noise generated by mechanical plant and traffic noise (carpark) and potential impact on residential receivers.	3 Moderate	3 Straightforward	6 Medium
Biodiversity	C	Removal of trees and potential impact on trees to be retained during construction works.	2 Minor	2 Standard	4 Low-Medium
Heritage	C	No impact identified	N/A	N/A	N/A
Aboriginal Heritage	C	Low archaeological potential of the sites identified.	1 Low	1 Simple	2 Low
Sediment, Erosion and Dust Controls	C	Potential sediment pollution as a consequence of excavation and construction activities.	2 Minor	1 Simple	3 Low
Utilities	All	Existing utilities/services may require augmentation/upgrade.	2 Minor	2 Standard	4 Low-Medium
Flooding	O	No identified impact	N/A	N/A	N/A
Drainage	All	The construction of the developments will alter the imperviousness of the sites.	2 Minor	3 Straightforward	5 Low-Medium
Servicing and Waste	C	Environmental impacts associated with the disposal of construction and hazardous waste.	2 Minor	1 Simple	3 Low
	O	Health risks associated with Contaminated Waste (including clinical waste and sharps).	2 Minor	1 Simple	3 Low
Hazards	C	Potential spills or leaking of hazardous substances.	2 Minor	1 Simple	3 Low
	O	Potential spills or leaking as a consequence of handling, use and storage of hazardous substances.	2 Minor	1 Simple	3 Low
Hazardous Materials	C	Potential hazardous materials in buildings/structures to be demolished	2 Minor	2 Standard	4 Low-Medium
Contamination	C	Sites capable of being made suitable for the proposes uses but further detailed investigations will be required.	2 Minor	2 Standard	4 Low-Medium
Air and Water Quality	C	Potential for reduced air and water quality during construction	2 Minor	2 Standard	4 Low-Medium