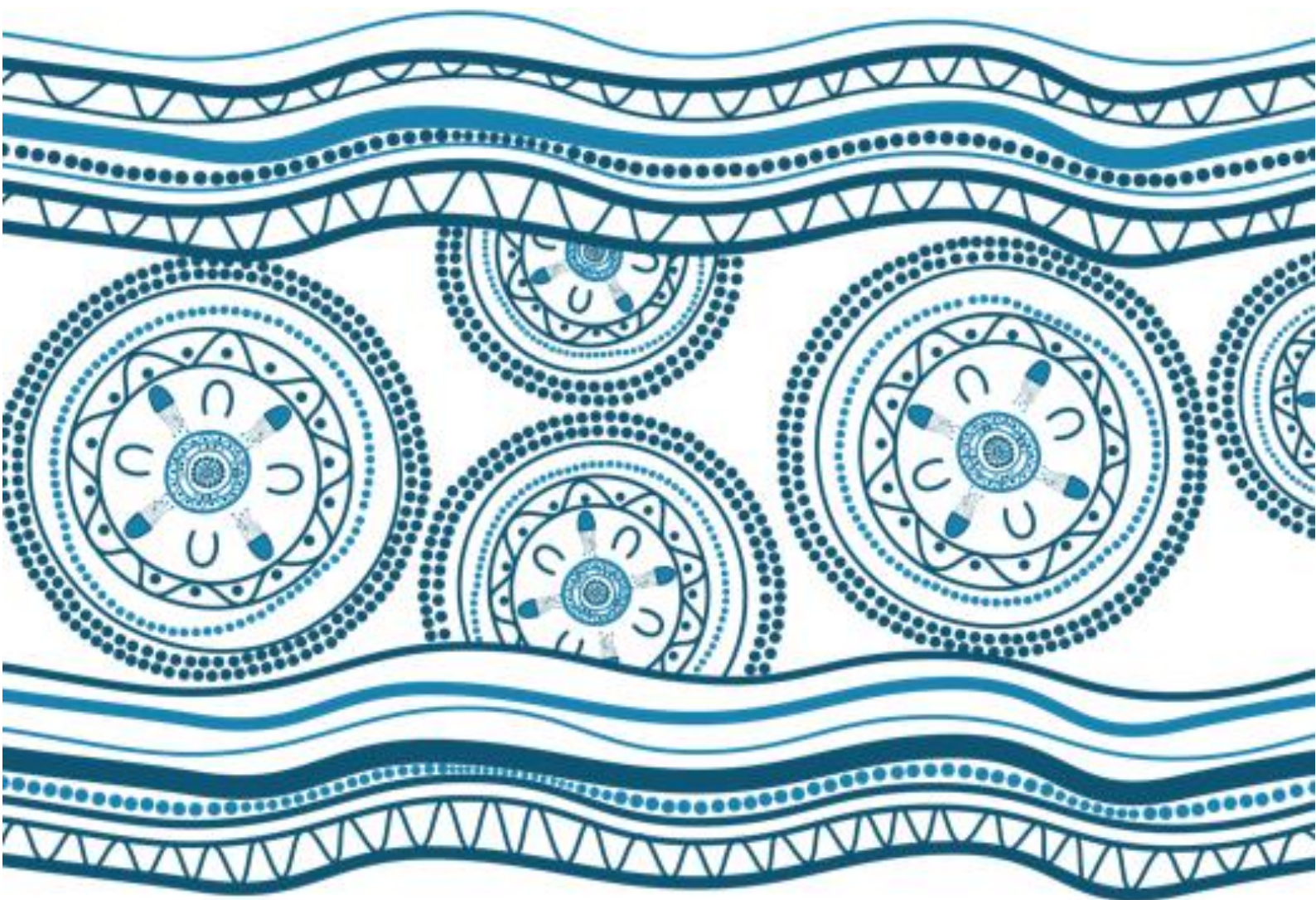


Chapter 13

Landscape character and visual amenity



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13 Landscape character and visual amenity

This chapter presents an assessment of the impacts of the project on the area's landscape character and visual amenity and identifies mitigation and management measures to minimise and reduce these impacts.

The assessment presented in this chapter draws on information from Appendix M (Landscape Character and Visual Impact Assessment) (LCVIA).

13.1 Assessment methodology

The LCVIA methodology involved the following:

- A review of State, regional and local planning policy as it relates to design, place and movement, landscape character and visual amenity
- An analysis of the regional and local context with regard to the area's landscape character and visual amenity
- The determination of how sensitive the area's landscape character and visual amenity would be to any changes introduced by the project
- A review of the project's design integration response; feeding back potential impacts to the design development process to embed mitigation measures within the urban and landscape design
- An assessment of impacts on the area's landscape character and visual amenity; considering the sensitivity of the area/view and the project's design integration response
- Development of additional mitigation measures to further improve the project's impact.

Development of the urban design and landscape strategy and carrying out of the LCVIA is an iterative process. Chapter 5 (Project description) summarises the design development process and how the design responds to design, place and movement principles. The LCVIA draws upon the vision, objectives, principles and concepts developed as part of the urban design and landscape strategy. Similarly, the urban design and landscape strategy draws upon key issues, constraints and mitigations identified in the LCVIA. The iterative process ensures that key issues, constraints and mitigations from the LCVIA are integrated into the urban design and landscape strategy and into the design for the project. This means that LCVIA assesses the impact of the design accounting for the various treatments and features included through this process.

The LCVIA adopted an assessment matrix from the Guideline for Landscape Character and Visual Impact Assessment (Transport for NSW, 2020d) as shown in Table 13-1. The assessment considered the sensitivity of the existing environment and the magnitude of change to determine the overall impact.

Table 13-1: Landscape and visual impact assessment matrix

		Magnitude			
		High	Moderate	Low	Negligible
Sensitivity	High	High	High-moderate	Moderate	Negligible
	Moderate	High-moderate	Moderate	Moderate-low	Negligible
	Low	Moderate	Moderate-low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

13.1.1 Policy framework

The LCVIA was prepared in accordance with following guidance documents:

- Guideline for Landscape Character and Visual Impact Assessment (EIA-N04) (Transport for NSW, 2020d)
- Beyond the Pavement 2020 (Transport for NSW, 2020a)
- Better Placed - An integrated design policy for the built environment of New South Wales (NSW Government Architect, 2017)
- Better Placed – Aligning Movement and Place – Outline for understanding places in relation to movement infrastructure (NSW Government Architect, 2019)
- Kamay Botany Bay National Park Kurnell Master Plan (NSW DPIE, 2019)
- Kamay Botany Bay National Park Plan of Management (NSW DPIE, 2020a)
- Draft Connecting with Country (NSW Government Architect, 2020)
- The Guidance for Landscape and Visual Impact Assessment, Third Edition (Landscape Institute and Institute of Environmental Management & Assessment, UK, 2013).

13.2 Existing environment

The regional landscape character is diverse, comprising a mix of natural and cultural elements closely set against the more industrial characteristics of Port Botany and Kurnell. The flat open expanse of Botany Bay is framed by the surrounding industry and occasional natural features which become more prominent towards the headlands. This creates long vistas to and from key viewpoints around and across the Bay.

The La Perouse coast is characterised by rocky sandstone cliffs that rise up towards the eastern coastline. The terrain gains in elevation to the east towards Little Bay and the NSW Golf Club. Bare Island is a low sandstone island about 30 metres from the shore at the southern end of the La Perouse headland. To the north of La Perouse Point is Frenchmans Beach which curves towards Yarra Point, and on to Port Botany.

La Perouse Point and the surrounding headland are largely cleared of vegetation and consist mostly of mown lawn and patchy modified heathland. Further southeast towards Cape Banks, the Kamay Botany Bay National Park is covered in dense vegetation. Where the headland meets the shoreline, rocky outcrops are exposed at low tides.

The Kurnell project area maintains a natural setting that dominates, defines and influences the social, amenity and cultural values of Kamay Botany Bay National Park. Kurnell township is very low lying, the highest point being within Kamay Botany Bay National Park at about four metres above sea level. The southern shoreline of Botany Bay consists of low sandstone rock and a narrow sandy beach (Silver Beach) to the south of the project area. There are low retaining walls alongside Monument Track and rock groynes at regular intervals along Silver Beach.

The Kurnell side of Kamay Botany Bay National Park is mostly vegetated with cleared patches of grassed areas near the Kurnell Visitor Centre and Captain Cook Drive. Sclerophyll forest dominates the area with small areas of Littoral rainforest. Exotic pine trees line Monument track between the Kurnell viewing platform and the Joseph Banks Monument.

13.2.1 Landscape character areas

To enable the assessment of impacts the study area has been split into landscape character areas (LCAs). LCAs are defined as areas that are distinct, broadly homogenous and have defining characteristics.

A total of eight LCAs have been defined as shown in Figure 13-1 and described in Table 13-2. Further detail is provided for each LCA in Appendix M (Landscape Character and Visual Impact Assessment).

Landscape sensitivity is a record of the inherent and intrinsic sensitivity of the landscape and the degree to which it can accommodate change. The scale of sensitivity includes:

- High sensitivity landscapes which cannot easily accommodate change
- Moderate sensitivity landscapes which can partly accommodate change
- Low sensitivity landscapes which can easily accommodate change.

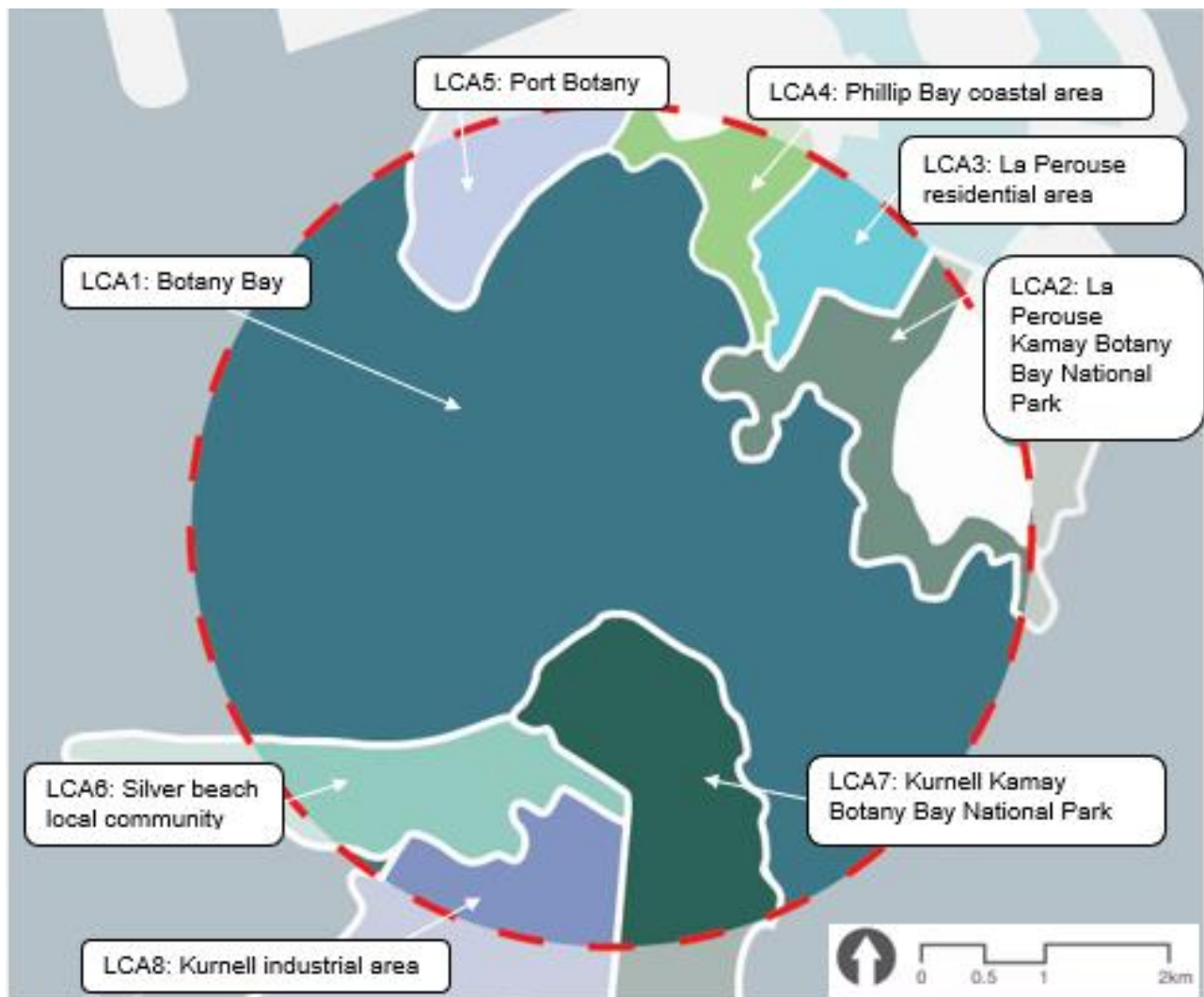


Figure 13-1: Landscape character areas

Table 13-2: Description of LCAs

LCA	Sensitivity	Description
1: Botany Bay	Moderate	This LCA encompasses Botany Bay. Botany Bay's character, while including high-quality natural areas surrounding the project areas and wetlands at Towra Point, is also influenced by industrial activities. Port Botany, Sydney (Kingsford Smith) Airport and the Kurnell Port and Berthing Facility all contribute to its industrial environment. The landscape is predominately a large, flat water body with views stretching across the Bay to the north, south and west.
2: La Perouse Kamay Botany Bay National Park	High	This LCA is located on the northern headland surrounded by LCA 1 and is part of Kamay Botany Bay National Park. The Kamay Botany Bay National Park incorporates various protected heritage sites including Bare Island Fort, Macquarie Watchtower and La Perouse Museum. The headland, coastal rocky interface and sandy beach areas are not heavily vegetated. However, the remainder of the LCA provides high scenic quality due to its heavily vegetated character.
3: La Perouse residential area	Moderate	This LCA is located to the north-east of the project area at La Perouse. The area is defined by homogenous parcels of medium and low-density residential properties. The landscape includes mainly cleared, moderately sized lots with scattered clusters of mature canopy cover. The topography increases gradually in elevation on retreat from the Bay towards the north-west.
4: Phillip Bay coastal area	High	This LCA is located to the north of the project area in between La Perouse headland and Port Botany. This area is relatively undeveloped and mainly comprises recreational and community land uses. The terrain reaches a height of 20 m above sea level on approach to Phillip Bay and La Perouse residential area, towards the north-east extent of the LCA. Areas of dense vegetation along the coastal edge obstruct direct views out from meandering trails particularly, the Guriwal Bush Tucker Trail that connects Frenchmans Beach to Yarra Point and Yarra Bay.
5: Port Botany	Low	This LCA is defined by heavy industrial land uses associated with Port Botany. The landscape is mainly flat, impervious hard surfaces with large, industrial infrastructure or warehouse development.
6: Silver Beach local community	Moderate	This LCA is located on the southern headland of Botany Bay and includes Silver Beach, Prince Charles Parade and the residential extents within Kurnell. The topography is extremely flat and low-lying. It contains homogenous parcels of land that are mostly under residential use. Clusters of small businesses are located along the esplanade and Captain Cook Drive.
7: Kurnell Kamay Botany Bay National Park	High	This LCA consists entirely of the Kamay Botany Bay National Park, incorporating the Kurnell Visitor Centre, Cape Solander Lookout, Cape Bailey Lighthouse and Monument Track. The landscape is densely vegetated with the area having a direct link to the coastal edge.
8: Kurnell industrial area	Low	This LCA is located south of the project area at Kurnell and includes general and heavy industrial land uses such as the Kurnell Refinery and Sydney Desalination Plant. The landscape is mostly flat with large warehouse development and cleared areas of impervious hard surface.

13.2.2 Existing views

The visual envelope map (VEM) in Figure 13-2 shows the theoretical area from which the project would be visible from. A total of 13 viewpoints have been selected to illustrate the potential visual influence of the project as shown in Figure 13-2 and Table 13-3. Further details of the viewpoints are provided in section 5 of Appendix M (Landscape Character and Visual Impact Assessment). The sensitivity of each viewpoint is defined depending on the scenic quality and level of receptors experiencing the view.

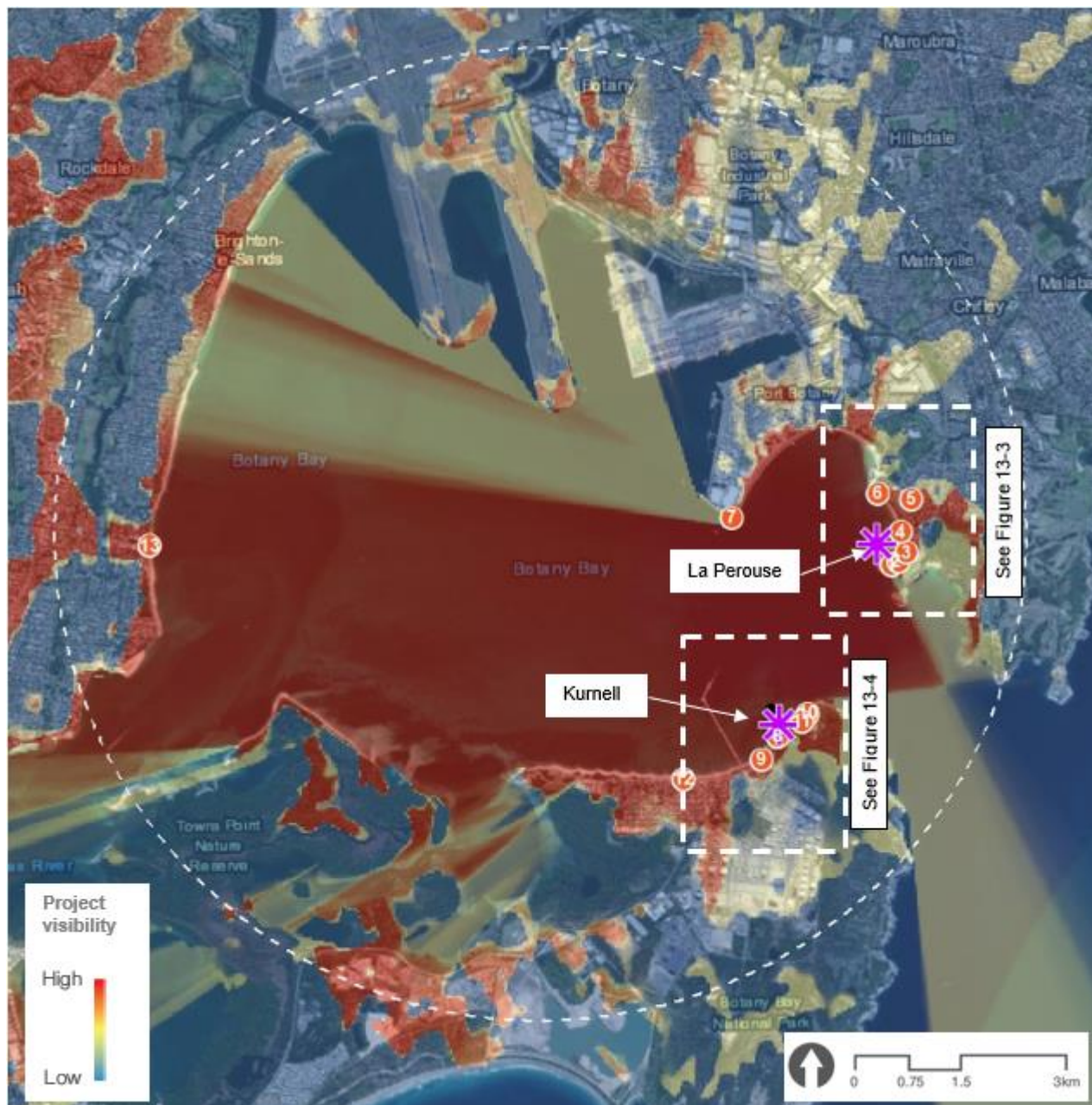


Figure 13-2: Visual envelope map and viewpoint locations



Figure 13-3: Viewpoint locations at La Perouse

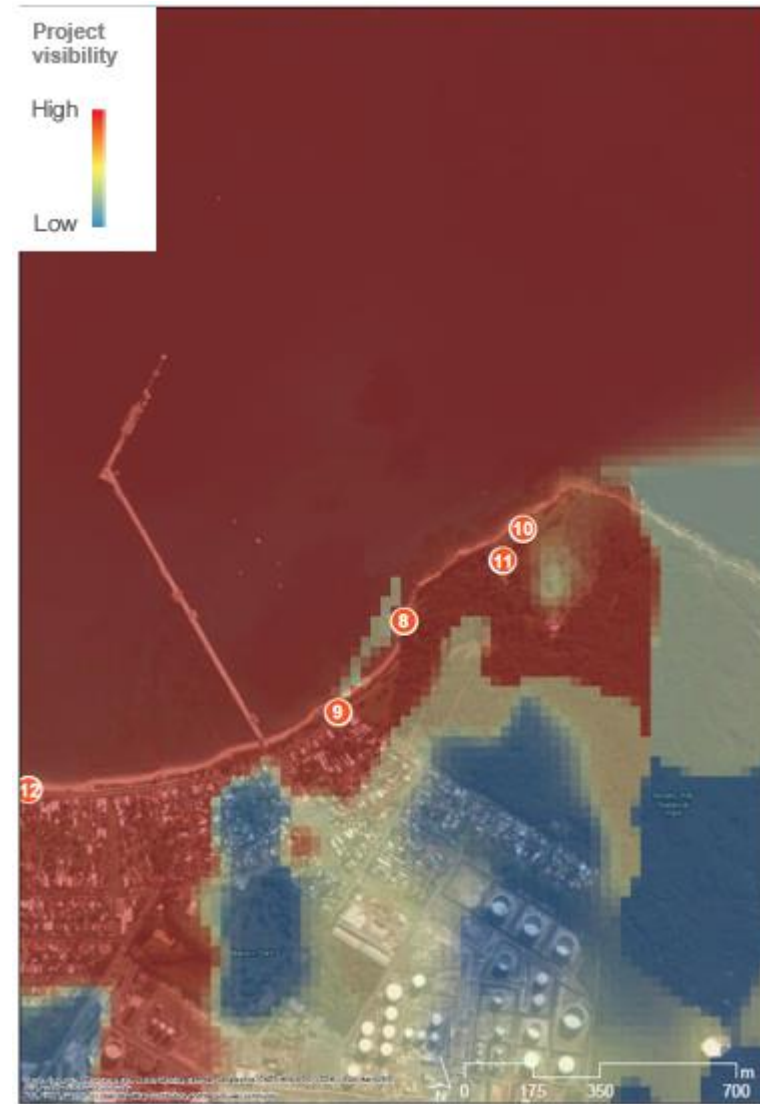


Figure 13-4: Viewpoint locations at Kurnell

Table 13-3: Viewpoints (the dashed line shows where the project would be seen)

Viewpoint 1 – Anzac Parade, La Perouse

Sensitivity: High



View from: The pedestrian path crossing at La Perouse Point, Anzac Parade, looking north towards Frenchmans Bay and Yarra Point.

Viewer type: Road users, pedestrians and recreational users.

Sensitivity: High



View from: The highest level of the La Perouse Point, looking north-west across towards Port Botany

Viewer type: Pedestrians and recreational users.

Viewpoint 3 – Corner of Anzac Parade and Endeavour Avenue, La Perouse

Sensitivity: Moderate



View from: The pedestrian path crossing at the intersection of Anzac Parade and Endeavor Avenue looking south-west towards La Perouse Point.
Viewer type: Pedestrians, receptors from commercial activities on Anzac Parade.

Viewpoint 4 – Frenchmans Beach, La Perouse

Sensitivity: Moderate



View from: Frenchmans Beach, looking south-west towards La Perouse Point.
Viewer type: Recreational beach users.

Viewpoint 5 – Elaroo Avenue, Phillip Bay

Sensitivity: Moderate



View from: Elaroo Avenue, looking south-west towards the project area. The project would be obscured by existing buildings and vegetation.

Viewer type: Pedestrians and residents.

Viewpoint 6 – Guriwal Bush Tucker Trail, La Perouse

Sensitivity: Moderate



View from: Guriwal Bush Tucker Trail at Yarra Point, looking south towards La Perouse Point.

Viewer type: Recreational users of the walking trail

Viewpoint 7 – Molineaux Point Lookout, Prince Wales Drive, Port Botany

Sensitivity: Moderate



View from: Molineaux Point Lookout, looking south-east across Botany Bay.

Viewer type: Recreational users of the lookout

Viewpoint 8 – Captain Cook's Landing Place, Kurnell

Sensitivity: High



View from: The Monument Track, looking north towards Port Botany, Philip Bay and La Perouse.

Viewer type: Recreational users of the track.

Viewpoint 9 – Prince Charles Parade, Kurnell

Sensitivity: High



View from: Prince Charles Parade, looking north-east towards the Captain Cook Landing Place monument.

Viewer type: Commercial and residential receivers

Viewpoint 10 – Monument Track, Kurnell

Sensitivity: High



View from: Monument Track, looking south-west towards the Kurnell Port and Berthing Facility Wharf.

Viewer type: Recreational users of the track

Viewpoint 11 – Alpha House, Monument Track, Kurnell

Sensitivity: Moderate



View from: Alpha House, Monument Track, looking south-west towards Botany Bay. The project would be obscured by existing vegetation.

Viewer type: Recreational users of the track and occupants of Alpha House.

Viewpoint 12 – Silver Beach, Kurnell

Sensitivity: Moderate



View from: Platform on Silver Beach, looking east towards the Kamay Botany Bay National Park.

Viewer type: Recreational users of the beach.

Viewpoint 13 – The Grand Parade, Ramsgate Beach

Sensitivity: Moderate



View from: The Grand Parade at Ramsgate Beach, looking east towards La Perouse Point and Kurnell.

Viewer type: Commercial businesses, pedestrians and beach goers at Brighton le Sands.

13.3 Assessment of potential impacts

The following summarises the construction and operation impacts on landscape character and visual amenity. The assessment considers the sensitivity of the LCA or viewpoint in comparison to the magnitude (nature, scale and duration) of change to determine the level of impact.

13.3.1 Assessment of construction impacts

Landscape character

Table 13-4 summarises the landscape character impacts ratings, with the details provided in Appendix M (Landscape character and visual amenity impact assessment).

Any construction impacts on the area's landscape character would be temporary in nature lasting around 13 months over the construction period. The highest rated impacts would be to LCA2 and LCA7 as these areas are highly sensitive and near the project. LCA3, LCA5 and LCA 8 would not be directly impacted by the project construction due to the distance from the project.

Table 13-4: Summary of construction impacts on LCAs

Landscape character area	Sensitivity	Magnitude	Impact
LCA 1: Botany Bay	Moderate	Low	Moderate-Low
LCA 2: La Perouse Kamay Botany Bay National Park	High	Moderate	High-Moderate
LCA 3: La Perouse residential area	Moderate	Negligible	Negligible
LCA 4: Phillip Bay coastal area	Moderate	Low	Moderate-Low
LCA 5: Port Botany	Low	Negligible	Negligible
LCA 6: Silver Beach local community	Moderate	Low	Moderate-Low
LCA 7: Kurnell Kamay Botany Bay National Park	High	High	High
LCA 8: Kurnell industrial area	Low	Negligible	Negligible

Visual amenity

The activities taking place onsite and within the construction compound areas along with the physical presence of fencing, equipment (such as cranes), material stockpiles and construction vehicles (including marine barges) would result in a temporary visual impact. The construction would be visible by a large catchment due to the prominent nature of the project locations.

As shown in Table 13-5, the visual impacts during construction are rated high or high-moderate for Viewpoints 1, 2, 4, 8, 9 and 10 as construction activities would be clearly visible from these locations. The impacts are rated moderate and moderate-low for Viewpoints 3, 5, 6, 7 and 12 as generally these viewpoints are generally further from the project construction areas and would not be as impacted by the construction activities. Visual impacts on Viewpoint 11: Alpha House, Monument Track, Kurnell and Viewpoint 13: The Grand Parade, Ramsgate Beach would be negligible as the construction works and activities would not be visible from these viewpoints.

Table 13-5: Summary of construction impacts on visual amenity

Viewpoints	Sensitivity	Magnitude	Impact
1 Anzac Parade, La Perouse	High	High-Moderate	High
2 La Perouse Museum, La Perouse	High	Moderate	High-Moderate
3 Corner of Anzac Parade and Endeavour Avenue, La Perouse	Moderate	Moderate	Moderate
4 Frenchmans Beach, La Perouse	Moderate	High	High-Moderate
5 Elaroo Avenue, Phillip Bay	Moderate	Low	Moderate-Low
6 Guriwal Bush Tucker Trail, La Perouse	Moderate	Moderate	Moderate
7 Molineaux Point Lookout, Prince Wales Drive, Port Botany	Moderate	Low	Moderate-Low
8 Captain Cook's Landing Place, Kurnell	High	High	High
9 Prince Charles Parade, Kurnell	High	High	High

Viewpoints	Sensitivity	Magnitude	Impact
10 Monument Track, Kurnell	High	Moderate	High-Moderate
11 Alpha House, Monument Track, Kurnell	Moderate	Negligible	Negligible
12 Silver Beach, Kurnell	Moderate	Low	Moderate-Low
13 The Grand Parade, Ramsgate Beach	Moderate	Negligible	Negligible

13.3.2 Assessment of operation impacts

Landscape character

The iterative process of the design and LCVIA approach means the landscape character and visual amenity assessment considers the design accounting for the various treatments and features included through this design process. The design measures intended to improve the built environment include:

- A slender architectural design of the wharf canopy to reduce the visual bulk and scale
- A material palette that will assist in blending the proposed wharves and seating areas into the surrounding environment
- A design which maintains and frames existing views, particularly heritage views towards historical monuments
- Integrated bespoke seating provisions and feature planting to the La Perouse wharf landside tie-in to define the arrival point and gateway to the project and wharf entrance
- Integrated level changes within the existing topography undulation.

Table 13-6 shows the landscape character impact ratings. The impact to the LCAs is rated moderate to negligible, with the greater impacts concentrated mainly within the LCAs which are directly impacted by the project.

The project's structural components would be built within the marine environment of Botany Bay, and the design is characteristic of similar maritime infrastructure in Botany Bay. The urban design considers key natural features of the landscape setting and area to improve the project's consistency with the immediate landscape character. This means the project would be congruous (in harmony) with its setting, forming an expected component of the marine environment; essentially re-establishing similar infrastructure that was in place at La Perouse and Kurnell for 100 years.

Table 13-6: Summary of operation impacts on LCAs

Landscape character area	Sensitivity	Magnitude of change	Impact
LCA 1: Botany Bay	Moderate	Low	Moderate-Low
LCA 2: La Perouse Kamay Botany Bay National Park	High	Low	Moderate
LCA 3: La Perouse residential coastal area	Moderate	Negligible	Negligible
LCA 4: Phillip Bay coastal area	Moderate	Low	Moderate-Low
LCA 5: Port Botany	Low	Negligible	Negligible
LCA 6: Silver Beach local community	Moderate	Negligible	Negligible
LCA 7: Kurnell Kamay Botany Bay National Park	High	Low	Moderate
LCA 8: Kurnell industrial area	Low	Negligible	Negligible

Visual amenity

Table 13-7 summarises the impacts on visual amenity once the project is operational. Indicative photomontages with the project and embedded design mitigation in place have been provided for representative viewpoints as shown in Figure 13-5 to Figure 13-8.

High to moderate visual impacts are concentrated to viewpoints nearest the project areas. At La Perouse, the visual amenity impacts on Viewpoint 2 are rated as high-moderate. This is due to the high scenic quality of the view, and historic and sensitive nature of the location next to La Perouse

monument and the Museum. Viewpoint 4 is rated as high-moderate due to the high degree of contrast between the proposed wharf structure and the natural composition of the headland. At Kurnell, the visual impacts at Viewpoint 8 and 9 are rated as high. This is due to the high heritage value associated with the viewpoints and high scenic quality of the Kamay Botany Bay National Park. The magnitude of change would be high as from these viewpoints the wharf would be a large structural extension into the Bay.

Table 13-7: Summary of operation impacts on visual amenity

Viewpoints	Sensitivity	Magnitude	Impact
1 Anzac Parade, La Perouse	High	Low	Moderate
2 La Perouse Museum, La Perouse	High	Moderate	High-Moderate
3 Corner of Anzac Parade and Endeavour Avenue, La Perouse	Moderate	Low	Moderate-Low
4 Frenchmans Beach, La Perouse	Moderate	High	High-Moderate
5 Elaroo Avenue, Phillip Bay	Moderate	Negligible	Negligible
6 Guriwal Bush Tucker Trail, La Perouse	Moderate	Low	Moderate-Low
7 Molineaux Point Lookout, Prince Wales Drive, Port Botany	Moderate	Negligible	Negligible
8 Captain Cook's Landing Place, Kurnell	High	High	High
9 Prince Charles Parade, Kurnell	High	High	High
10 Monument Track, Kurnell	High	Moderate	High-Moderate
11 Alpha House, Monument Track, Kurnell	Moderate	Negligible	Negligible
12 Silver Beach, Kurnell	Moderate	Negligible	Negligible
13 The Grand Parade, Ramsgate Beach	Moderate	Negligible	Negligible



Figure 13-5: Viewpoint 2 showing the extent of the project



Figure 13-6: Viewpoint 4 showing the extent of the project



Figure 13-7: Viewpoint 6 showing the extent of the project



Figure 13-8: Viewpoint 9 showing the extent of the project

13.3.3 Assessment of lighting impacts

The wharves would need to be lit for security and safety. While the ferry service is likely to operate between 7am and 7pm, the wharf would still be open to the public for use. The lighting design would be progressed during detailed design in accordance with Australian and New Zealand Standard 1158: 2019 (Lighting for Roads and Public Spaces) to achieve/include:

- 150 lux illumination level
- Emergency and exit lighting.

The lighting design would also avoid any obtrusive light spill to residential areas in accordance with Australian and New Zealand Standard 4282:2019 (Control of Obtrusive Effects of Outdoor Lighting) and National Light Pollution Guidelines for Wildlife (Australian Government, Department of the Environment and Energy, 2020).

The section of Anzac Parade (in La Perouse) along the peninsula where the wharf is proposed is currently lit. Any lighting of the wharf would also be seen in the context of the lighting at Port Botany. Therefore, lighting of the wharf is not considered to have significant impacts to landscape character and visual amenity. Car parking areas would be lit to the same extent that already exists along Anzac Parade at La Perouse. Therefore, no additional impacts are anticipated from car park lighting.

At Kurnell, there is no lighting along Monument Track near the proposed wharf. Any lighting on the proposed wharf or along Monument Track would introduce light into this environment. To minimise impacts, the lighting should be downlit and would be designed in consultation with National Parks and Wildlife Service.

Lighting impacts on biodiversity is assessed in Chapter 11 (Terrestrial biodiversity). Lighting impacts on airspace is assessed in Chapter 24 (Hazard and risk).

13.4 Environmental management measures

As part of the iterative design process, embedded mitigation measures are included in the design to avoid and reduce impacts on landscape character and visual amenity. Further measures to management and mitigate impacts during construction and operation of the project are listed in Table 13-8.

Table 13-8: Environmental management measures for landscape character and visual amenity

Impact	ID	Environmental management measure	Responsibility	Timing
Placemaking	L1	The design will be developed in consultation with National Parks and Wildlife Service, the La Perouse Local Aboriginal Land Council, Registered Aboriginal Parties, Port Authority NSW and Transport for NSW's Maritime and Urban Design Divisions. These reviews will follow Beyond the Pavement (Transport for NSW, 2020a) and Connecting with Country (Government Architect, 2020).	Transport for NSW	Detailed design
Change to existing lighting environment	L2	The lighting will be designed in accordance with AS/NZS 1158:2005 Lighting for Roads and Public Spaces (Australian and New Zealand Standard, 2005), AS/NZS 4282:2019 Control of Obtrusive Effects of Outdoor Lighting (Australian and New Zealand Standard, 2019) and to be guided by the National Light Pollution Guidelines	Transport for NSW	Detailed design

Impact	ID	Environmental management measure	Responsibility	Timing
		for Wildlife (Australian Government, Department of the Environment and Energy, 2013).		
Loss of vegetation and landscape character	L3	<p>An Urban Design and Landscape Plan (UDLP) or equivalent for the project will be prepared. It will be implemented under the Construction Environment Management Plan (CEMP). The UDLP will:</p> <ul style="list-style-type: none"> a. Outline the process to ensure place design principles implemented b. Outline consultation with relevant stakeholders such as National Parks and Wildlife Service, Local Aboriginal Land Council, Registered Aboriginal Parties and Port Authority NSW c. Include the species and native vegetation to respond to the existing landscape character, including specific: <ul style="list-style-type: none"> i. Planting density and location ii. Landscape management requirements. 	Transport for NSW	Detailed design
Maintain amenity during construction	L4	All areas and activities in the construction boundary will be managed to ensure the appropriate storage of equipment, parking, stockpile screening and arrangements for the storage and removal of rubbish and waste materials.	Contractor	Construction