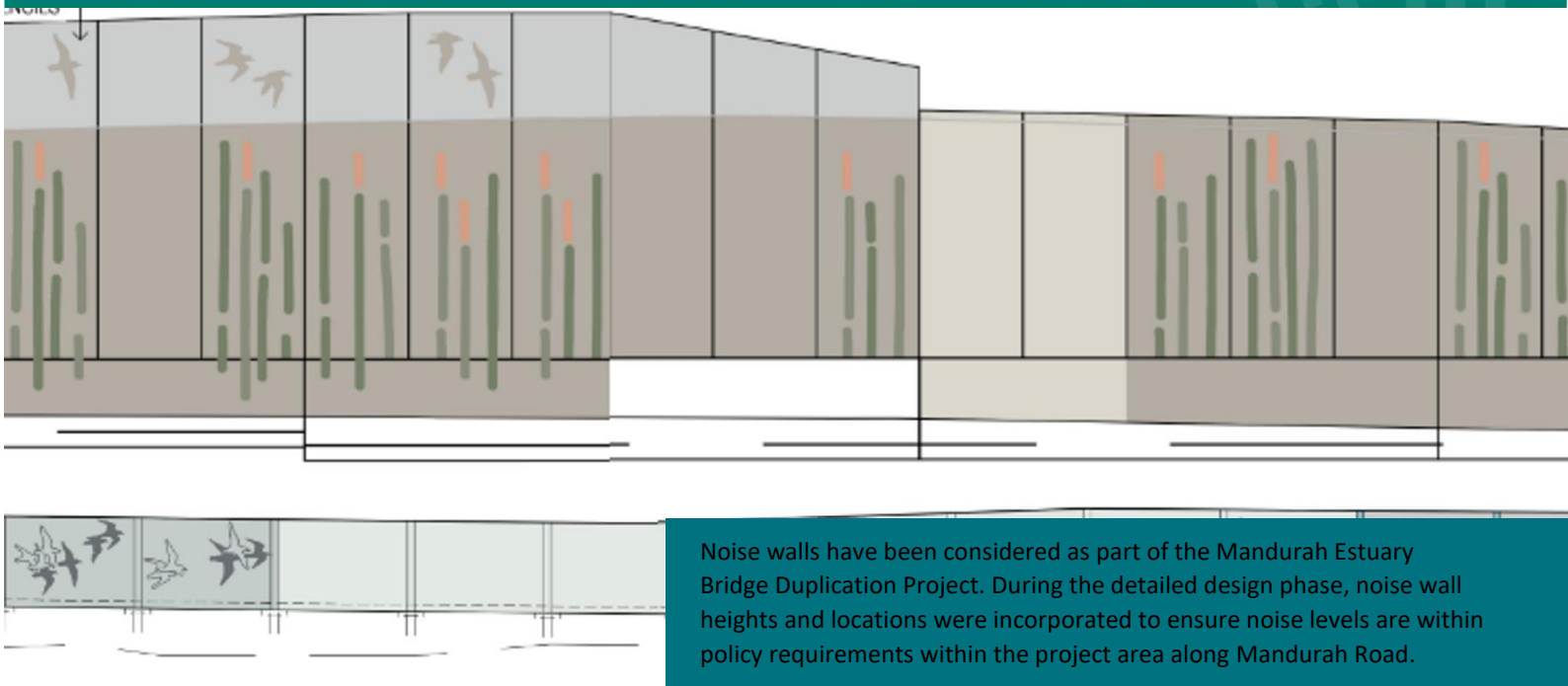




# Mandurah Estuary Bridge Duplication Project



Noise walls have been considered as part of the Mandurah Estuary Bridge Duplication Project. During the detailed design phase, noise wall heights and locations were incorporated to ensure noise levels are within policy requirements within the project area along Mandurah Road.

## Noise walls

### What is a noise wall?

Noise walls are physical barriers, typically made using concrete panels, that are installed as part of major construction projects to reduce noise levels for residential properties adjacent to main roads with high traffic volumes.

### How is the need for noise management determined?

The need for noise management is determined through noise modelling that identifies whether residential properties are likely to experience high levels of traffic noise in proximity to the project boundary, as defined in the Western Australian Planning Commission's *State Planning Policy 5.4 (SPP5.4) Road and Rail Transport Noise and Freight Considerations in Land Use Planning*.

### How is location and height determined?

In line with SPP5.4, acoustic experts were engaged to undertake noise monitoring and assessments within the project boundary and at selected locations within close proximity of works.

Existing noise levels were recorded from the road as a baseline for forecasting future noise levels. The noise model considers factors such as road geometry and topography, vehicle types, proposed traffic speed, future traffic volumes, road surface, the height of the new road and the distance between the road and the properties.

Location is also based on an assessment of the extent of major upgrade works being performed in the area and the change of traffic volumes to the area being upgraded.

The scope for noise walls on the project is determined by the scope of works provided by Main Roads WA and limited to the areas within the project scope.

### Noise wall design

Due to the design of the project and the condition of the ground, clearing was required to be able to construct the new bridge and noise walls. The removal of vegetation within any project footprint is always done reluctantly.

The walls will be built from a precast concrete panel and steel post design, similar to those located in various sections along the freeways throughout Perth.

These panels will range from 2m to 4m in height depending on ground levels and will be 4m wide.

In response to community requests, additional noise walls have been included within the Project scope that extend closer to the traffic lights at Leslie Street, Dudley Park and past Abbotswood Lake, Erskine.

### Noise wall construction

Initial works include the construction of retaining walls running parallel to Mandurah Road on all approaches to the bridge. This is followed by the installation of noise wall footings. Noise wall posts and panels will then be installed.

Noise walls will be constructed in a staged manner, starting along Leisure Way and Egret Point Road.

This will be followed by Waterside Drive, and then along Seahawk Drive towards Abbotswood Lake. For Waterlily Drive, noise walls are scheduled to be built once the new bridge has been constructed. All walls will be installed before the new bridge opens.

### Is any more vegetation clearing planned?

There may also be some minor clearing that needs to take place at the far eastern end of the casting bed area to enable the footpath to tie into Waterlily Drive. This aligns to the final design requirements.

There is a need for further clearing in order to construct the additional walls. The Project is investigating varying work methods to ensure clearing is minimised.

### What is planned in terms of beautification of the area?

The Project has been working in collaboration with the City of Mandurah as representatives of the local community, to ensure that the artwork elements of the noise walls align to the City's strategy and long-term vision for Mandurah.

Western Australian trees and shrubs as recommended by the City of Mandurah, local environmental groups, including those in close proximity to the Project, have been incorporated into the species selected for revegetation, as well as accommodating species suitable to Crime Prevention Through Environmental Design.

Revegetation will be completed in 2026.

### What factors were considered in the scope of the noise wall artwork?

In designing the artwork for the roadside and pedestrian / residential side artwork on the noise walls, special consideration was given to Visual Induced Motion Sickness (VIMS).

This assisted to determine colour and contrast selection that assists viewers to perceive the artwork without straining their eyes and for smoother transitions.

The artwork moves in a predictable and slow movement pattern of low frequency. Consideration is also given to how the artwork appears in the viewer's peripheral vision while not in direct line of sight to drivers and cause distraction.

### What will I see on the noise walls from a roadside perspective?

A theme of *wetland shore birds in flight* has been selected for the noise walls, complemented by a colour palette that captures the shifting colours of water receding on the shoreline to the sky above. The flight of the birds is not in a repeat pattern and will be recessed into the concrete panels using muted tones to blend in with the surrounding area.

### What will pedestrians and residents see on walls facing pathways and residential areas?

The noise wall that runs along Waterlily Drive and the new shared footpath will have artwork that is inspired by the local samphire plant. Along the other walls, the shore birds in flight will occasionally reverse to face

residents. Patterns and colours used on the reverse side of the noise walls will also be subtle by design, to blend in with the surrounds and future revegetation.

A mural coordinated through the Bindjareb Reference Group will feature on walls leading to the bus stop adjacent to Leisure Way.

### **Has there been a consideration for wildlife in the area when choosing wall materials and finishes?**

Noise walls included within the Project have repetitive patterns on solid concrete surfaces. We chose this material as transparent surfaces such as glass pose the biggest issue for birds as they do not recognise the glass as a solid object.

### **Connection points to new and existing pathways**

Openings in the wall must be created to allow pedestrians and cyclists access to the new PSP and enable passive surveillance.

These openings do not reduce the effectiveness of the noise wall. Access points at Waterside Drive will be retained and a new opening at Waterlily Drive will be introduced. Access points for bus stops at Seahawk Drive and Leisure Way will be introduced and retained respectively.

### **Further information**

To stay up to date with the latest project information, please visit [www.mainroads.wa.gov.au/mebd](http://www.mainroads.wa.gov.au/mebd) and subscribe for project updates. You can also join our Facebook Group, **Mandurah Estuary Bridge Duplication Community**.