

Piling Impacts - Swan River Pedestrian Bridge

Why is the piling so noisy?

Piling operations vary for different types of construction. These bridge piles have lighter, hollow steel casings with a closed end, and will be filled with concrete after they are in place.

The decision to use large diameter steel cased piles for the Swan River Pedestrian Bridge was largely to minimise the footprint of the structure in the river, i.e. only 48 piles in total, where alternative options may have required double that amount, as well as to remove the risk of contaminating the river. The decision to use larger, rather than smaller piles was also influenced by the lightweight nature of this bridge design.

Unfortunately, the piles generate more noise when being driven than concrete or other types of steel piles even though the hammer is housed inside a casing. Ground, wind and water conditions also contribute to the level of piling noise.

The location of your home and surrounding buildings can also affect the level of noise and we acknowledge that some streets are experiencing more noise than others.

The options to reduce the piling noise are extremely limited. Main Roads with contractor York Rizzani has investigated several options, however, none of them can offer **immediate or practical** relief to residents. Some options would prolong the piling period or potentially increase noise impacts. Options being investigated include:

- Using a bigger hammer to push the piles in (not considered viable - noisier but faster, pile steel not strong enough for bigger hammer use);
- Filling the piles with water to reduce the bell effect (not considered viable - acoustic specialist advised that it is unlikely to significantly reduce noise, contamination risk to river and crane stability risk);
- Shrouding the pile to muffle the noise (may be viable, the hammer is already encased, an additional shroud is not available in Australia, some noise reduction, prolong piling program);

- Covering the pile with rubber baffles (not considered viable - not suited to this hammer size, this hammer or bigger required to drive the piles to depth required);
- Changing the piling methodology (none identified as viable - limited options to pile under river environmental conditions, project will take longer to complete);
- Reducing the hours of piling work (not considered viable - no reduced noise, piling will take longer); and
- Welding pile splicing on the ground before driving piles (not considered viable - reduce overall piling duration by a few days but increase frequency and noise of piling).

An independent acoustic specialist continues to assist with the review and evaluation of the above options.

Work method – Piling

Piling is not a continuous construction activity on the bridge site. There are 48 piles required for the bridge and on average, two piles are completed each day.

There are approximately 24 completed piles in place (as at 15 April 2016). As the piling work is in the river, all work must stop when dolphins are in the area. Our river dolphins are very curious and delays due to dolphin visits can amount to a few hours each day. There are also long intermissions when there is no piling activity.

How do we manage the impacts of construction including noise and vibration?

A Construction Environmental Management Plan (CEMP) is in place to manage construction activities and potential impacts, including piling, noise and vibration. This plan was reviewed extensively and approved following input from major stakeholders (City of Perth, Metropolitan Redevelopment Authority and Department of Parks and Wildlife) before work was allowed to start on the project. Noise and vibration management plans were included with the CEMP.

What can we do to help?

From 2 May, once piling commences on the East Perth side, and to enable residents to plan around noisy piling activity, the contractor will endeavour to provide a daily piling schedule. This information will be available from the Perth Stadium website each morning. **It should be considered as a guide and some timeframes could vary as a result of dolphin interactions and other delays.**

Currently, construction works are undertaken between the hours of **7am and 7pm weekdays** and **7am and 5pm** on **Saturdays**. Piling activity will not be undertaken before **8am** on **Saturdays**.