

Noise & Vibration



No nuisance or health impacts to local residents from dust, air emissions, or light spill generated by construction, mining or closure activities.

Noise

Noise goals are set in accordance with the EPA's Environment Protection (Noise) Policy 2007 (EPP) and are derived based on the land uses promoted by Council's Development Plan.

Potential noise sources of the Bird in Hand Gold Project include:

- Ventilation fans (with silencers)
- Maintenance workshop
- Articulated truck movements from underground to surface
- Front end loader on Integrated Mullock Landform
- 'Run of Mine' ore bin and conveyor
- Cement batching plant
- Water pumps, light vehicles, deliveries.

A decibel (dBA) is a unit of measurement that indicates how loud a sound is. Humans can hear sounds between 0 and 140 decibels.

DAY – Existing average noise levels surrounding the project are between 46 and 52 dB(A), with maximums occurring frequently above 55 dB(A).

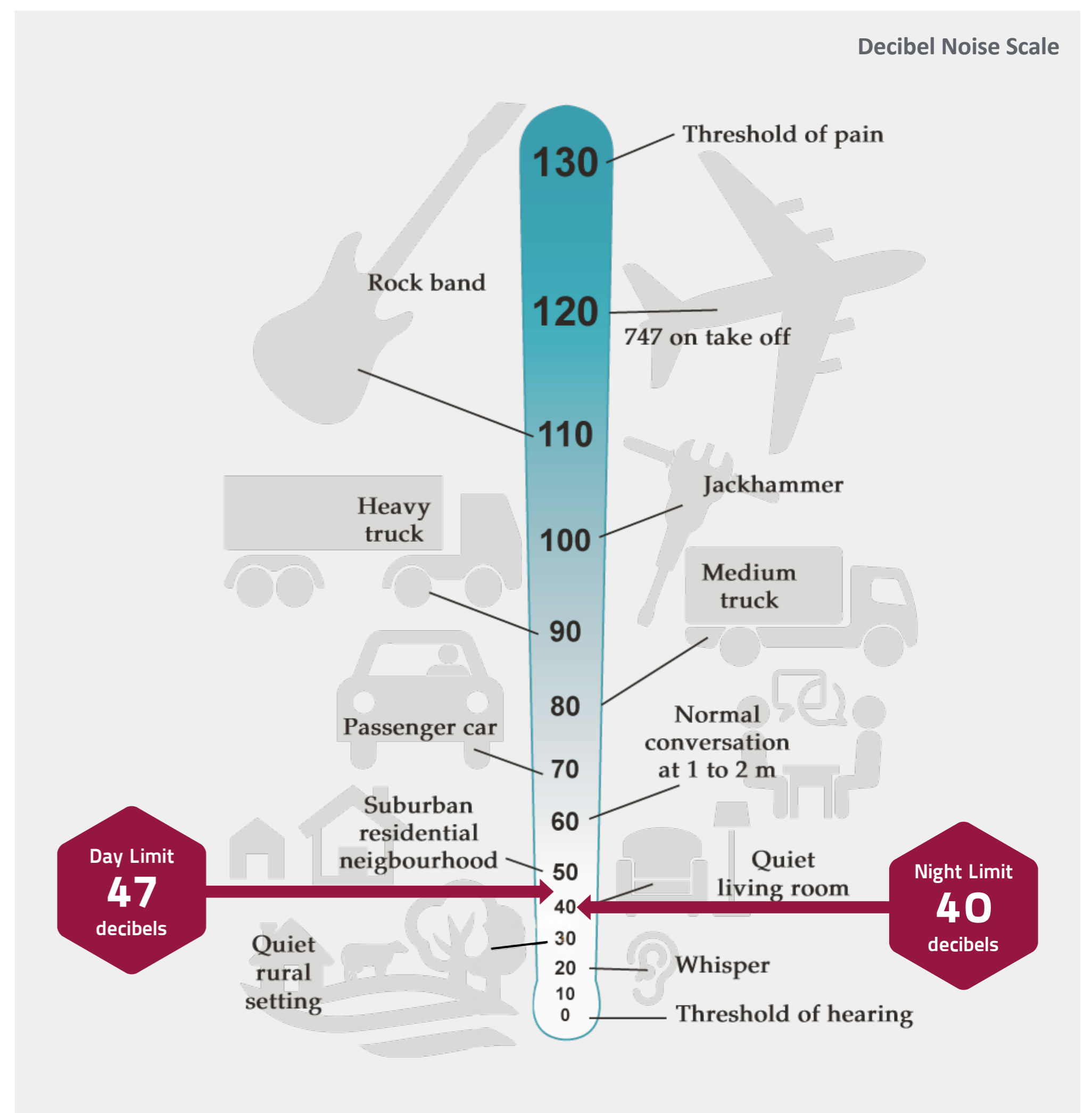
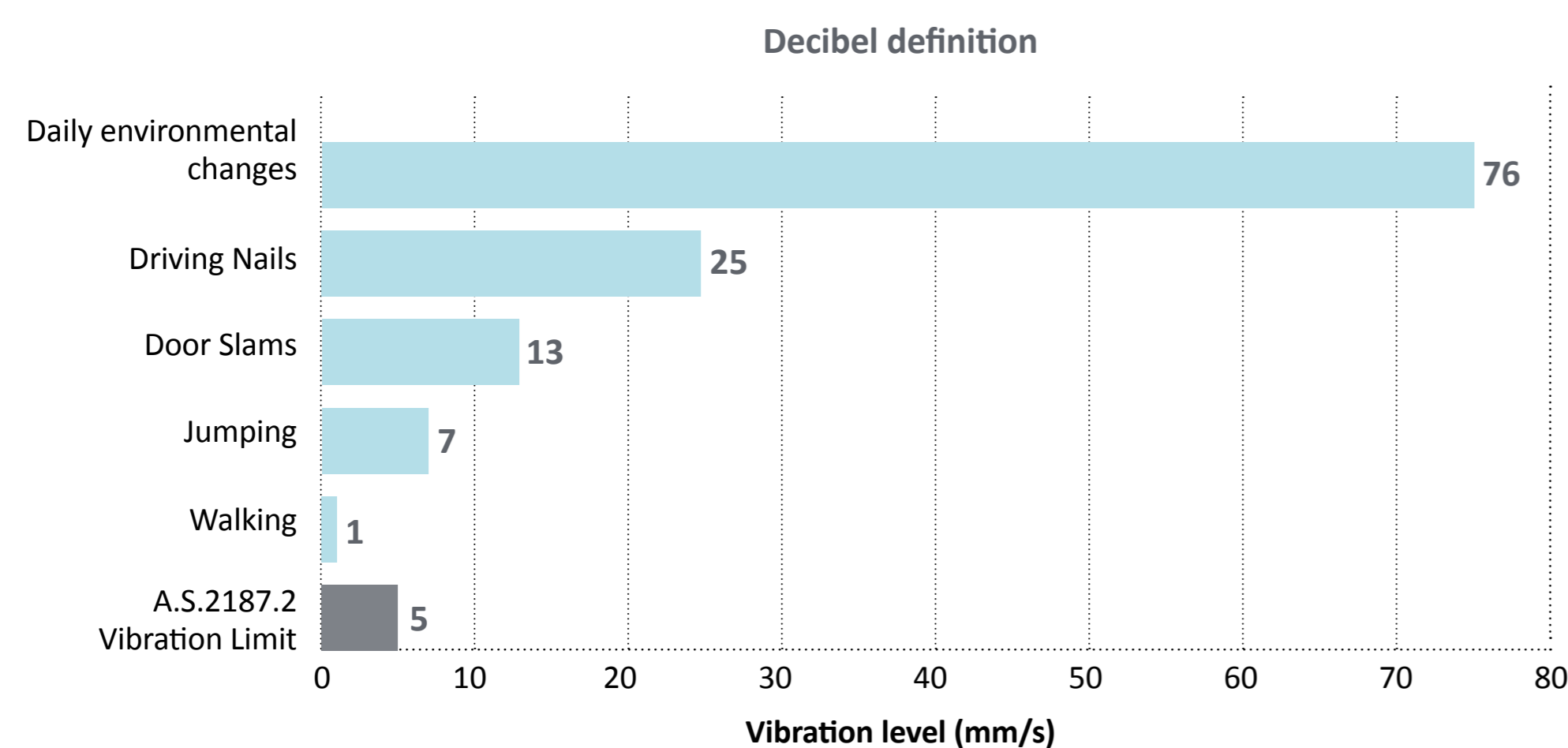
NIGHT – Existing average noise levels surrounding the project are between 39 and 45 dB(A), with maximums occurring generally between 45 and 50 dB(A), however, peaks have been observed at 56 dB(A).

The proposed Mining Lease and nearest noise-sensitive receptors are located within the Watershed (Primary Production) Zone within the Onkaparinga Valley Policy Area.

Construction will have noise limits applied, unlike any other rural development in South Australia.

Operational Targets are proposed to be 47 dB(A) during the day and 40 dB(A) during the night, which is 10 dB(A) lower than EPA requirements.

Receiver Zone	Day Limit	Night Limit
Watershed (Primary Production)	57dB	50dB
Mine Operating Targets	47dB(A)	40dB(A)



Vibration

Vibration & air overpressure

- When explosives detonate in rock, most of the energy is used in breaking and displacing the rock mass.
- However, some of energy is released in the form of ground vibration and air-overpressure.
- Air over pressure is a sound wave from blasting that is generated below the threshold of human hearing.
- We cannot hear it but we can feel it.

How much does it move?



WIDTH COMPARISON

Blasting Management Strategies

Ground vibration

- Process of charging airspace in drill holes
- Explosive quantity
- Explosive type
- Initiation timing and sequence

Air overpressure

- Explosive quantity
- Explosive type
- Initiation timing
- Number of holes
- Rock volume between tunnel and explosive location

