



## FREQUENTLY ASKED QUESTIONS

### LiDAR Program

#### **What does this Program involve?**

We have installed a Light Detection and Ranging (LiDAR) unit to help pinpoint where dust is being generated and its path through the air. We have also installed particle monitors (including two Tapered Element Oscillating Microbalances and one Beta Attenuation Monitor) across Beeliar and Muster to help determine dust concentrations in air.

#### **What is a LiDAR?**

LiDAR stands for Light Detection and Ranging and is a well-established technology developed in the 1960s. The LiDAR instrument sends out thousands of infrared light pulses per second and measures the amount of time it takes for each pulse to bounce back after being reflected from a distant object (generally called backscatter). A measurement is taken of the average backscatter of particles within every 20 metre length of the light beam out to around four kilometres. The average intensity of the backscattered light from the particles in the atmosphere gives a qualitative measure of particles dispersed in the air.

#### **Why is the LiDAR on a tower?**

Trees or buildings in the way will obstruct the LiDAR beam. It is therefore placed on a tower to ensure the beam passes over these obstructions and can view the largest possible area.

#### **Is the LiDAR beam eye safe?**

The laser beam emitted by the LiDAR is infrared and causes no adverse health impacts on people.

#### **What happens when it rains?**

The LiDAR operates during all kinds of weather. It is worth noting that during periods of very high humidity or rainfall, the LiDAR may return a higher backscatter signal than normal over the scan area. These high signals can create the impression that there is a region-wide dust event occurring. DWER will be able to determine whether such weather caused such backscatter in our scans, once the Program is completed.

#### **How can I view the LiDAR feed?**

As with DWER's previous LiDAR programs at Cape Lambert, Port Hedland and Mandogalup, the LiDAR and particle monitor recordings will be live-streamed on our website during the study and can be accessed by [clicking here](#).



Government of **Western Australia**  
Department of **Water and Environmental Regulation**

**Why did you choose this equipment?**

What is great about using our LiDAR in conjunction with our dust particle monitors is that we can detect where dust plumes originate and how they are dispersed.

**Is there anything else I should know?**

It is important to stress there are some limitations, as our LiDAR picks up most dust plumes but cannot detect those that are short-lived or missed by its 10-minute scans. Some plumes can also be outside the LiDAR's four-kilometre line-of sight.

**Where can I find out more information on the Program?**

The department has published a factsheet with information on the Program, which is available at [www.dwer.wa.gov.au/CAAMP](http://www.dwer.wa.gov.au/CAAMP)