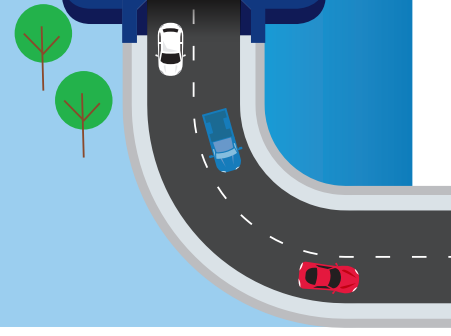




Western Harbour Tunnel and Warringah Freeway Upgrade



Air quality

We recognise that air quality is important to you. Our commitment is that the tunnels will be built and operated to meet strict air quality standards using modern ventilation and tunnel design. All ventilation systems will be built and operated to strictly comply with any conditions specified in DPIE's planning approval, and the Environment Protection Licence (EPL) to be issued by the NSW Environment Protection Authority (EPA).

You may be interested to know the independent NSW Chief Scientist and Engineer has released a report in relation to road tunnel air quality. The report found emissions from well-designed road tunnels cause a negligible change to surrounding air quality, and as such, there is little to no health benefit for surrounding communities in installing filtration and air treatment systems in such tunnels. You can learn more about how we monitor air quality by visiting www.chiefscientist.nsw.gov.au.

Visit our interactive portal to see how Sydney's air quality compares with the world

 nswroads.work/airquality

Despite there
being more



cars and trucks

on the road,

vehicle emissions

have fallen over the past 20 years,
as a result of **improved fuel quality**

and engine designs,



such as hybrid and electric vehicles.

Aerial of Sydney Harbour and North Sydney CBD



For more information please refer to Chapter 12: Air quality in the EIS

Assessing air quality

We have carried out a detailed assessment of air quality in consultation with independent specialist agencies including the EPA, Office of the independent NSW Chief Scientist and Engineer, Ministry of Health and the Advisory Committee on Tunnel Air Quality (ACTAQ) to ensure our project will meet regulatory requirements and manage the potential impacts on air quality. Our air quality assessment was subject to an independent review by international technical experts, coordinated by the NSW Chief Scientist and Engineer. It is now published on the Department of Planning, Industry and Environment (DPIE) website: planningportal.nsw.gov.au/major-projects/project/10451

How we regulate air quality from tunnels

In NSW, DPIE monitors, analyses and publishes information about air quality. The EPA regulates air quality and implements measures for managing and reporting air pollution.

We understand community concerns about air quality, which is why in 2018, the NSW Government announced stronger measures on emissions from motorway tunnels.

These measures include the EPA regulating the ventilation outlets for all current and future operating motorway tunnels to ensure they meet air quality limits. As part of these measures additional checks are required as part of the environmental assessment process. Before the EIS can go on public display the:

- ACTAQ coordinates a scientific review of the project's air emissions from ventilation outlets
- NSW Chief Health Officer releases a statement on the potential health impact of emissions from tunnel ventilation outlets.

Both documents for the Western Harbour Tunnel and Warringah Freeway Upgrade are available to view on DPIE's major projects website: planningportal.nsw.gov.au/major-projects/project/10451



When we are building

We know how important it is to protect air quality during construction for your health, and the health of everyone working on site. Dust matters, so we are putting a series of measures in place to suppress it and monitor your air quality every day.

Like any building work, dust is unavoidable. We will have an experienced construction team who will work to minimise dust. They will use dust suppression methods, including stabilising loose material and watering the site and trucks.

Most of the material we excavate will be clean, crushed sandstone. This will be removed in covered trucks to minimise dust falling from trucks.

We will manage potential odours from our excavation work by having experienced construction contractors treat any of those materials and then remove them from site in sealed trucks.

Construction activity at each site is carried out under an EPL, issued by the EPA, which will include limits relating to air quality and dust.

When we are building, we will be monitoring dust around the sites to ensure our methods are allowing us to meet the terms of our EPL and inform us if we need to make changes.

Odours at White Bay

We understand you have concerns about the potential smell when we transfer sea-bed materials to White Bay for treatment and transfer to landfill.

We will either load materials directly from barges into sealed and covered trucks or temporarily store material in a protected area before treatment, to reduce odour.

We have assessed the potential for odours at the White Bay site and as a result, we are not expecting odour levels to be detectable.

The Department of Defence has been carrying out the same activity at this site for over a year and have not received any complaints or concerns regarding odours.

When we are open to traffic

Surface air quality

Air quality in Sydney has improved over the last few decades due to initiatives which have reduced emissions from industry, motor vehicles, businesses and residences. Motor vehicle emissions are predicted to decrease significantly as a result of improvements in emission control and vehicle engine technology. Overall, traffic emissions in Sydney are predicted to be reduced by up to 50 per cent by 2027 and up to 65 per cent by 2037, when compared to 2016.

You will experience an improvement in air quality along the Western Distributor, Sydney Harbour Bridge and Warringah Freeway as the result of more vehicles using the Western Harbour Tunnel, reducing traffic on these roads.

Our studies have shown there will be a small impact on the local air quality along some of the surface roads we are building and upgrading, as well as some existing roads due to increased local traffic.

Our ventilation facilities use elevated outlets to eject tunnel emissions high into the atmosphere where they mix with the surrounding air, dispersing hundreds of times, quickly becoming indistinguishable from background levels.

Our studies have also shown emissions the ventilation outlets for the project will only have a minimal impact

on the surrounding air quality. This impact is negligible and will be generally undetectable. The ventilation outlets will be continuously monitored. The EPA regulates the ventilation outlets for all current and future operating motorway tunnels to ensure they meet air quality limits.

You will see our ventilation facilities at the following locations:

- Rozelle Interchange (approved as part of the WestConnex M4-M5 Link)
- in the Warringah Freeway Corridor, north of Ernest Street.

Our ventilation system is also designed to ensure there are zero emissions from the tunnel exits.

In-tunnel air quality

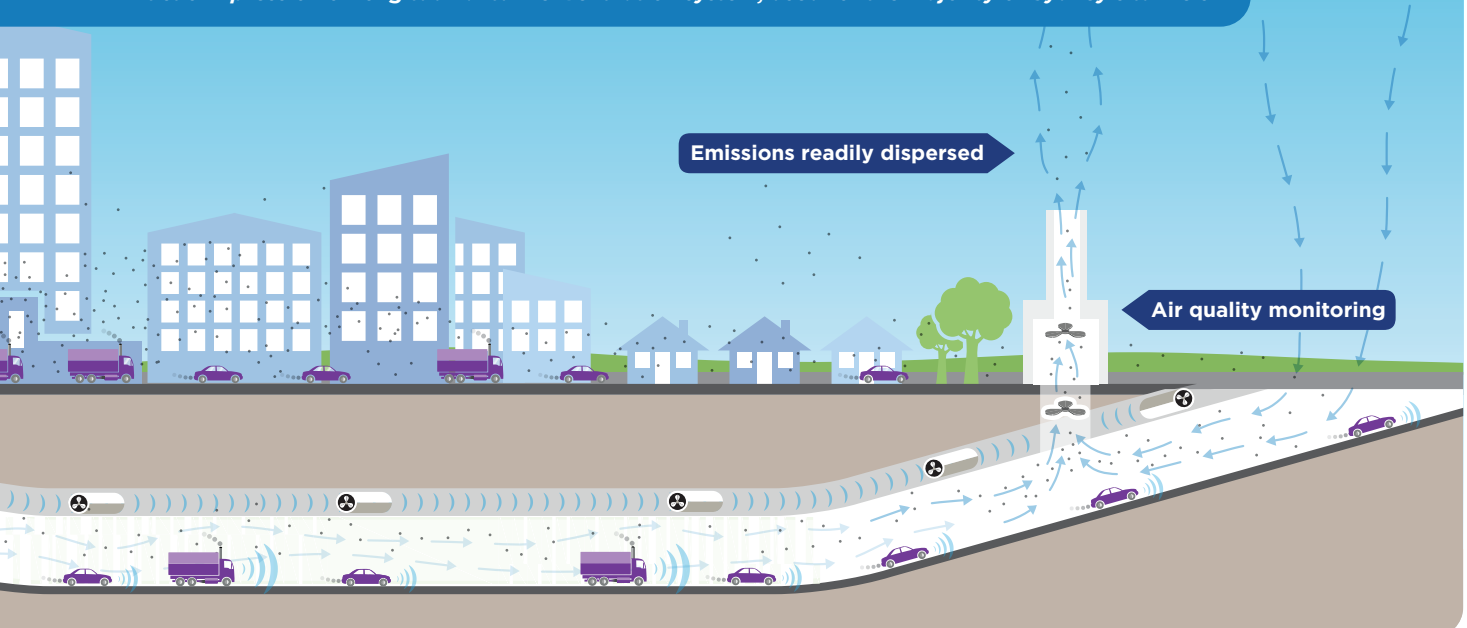
While motor vehicle emissions are a source of air pollution, modern tunnel ventilation design ensures sufficient air flows within the tunnel to meet strict air quality requirements.

We have carried out modelling on in-tunnel air quality based on:

- expected traffic volumes
- maximum traffic volumes
- breakdown or major incidents in the tunnels.

The results of our modelling show the ventilation system installed in the tunnel will be able to manage the tunnel air to meet the air quality criteria in all of these situations.

Artist's impression of longitudinal tunnel ventilation system, used for the majority of Sydney's tunnels



Future air quality monitoring

We will continue monitoring air quality within the ventilation outlets and tunnel 24 hours a day during operation and use real-time data to ensure we are meeting strict air quality criteria.

In addition, ambient air quality monitoring will also be carried out for 12 months before, and a set period of time, likely at least 24 months, after the tunnel opens to ensure we are meeting air quality standards.

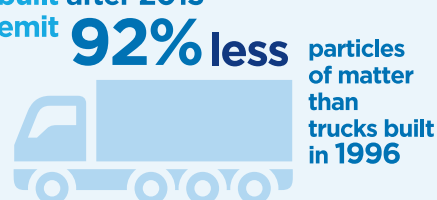
The location of these monitoring stations and duration of monitoring will be determined by the Air Quality Community Consultative Committee (AQCCC), which will comprise of representatives from the tunnel operator, local council and local community. Air quality information will also be available on the tunnel operator's website.

The AQCCC will be independently chaired by a chairperson appointed in consultation with DPIE.



Cars built after 2013 emit **97% less** oxides of nitrogen than vehicles built in 1976

Diesel trucks built after 2013 emit



92% less particles of matter than trucks built in 1996

By 2036 there will be a

48% decrease in PM2.5 vehicle emissions since 2003




Contact the Western Harbour Tunnel and Beaches Link team

 nswroads.work/whtbl

 whtbl@transport.nsw.gov.au

 1800 931 189

 Customer feedback
Transport for NSW, Locked Bag 928
North Sydney NSW 2059

Visit our interactive web portal

Read the EIS, find out more or ask our team a question.

 nswroads.work/whtportal



If you need help understanding this information, please contact the Translating and Interpreting Service on 131 450 and ask them to call us on 1800 931 189.

Privacy Transport for NSW is collecting your personal information in connection with the Western Harbour Tunnel and Warringah Freeway Upgrade ("the Project"). In addition to collecting your name and contact details we may collect other information such as your submissions and other communications with us. We will retain and use this information for consultation purposes, including communications and analysis in connection with the Project. We will not disclose your personal information to third parties unless authorised by law and if we include your submissions in any public report we will not identify you. Providing your personal information is voluntary but if you do not provide it we may not include you on our stakeholder database and you might miss further consultation opportunities. Your personal information will be held by us and you can contact us to access or correct it. Please write to us at either whtbl@transport.nsw.gov.au or Transport for NSW, Locked Bag 928, North Sydney NSW 2059.