

## ROADS & TRANSPORT

### Our company

Zephyr Environmental (Zephyr), is a boutique environmental consulting practice specialising in air quality and carbon management. We aim to form enduring and trust-based relationships with our clients to help them solve their most challenging environmental problems.

Our decentralised and agile structure enables us to handle the most complex assignments while remaining small enough to prioritise excellence in delivery while minimising business disruption for our clients. Our value lies in de-risking projects and providing trusted expert advice.

Our core value is 'We are a breath of fresh air, to our clients and our people.' This is more than just a tagline; we strive to ensure that our clients have a significantly different, positive experience when working with us.



**We strive to deliver practical, defensible advice that de-risks operations to ensure good environmental outcomes.**

### Services we provide:



Meteorological modelling



Air quality monitoring programs



Odour & dust management



Regional airshed management



Environmental & GHG audit / assurance



Air emissions management



Carbon mitigation & management



Data analysis & interpretation



Atmospheric dispersion modelling



# Flagship Roads and Transport Projects

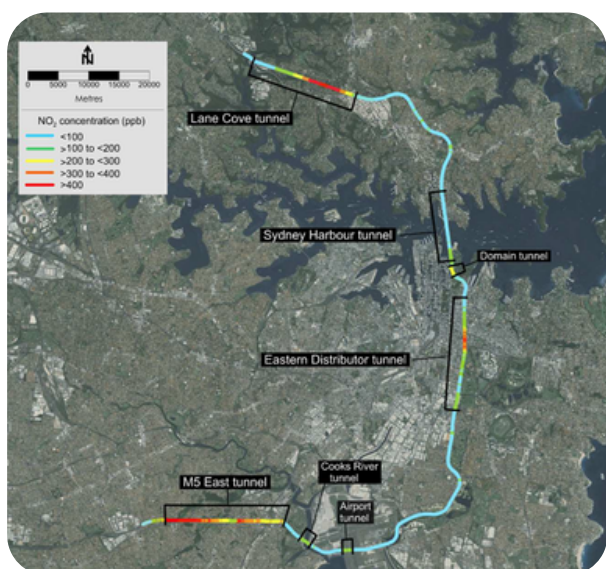


## New Road Tunnel Ventilation Optimisation in a Major Urban Centre

We assessed the air quality impacts of all major new road tunnels within a large state-led infrastructure program. The work included iterative optimisation of tunnel ventilation design using road- and portal-specific modelling software across thousands of road links. We delivered numerous presentations to regulators and stakeholders, and participated in community forums to explain the methodology and results. Our involvement also included designing, procuring and maintaining a network of regulatory-grade ambient air quality monitoring stations.

## In-Vehicle Nitrogen Dioxide Concentrations in Tunnels

We investigated NO<sub>2</sub> exposure for vehicle occupants travelling through major and minor tunnels and busy surface roads. Using high-resolution direct-measurement instruments inside and outside nine vehicle types, we evaluated how vehicle age, design and ventilation settings influenced exposure. Findings showed that in-vehicle concentrations were consistently lower than external levels in major tunnels, particularly when cabin recirculation was enabled. Results informed future tunnel design and user safety measures.



## Public Transport Climate Risk Assessment

We completed a climate risk assessment for new major public transport infrastructure, engaging key stakeholders through workshops and consultations. The assessment followed a standard methodology involving hazard identification, vulnerability analysis, exposure assessment, impact and risk evaluation, and adaptation and mitigation planning.

If these case studies — or any of the other services we offer — sound like they could add value, please don't hesitate to reach out. Our team is always ready to discuss your goals, answer any questions, and explore how we can best support your success.

Get in touch with our team at:



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Zephyr Environmental



[www.zephyrenviro.com](http://www.zephyrenviro.com)