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SMEDTECH
TECHNICAL & STRATEGIC

NORTH EAST LINK - TRAFFIC

Client: VIDA Roads (part of the Victorian Infrastructure Delivery Authority, formerly NELP)

Location: VIC, Australia

Project value: $26 billion

Contract form: Public-Private Partnership (PPP) and Alliance

Project lifecycle stage: Development, Procurement and Delivery

Duration: 2017 – ongoing

At a glance: North East Link is Victoria's largest ever road project. It is a mixture of an availability-based PPP under the Partnerships Victoria framework and a range of collaborative contracts with a total budget in excess of $ 26 billion.

The project:

- Completes Melbourne's orbital road network by connecting the Eastern Freeway to the M80 Ring Road, featuring twin tunnels and new interchanges at key arterial roads.
- Includes major upgrades to the Eastern Freeway, introducing express lanes and collector-distributor roads to ease current bottlenecks and accommodate future traffic demand.
- Includes enhancements to the M80 Ring Road, adding capacity and delivering a free-flow interchange with North East Link and the Greensborough Bypass.

As part of the works, North East Link, the Eastern Freeway, and the M80 Ring Road will become fully integrated smart motorways, with ramp metering, lane-use management, and vehicle detection systems to improve safety and efficiency.

Objectives

The Victorian Government set out to deliver the missing link between the Eastern Freeway and the M80 Ring Road to reduce congestion and freight traffic on local roads. The States largest ever road project initiative, the North East Link Project (NELP), was procured across a number of separate works packages which range from a collaborative PPP to Alliance contract models, across both greenfield and brownfield assets.

The State required high quality, timely and reliable traffic and transport support throughout various stages of the project.

Our services

SmedTech was engaged by NELP at the project's inception in January 2017 and has provided ongoing technical support and strategic direction throughout the project's lifecycle. This includes leading the traffic and transport component of the project which involved deep integration with the civil design team to optimise the design layout, detailed microsimulation modelling and overseeing the strategic transport modelling team to shape the project's success.

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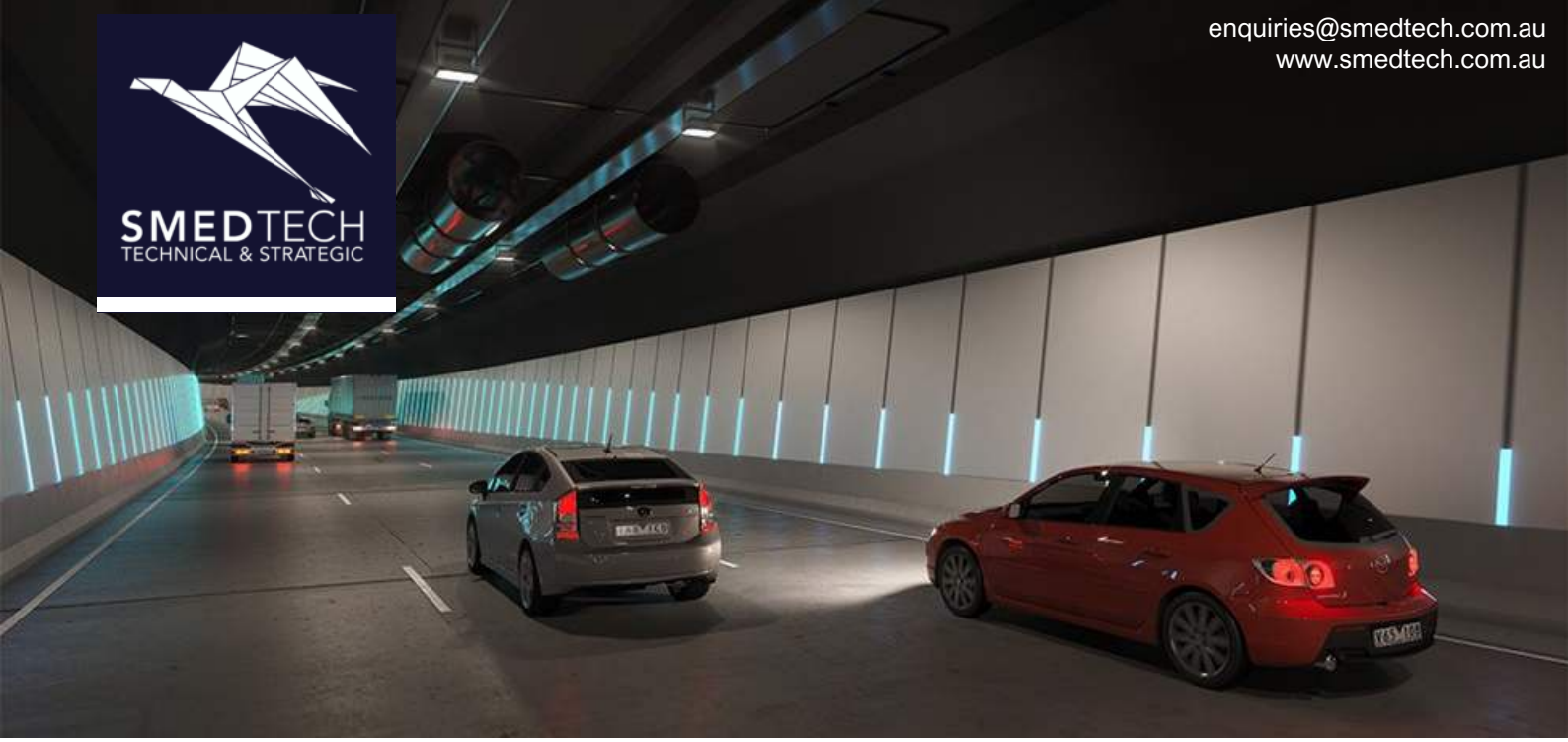

In this role, we:

- Conducted a needs assessment of the project to identify existing issues and identify constraints on the road network and quantify the impact on road users.
- Designed and oversaw a major traffic and transport data collection program to support the needs assessment, establish traffic trends, inform microsimulation modelling, and define design traffic volumes.
- Undertook a corridor assessment to evaluate potential route options, quantify benefits of each option, and recommended the preferred corridor based on traffic performance and network efficiency.
- Led the development of the Reference Design to determine the freeway lane arrangements, interchange locations and layouts and the adjacent intersection layouts. Multiple options were tested along the corridor using a microsimulation model to determine the optimal layout configuration for traffic flow and safety.
- Oversaw the strategic modelling for the project including reviewing the model coding and outputs, coordinated model runs and ensured integration with the traffic and revenue teams.
- Led the development of the tolling policy and toll pricing structure, feeding into the development of patronage forecasts and informing the resultant final design solution.
- Delivered detailed transport assessments for both the Business Case and Environment Effects Statement (EES) on the benefits and impacts of NEL on the transportation network.
- Supported the State during the EES process, including extensive consultation with Councils, stakeholders, and the community; presented to the EES Panel; and provided expert evidence under cross examination.
- Represented the State during tender phases by attending the interactive tender workshops, responding to tenderer queries, identifying technical risks in proposals, and recommending mitigation strategies.
- Led traffic reviews during tender evaluation for all five project packages, including independent testing of tenderer designs within the State's microsimulation model to verify performance and support negotiations where issues were identified.
- Post award, we worked closely with alliance teams to refine designs, test alternative solutions, and support scope optimisation.
- Acted as one of the few technical advisors across all construction packages, maintaining a project wide perspective to ensure design changes in one package did not adversely affect others, and worked collaboratively to resolve issues where identified.
- Performed comprehensive reviews of the Worksite Traffic Management Plans (WTMPs) for all five project packages. This included assessment of traffic impacts for each construction stage, review of traffic models, undertaking operational modelling to test alternative scenarios, and developing mitigation measures collaboratively with each package with the goal of minimising construction impacts on the surrounding road network.

Our impact

SmedTech's ongoing engagement on the NEL Project as a leader in traffic and transport component has ensured that Reference Design meets the needs of the transport network while minimising footprint and disruption. We have supported the State with accurate and timely strategic advice throughout the full lifecycle of NEL.