# Transport

## Resilient transport infrastructure is not only at the heart of economic development, it safely connects communities...locally, nationally, globally.

**Tonkin + Taylor's Transport team provides customised design, planning, and construction solutions for ambitious and complex transportation infrastructure projects.**

Tonkin+Taylor

CHADWICK GEOTECHNICS

# About us

**Tonkin + Taylor** combines technical expertise in geotechnical, environmental, and pavement engineering with extensive knowledge of geological and subgrade conditions to offer a comprehensive range of specialist transportation infrastructure services that support economic, social, and environmental sustainability.

Whether it's a new proposal, reconfiguration, or rehabilitation project, our ability to integrate innovation within constructability has been at the forefront of some of Australia's most influential transportation developments. Including advising governmental agencies on initiatives such as Austroads, a comprehensive guide to inform the safety in design, construction, maintenance, and operation of roading transport systems.

We understand that sound investment in transport infrastructure is pivotal for functionality and progress, and work in collaboration with clients, partners, and contractors to ensure specifications are met throughout the entire life cycle of transportation projects. Our team are also exceptional problem solvers and, backed with the latest advancements in science and technology, can navigate any challenges that arise along the way.

From bridges, highways, and accessways that keep roading, rail, and pedestrian networks moving forward; to airport runways, berthing structures, and intermodal terminals that streamline air and waterways. We have an extensive and proven track record in developing and transforming infrastructure across all modes of transportation.

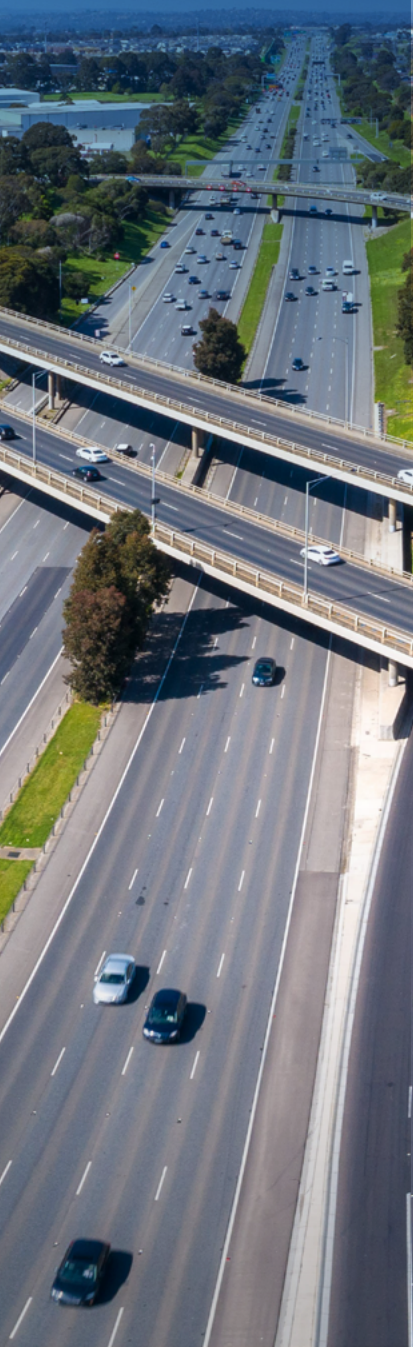
## Our Services

- Feasibility studies
- Geotechnical engineering
- Pavement engineering
- Air quality
- Contaminated land
- Noise/vibration monitoring and assessments
- Sustainability
- Environmental engineering
- Forensic investigations
- Expert witness, challenge
- Tunnelling
- GIS
- Business case development
- Peer review
- Infrastructure resilience

*Tonkin + Taylor acknowledges the First Nations peoples of Australia as Traditional Custodians of the land and waterways on which we work and live, and recognise their continuing connection to land, water, and culture.*

*We pay our respects to their Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples.*

# Track record



## MRPV Roads Projects, VIC

Provided geotechnical and pavement design expertise to the principal Contractor and lead Civil Consultant for the below projects varying in contract size between $40m to $250m:

- Hall Road West Upgrade
- Narre Warren North Road Upgrade
- Narre Warren Cranbourne Road Upgrade
- Barwon Heads Road Upgrade (WP1) (including instrumentation services)
- Hallam Road North Upgrade
- Healesville Koo Wee Rup Road Upgrade
- Ison Road Overpass
- Mickleham Road Stage 1 Upgrade

**Technical Response**

- Site investigations
- Foundation design including for overpass
- Earthwork cut and fill design
- Settlement and consolidation analysis
- Design of retaining walls
- Utility Impact Assessment
- Design and rehabilitation of pavements
- Construction support

## New Bridgewater Bridge, TAS

The largest transportation infrastructure project in Tasmania's history involves a proposed new 1.23km long bridge over the River Derwent, new road inter-changes, an underpass, a new single span overpass, and associated road infrastructure.

**Technical Response**

- Site investigations
- Foundation design for the main bridge
- Seismic and liquefaction assessment
- Retaining walls design
- Earthwork cut and fill design
- Scour assessment
- Foundation design for underpass/overpass
- Reinforced soil structure wall design
- Land reclamation design
- Construction support

## North-East Link, VIC

Development to link Melbourne's Eastern Freeway in the south with the M80 Ring Road in the North. Comprised two packages: primary package consisted of tunnelling, portals, and entry trenches that connect the two freeways; secondary package encompassed upgrades to the M80 and Eastern Freeway. Ground conditions included soft soils, a deep river crossing, uncontrolled fill, and variably weathered and folded Silurian bedrock with weathered intrusive dykes.

**Technical Response**

- Ground characterisation
- Geological modelling
- Geotechnical parameter assessment
- Contaminated land assessment and advice
- Hydrogeological assessment and modelling

## Corio Quay Geelong Upgrade, VIC

Construction and upgrade works for new Spirit of Tasmania Terminal at Corio Quay Geelong including DoT intersection upgrade works, heavy and light vehicle staging areas, and internal roadways to cater for light vehicles, buses, freight vehicles and terminal tractors.

**Technical Response**

- Geotechnical + pavement investigations
- Environmental investigations
- New pavement design
- Pavement rehabilitation
- Geotechnical design
- Environmental advice
- Construction support

## The Melbourne Metro, VIC

New underground rail route with five new underground stations. The route will be integrated with the existing rail networks by tunnel decline structures at both ends of the Metro tunnel. Includes upgrades to overhead electrification, ancillary structures, new road and rail bridges, and modification to existing bridges.

**Technical Response**

- Design calculations, numerical modelling, drawings:
  - Cut and cover decline
  - Overhead Line Equipment (OHLE) foundation
  - Road/rail bridges, various structures/buildings
  - Post and panel retaining wall
- Design compliance
- Risk mitigation

## Mordialloc Freeway, VIC

The Mordialloc Freeway project is a 9km freeway link between Dingley Bypass and the Thames Promenade, including several grade-separated interchanges, bridges over wetlands and Mordialloc Creek, and a parallel cycling/walking path along its length. The route crosses extensive areas of soft ground and historical landfill areas.

**Technical Response**

- Ground improvement solutions
- Foundation solutions
- Detailed environmental investigations
- Minimise impacts of landfill gas migration
- Environmental monitoring and reporting

## SCA Aerospace Pavement Design, QLD

SMEC Australia Pty were engaged to undertake the design of Aerospace Precinct Stage 1B at the Sunshine Coast Airport. T+T sub-contracted to prepare field investigations, design new taxiway and apron pavements for Code A, B and C aircraft, together with preparation of a technical specification for construction.

**Technical Response**

- Investigations
- Taxiway/apron pavement design
- Pavement design of service road/parking bays

### Maribyrnong River Bridge Tender Phase Services, VIC

New dual track rail bridge over the Maribyrnong River and associated valley adjacent to the existing historic rail viaduct. The proposed new bridge is part of the Melbourne Airport Link, which would provide heavy rail services between the CBD and the airport. Engaged by McConnell Dowell.

**Technical Response**

- Geological & Geotechnical interpretation
- Geotechnical Design for both permanent and temporary works (bridge foundations, retaining walls, excavations near existing structures)
- Contaminated land data interpretation and advice

### Western Roads Upgrade, VIC

A $1.8 billion investment to improve roads in Melbourne's western suburbs, including a 20-year maintenance contract. Project is being delivered through a Public Private Partnership (PPP). Key (re)developments include: lane duplication and widening, intersection upgrade and resurfacing, bridge and culvert strengthening and widening, new and rehabilitation pavement design.

**Technical Response**

- Construction supervision and Quality Assurance
- RFI support for pavement engineering
- Pavement rehabilitation design
- Retaining wall assessment
- Geotechnical hazard assessment

### Avon River Rail Bridge Replacement, VIC

Part of Gippsland Line Upgrade, a new 18 span/28 m long bridge was constructed to replace the preceding load-restricted bridge. Scope included: bridge foundations, new embankment and tie-in to existing embankment, transition between bridges/ structures and embankments, retaining walls, and earthworks.

**Technical Response**

- Geological and geotechnical interpretation
- Development of detailed design
- Independent review of design deliverables
- Scour depth assessment
- Protection options and Flood Relief Structures
- Assessment of liquefaction potential

### Webb Dock Upgrade, Port of Melbourne, VIC

Upgrade of Australia's busiest roll-on/ roll-off terminal. Rehabilitation works and construction of new pavement areas. The technical challenges were extensive and included a variety of subgrade conditions and pavement types.

**Technical Response**

- Geotechnical investigations
- Data analysis
- Detailed pavement design
- Value engineering
- Environmental engineering
- Peer review of pavement works
- Optimisation of proposed pavement design(s)

### South Gippsland Highway "Black Spur" Re-alignment, VIC

Realignment of the South Gippsland Highway between Koonawarra and Meeniyan. The core objective is to remove nine sharp corners and a dangerous segment of road to make travel safer and easier. Works include: building two new bridges over the Tarwin River, building an underpass to realign the Great Southern Rail Trail, closing off access to the old section of highway, and installation of safety barriers.

**Technical Response**

- Geotechnical design, including two bridges, a number of structures, retaining walls
- Scour assessment
- Earthworks, including large rock cuts
- Environmental impact assessments

### Port of Brisbane Peer Review, QLD

Conducted a review of the proposed pavement designs for heavy-duty pavements at multiple berthing sites, including rigid and flexible pavement options. Pavements were subject to varying and repetitive loadings, such as highway and long-haul vehicles, heavy forklifts, and straddle carriers used to transport a mix of 20-foot and 40-foot containers.

**Technical Response**

- Detailed peer review of designs
- Provided design solutions
- Identified deficiencies in the calculated traffic loadings and proposed pavements

### MA Third Runway - Design Review, VIC

Engaged by Exner Group to review and challenge the design and delivery in relation to pavements and earthworks for the third runway at Melbourne Airport.

**Technical Response**

- Review of design and delivery of pavements (specifically material specifications, slip form paving specification, testing regimes)
- Earthworks (specifically approach to airside earthworks, material/placement specifications, testing regime, settlement)

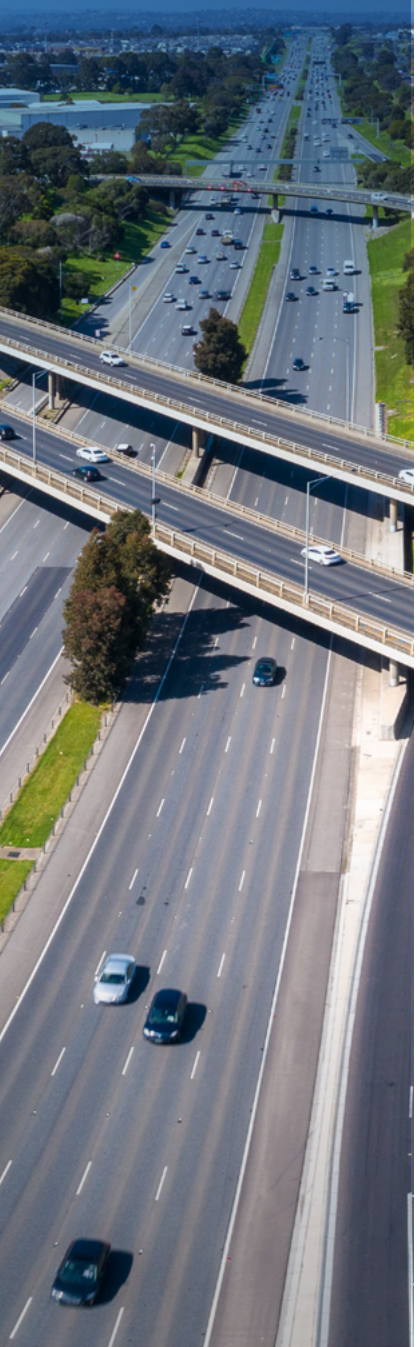
### Suburban Rail Loop - Sustainability, VIC

Sustainability Leads, and integral part of the bidding teams, for the SRL tender.

**Technical Response**

- Developed sustainability strategy for the tender, design and construction phases to attain contractual outcomes including ISC rating
- Workshops – ISC and Sustainability '101', climate change risk assessment, carbon and materials reduction, circular economy
- Risks and options assessment
- ISC Materiality assessment and ISC Rating pathway
- Stakeholder engagement including Ecologiq

# How can we help you?



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