



# Constructability capability



# About us.



## Who is TSA Advisory?

TSA Advisory is a team of 160+ infrastructure advisors. We bring together strategic, technical and commercial expertise to advise our clients on complex infrastructure.

Our expertise is specialist and deep, and introduced at key points in a project's lifecycle to help clients develop, fund, transact, deliver and optimise critical infrastructure.

TSA Management formed in 2001 with a focus on providing clients the full suite of project management services.

Recognising a growing client need for specialist expertise within a complex and heavily regulated industry, we acquired Calcutta Group in 2019 and Advisian CPA in 2021.

The strategic acquisitions of these specialist infrastructure advisory firms acted as the catalyst for the creation of TSA Advisory: TSA's specialist advisory business line. Today, TSA Advisory works with clients globally to generate targeted solutions to complicated infrastructure.



# Our Services

TSA Advisory provides constructability advice for complex infrastructure projects. Our advice is founded on deep, hands-on experience delivering the kinds of projects we advise on. This helps us provide advice that factors in the real-world factors that can impact projects.

Our constructability service works hand-in-hand with our other front-end infrastructure advisory services. This gives clients a holistic approach to delivering infrastructure that operates as intended, on-time and on-budget.

We have extensive experience in road and rail projects, and also more specialist areas including water, energy, utilities, and buildings.

## Constructability

TSA's development of construction methodologies is based on reference design solutions to consider buildability and practicalities on both greenfield and brownfield sites. Our review of design concepts includes value engineering and design optioneering.

## Planning and cost estimation

Preliminary cost planning including design options and alternatives. We also provide project scheduling /planning, including identification of key resource constraints.

## Strategy

Development of opportunity and risk management strategies including suggested procurement strategies and packaging of works.

## Planning and approvals

Advice on land acquisition for site establishments and laydown areas to identify and fix project footprints for preparation of project EES approvals.

## Construction staging

Construction staging advice, including traffic management and rail occupations.

## Interface management

Interface management and support for key stakeholders including councils, utility authorities, community groups and other stakeholders.

## Industry constraints assessment

Understanding of market capacity and capabilities in both design and construction phases, including suppliers and subcontractors.



**People.**



# Specialists.

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## **Peter Skene** Managing Principal

Peter has over 30 years' experience in engineering, design and construction. This has been predominantly in operational roles as Project Manager / Alliance Manager for large infrastructure projects for Tier 1 Contractors. He also has a strong technical background having undertaken design management / interface roles, and provided constructability inputs for several complex projects. These include Southern Cross Station Redevelopment, Gorgon Jetty and most recently North East Link.

Peter's extensive project management experience has provided him with insight into all elements of construction: safety, stakeholder management, cost control, industrial relations, and client / community expectations on complex brownfield sites. His experience spans several disciplines comprising civil works, concrete, and structural steel erection on a variety of heavy engineering projects including road, rail, water, power stations and marine works.



## **Dave McCann** General Manager Infrastructure Victoria

David has over 30 years in the construction industry. He has extensive civil construction sector experience in road, rail, airports and mixed discipline sectors. His experience covers delivery, design and client-side roles.

David has a passion for engaging teams and getting people to work together as one. One of his biggest strengths is his ability to assess situations and provide strategic and well thought out solutions. He combines this with active listening and communication skills to bring balance to tricky situations.

David has used his construction, design and risk knowledge to help clients on projects such as Rockhampton Ring Road, Surburan Roads Upgrade (Vic), Tasman Bridge ITS, Melbourne Airport Rail Link and various station upgrades for VicTrack.

# Specialists.

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## **Phil Basile** Principal

Phil is a cost estimating leader with over 30 years' experience in delivery, procurement and project management of complex infrastructure projects. He has held senior management roles on building, rail, airport, marine and roadwork projects in Australia and Hong Kong.

Phil leads the Melbourne cost estimating team, providing cost advice to various clients including Major Transport Infrastructure Authority, North East Link Program, Level Crossing Removal Project, Suburban Rail Loop Authority and Rail Projects Victoria.



## **Jeremy Rae** Principal

Jeremy has over 30 years' experience in the engineering and construction industry. He is deeply experienced in solving complex issues to manage the successful delivery of mega projects.

One of his key skills is being able to understand the outcomes sought by the client, then testing and challenging any assumptions, and identifying the critical success factors. This ensures that the project is delivered in accordance with its objectives.

He has applied his skills and experience to senior management roles on significant infrastructure projects including Level Crossing Removal Programme, Regional Rail Link, Eastlink and Peninsula Link. He's helped enable innovative approaches to procurement and constructability, scoping of projects, and alternative methods of delivery.

# Specialists.

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## **Robert Pitton** Principal

Robert has over 30 years' experience in the delivery of services over the full project life cycle in the road, rails and water sectors. His extensive management experience in senior operational and director roles has provided him with insight into all elements of construction. This includes an understanding of planning, technical and stakeholder management, project control on complex brownfield sites, and various forms of collaborative contracting models.

Rob's constructability advice is founded on his hands-on delivery and operations experience. He held Project, Program and Operations Manager roles on projects such as Murrumbidgee Irrigation Area Renewal Alliance, Bondi Sewage Treatment Plant Upgrade, Sewerfix Wet Weather Alliance and Western Sydney Replacement Flows Design, Build, Operate and Maintain JV.

# Our Approach

Our approach to providing constructability advice commences during concept development. For the most effective result, we are embedded as part of the client team working closely with the engineering technical advisor to ensure a buildable solution is developed. This ensures time and money is not spent on pursuing unworkable solutions.

Our offering extends to working closely with the procurement team to ensure that work packages and associated interfaces do not cause significant risk profiles for clients to manage. Working closely with our cost estimating team also enables us to rapidly identify optimal solutions.

Once an RFP goes to market, clients must have surety that a concept/reference design can be built. Impacts on local businesses, residents and commuters (on transport infrastructure projects) are identified and solutions to key challenges provided.



# Projects.



## North East Link Project

**Client** North East Link Project

**Role** Constructability, cost estimating, procurement, contract management, and risk management

**Value** AU\$16 billion

North East Link (NEL) is the biggest road transport project in Victoria's history, at \$16 billion. It joins the Eastern Freeway to the Greensborough Bypass. It is expected that 135,000 vehicles will use North East Link every day, reducing congestion in the north-east while maintaining local roads for local trips.

Drawing on our strategic, technical, commercial and delivery expertise, we have worked closely with the project team and its key advisers to ensure a comprehensive corridor options assessment, business case and reference design development.

Working collaboratively with the North East Link project team, TSA Advisory has contributed to:

- Maximising value for money for the State and the community by design optimisation: shaping the project design by assessing the constructability of proposed solutions and addressing critical risks.
- TSA also provided procurement and contract management support to ensure cost-effective project development.
- Development of cost estimates, derived from first principles, to support the business case.
- Revisions to the cost estimate in the approved business case, as needed to reflect or support refinements and changes to the design.
- Planning and development of processes, people and systems associated with the needs of the rapidly growing organisation.

TSA Advisory worked with the project team closely, yet independently. This resulted in the provision of a constructability report to support the business case that was well received by NELP.

# Projects.

## Esperance Port Access Corridor

**Client** Main Roads WA - Main Roads Infrastructure Delivery Directorate

**Role** Constructability reviews, estimating, procurement, business case, contract services

**Value** AU\$120 million

The Esperance Port Access Corridor project involved design and construction on new upgraded rail and road access into Esperance Port. Works included a rail tunnel, rail (dual track) corridor, realignment and widening of Harbour Road, John Street Bridge over rail line, Twilight Beach Road Bridge over rail and Harbour Road, associated roadworks, pedestrian underpass under rail and Harbour Road, service relocations and temporary works including road deviations.

TSA prepared multiple first principle estimates with P50 and P90 contingencies for various design options in accordance with the BPCES. To prepare the first principal estimates, TSA participated in risk workshops, prepared detailed programs for designing and constructing the works, and reviewed the constructability of the project. TSA supported Main Roads in preparing a business case for the project, and tender and contract documents including pricing schedules. On completion of the works TSA undertook an assessment of quantum and extension of time claim submitted by the contractor in relation to rail tunnel. This claim was due to the rail operator changing design envelope requirements for the rail tunnel after award of the D&C contract.



# Projects.

## Nowra Bridge

**Client** Roads and Maritime Services

**Role** Constructability and programming advice, procurement and transaction, management, commercial advice, SWTC and RFT document production, CEMP and addendum REF, flooding and hydraulic modelling

**Value** AU\$180 million

Roads and Maritime Services is proposing to construct a new bridge on the A1 Princes Highway over the Shoalhaven River at Nowra. It includes a new four lane bridge to the upstream of the existing bridge crossings, the removal of vehicular traffic from the existing southbound bridge, and upgrade of 1.6 kilometres of the Princes Highway.

TSA provided constructability and programming advice and prepared the Construction Environmental Management Plan and its sub-plans.



## Station Pier Redevelopment

**Client** Victorian Ports Corporation Melbourne

**Role** Constructability advisory, Project management

**Value** AU\$ 35 million

The Victorian Ports Corporation Melbourne (VPCM) is planning an upgrade to Station Pier to accommodate new TT-Line ferries.

TSA completed an assessment of the construction schedule and timing impacts for the TT-Line Initial Works associated with the Station Pier Redevelopment Project. This involved an assessment of construction staging requirements, and construction methodology and programming, including analysis of the critical path.



## Melbourne Metro Tunnel Project

**Client** Melbourne Metro Rail Authority (MMRA) now known as Rail Projects Victoria (RPV)

**Role** Independent constructability advisory, business case development, Deputy Director secondment, peer review

**Value** AU\$11 billion

The Metro Tunnel project is the critical enabler of a metro style rail system in Melbourne, set to resolve decreasing access to jobs and services, a poorly performing and congested transport system, and declining productivity growth. This pivotal, city-shaping transport and land-use initiative will be Victoria's largest rail investment, with an estimated value of more than \$11 billion.

TSA Advisory (formerly Advisian CPA) combined our strategic, technical, commercial and delivery nous to work closely with the initial client project team and its technical advisors to prepare the comprehensive options assessment and initial business case. The blending of our team's strategic transport, business case, risk, technical rail, constructability and commercial skills proved crucial to the simplification of a complex and interdependent options assessment and the robustness of the first business case. Our consultants led the original decision-based options framework that separated the alignment and station location decisions in each segment. This approach significantly resolved the complexity, analytical effort and interdependence of options and contributed to the robustness of the preferred option.

Our team was the independent constructability advisor, embedded within MMRA. We also prepared a detailed risk-adjusted construction programs for each component of the project, a critical input to the overall delivery strategy.



# Projects.

## Regional Rail Revival

**Client** Rail Projects Victoria (RPV)

**Role** Constructability advisory, staging and scheduling of works, temporary and permanent project areas, risk management, commissioning strategies, occupation planning, management support and readiness, cost estimating

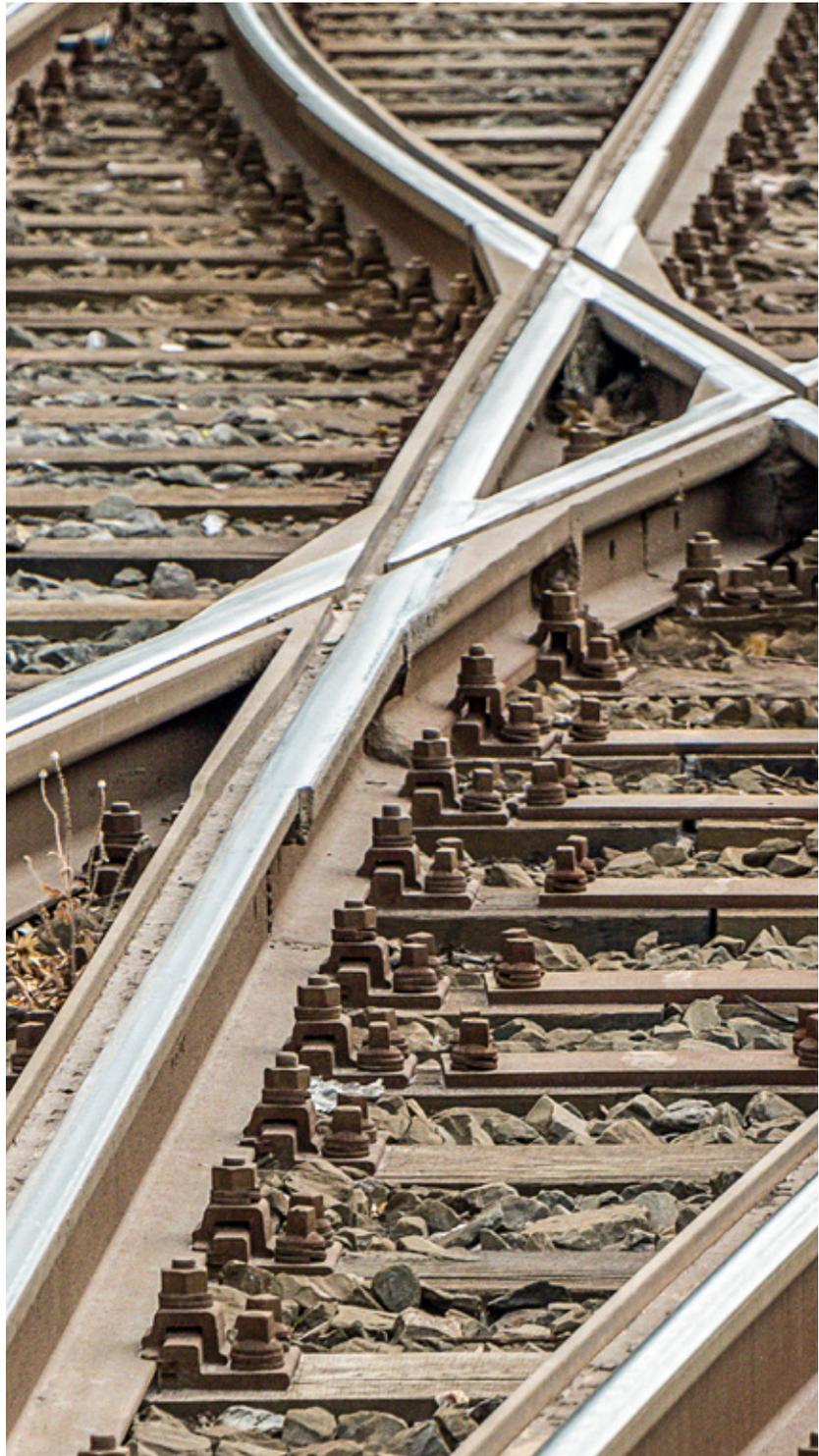
**Value** AU\$1.75 billion

TSA Advisory (formerly Advisian CPA) provided constructability, technical support and cost estimating for eight projects as part of the RRR program.

TSA provided personnel with the specific expertise and knowledge required to guide the client in choosing alternatives for delivery, design options, equipment and construction methodology. TSA's advice covered many of the projects within the program of works. These included:

- Avon River Bridge
- Gippsland Line Upgrade
- Warrnambool Line Upgrade
- Murray Basin Rail Project
- Geelong Duplication
- Shepparton Line Upgrade
- North-East Line Upgrade
- Bendigo Metro

TSA's work with RPV allowed them sufficient technical support for funding approvals, tender documentation, reference designs and commercial / stakeholder approach. This enabled a consolidated planning turn over and development phase.



# Projects.

## Nelligen Bridge

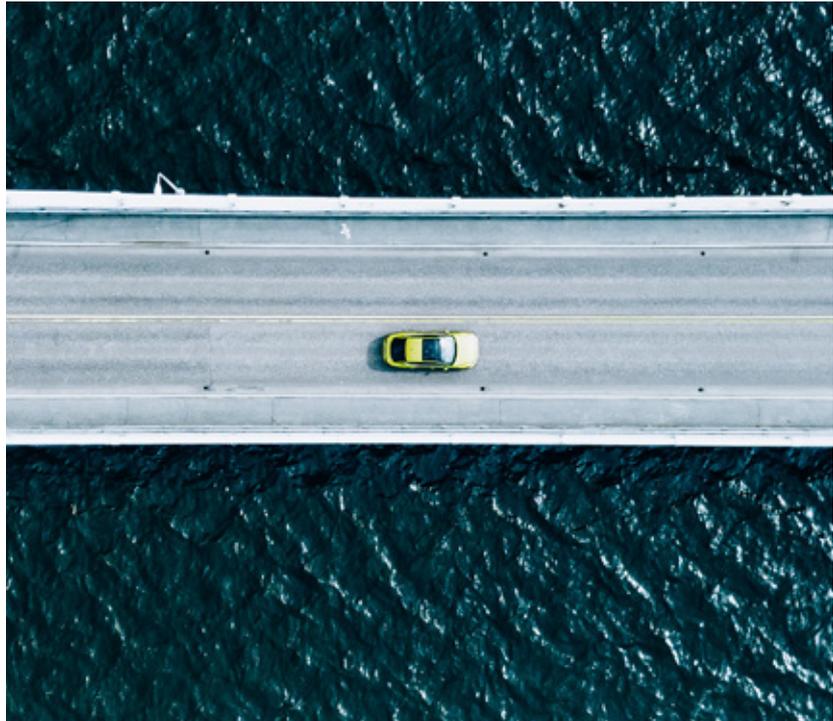
**Client** Roads and Maritime Services

**Role** Constructability, independent safety in design, risk assesment advisory

**Value** AU\$200 million

The New South Wales Government is planning to remove a current crossing over the Clyde River and replace it with a new one.

Following feedback from the shortlisted tenderers for the project Roads and Maritime Services (RMS) undertook a redesign of key bridge elements. RMS engaged TSA Advisory (formerly Advisian CPA) to provide independent constructability commentary to both RMS and the contractors and review proposed design documentation to provide constructability input and risk review prior to the issue of tender documentation.



## WestConnex M4 East

**Client** WestConnex Delivery Authority

**Role** Constructability advisory, procurement and transaction mangement, SWTC documentation production, risk management, project delivery support

**Value** AU\$3.8 billion

The WestConnex Delivery Authority (WDA) was tasked with awarding the \$2.7 billion contract for the design and construction of Sydney's M4 East Motorway.

TSA Advisory (formerly Advisian CPA) played a key role, supporting WDA to assess and evaluate offers, and decide on the successful contractor. We provided a broad range of services to help WDA, including constructability advice. Our team's deep expertise has been singled out by WDA as a key contributor to the achievement of a successful outcome.



## Level Crossing Removal Project

**Client** Level Crossing Removal Project (LXRP)

**Role** Cost engineering, engineering management and systems, engineering systems project controls, project management framework, business case, strategic transport advisory

**Value** AU\$10 million

The Level Crossing Removal Project involves the removal of Melbourne's most congested and dangerous level crossings to deliver significant safety improvements and reduced congestion for communities right across Victoria.

On the Frankston line crossing removals, we managed the delivery of constructability reports to a high standard, working to tight timeframes. This included running constructability workshops with designers and critical stakeholders such as Metro Trains Melbourne and Public Transport Victoria. In these workshops we considered impacts on commuters, traffic flow, train operations, utilities, the community and the environment.

As Independent Estimator we have either developed or independently reviewed cost estimates for all business cases prepared by VicRoads and LXRP. The services we have provided include, independent estimation on alliance projects, preparation of strategic cost estimates and detailed "first principles" cost estimates, review of various estimates (concept) prepared by the Technical Advisor, preparation of construction methodology reports for future projects, ad hoc support for Project Directors / Project Teams in cost planning for optioneering, and variation assessment and provision of cost benchmarking database and cost benchmarking support services.

For the Frankston line crossings, we identified and considered what lead-up occupations would be required and occupations that could be accelerated to reduce the main occupation duration. The occupations assessment included workshoping, analysing, documenting and reporting on the associated \$2.4b of infrastructure in 9 weeks.

# Projects.

## Clyde Road Upgrade Project

**Client** Major Road Projects Victoria

**Role** Constructability assessment and advisory

**Value** AU\$1.75 billion

MRPV engaged TSA to provide detailed advice and prepare a constructability assessment report for this road upgrade project in the southeast suburbs of Melbourne. The project includes road widening, intersection upgrades, utility relocations, general civil works, and strengthening and widening to an existing bridge over the Monash Freeway.

The team worked closely with MRPV to explore construction staging options, prepare a draft construction programme, assess resourcing requirements, understand local stakeholder impacts and highlight key risks and potential mitigation strategies. Specific focus and attention were given to some of the biggest challenges facing the project. We did this through effective collaboration, conducting site visits and assessing reports and designs provided by the team. Some of the challenges included minimising impacts to the Monash Freeway during bridge upgrade works; the timing and staging of utility relocation works; minimising traffic lane closures and disruptions to road users; and understanding local stakeholders needs.

The information provided was used by MRPV to better understand all aspects of construction prior to onboarding a construction contractor to deliver the works. It provided clarity and focus, enhancing their ability to deliver the project on time and within budget.



# Best for Project

## AUSTRALIA

SYDNEY | ADELAIDE | BRISBANE | CANBERRA | DARWIN  
MELBOURNE | NEWCASTLE | PERTH

## NEW ZEALAND

AUCKLAND | CHRISTCHURCH | TAURANGA  
WELLINGTON | QUEENSTOWN

## MALAYSIA

KUALA LUMPUR

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**TSA**  
Advisory