

Transport Infrastructure



At Cardno, every client and every project is equally important.

We have the breadth of skills and experience to assist you with every stage of your transport project.

Transport infrastructure questions can be complex. They pose questions about our economy, our government, our work practices, our priorities and our lifestyle. For those funding or building transport networks, finding the right answers can be confusing and costly. Cardno can help by finding the answers and developing solutions. Working in partnership with you, we see the big picture.

Our aim is to work collaboratively to find the best solution and build capacity over the long term. We understand the challenges faced by governments and public/private partnerships to develop and fund transportation networks.

Cardno has improved the infrastructure resources in many countries. Our commitment has been comprehensive – from bridges in Vietnam to reviewing road networks in Tajikistan.

Locally and internationally, we keep people and businesses moving. In Sydney, we're helping to solve the city's transport challenges, designing aspects of the Westlink M7 and the Lane Cove Tunnel network. Our reports informed the Queensland Government of its transport alternatives for the expansion of the Gateway Bridge and Houghton Highway. In Melbourne, Cardno designed key aspects of the landmark Bolte Bridge.

Our contribution is diverse, including:

- ▶ Roads – motorways to rural routes
- ▶ Bridges – long span structures to prefabricated systems

- ▶ Railways – permanent way, stations and crossings
- ▶ Maritime facilities – ports, wharves, marinas
- ▶ Airports – runways, terminal buildings, aircraft hangars.

For more than 50 years, Cardno has been working with councils, state, territory and federal governments, statutory authorities and private companies to plan, design and lead the delivery and management of bridges, roads, rail links, wharves, airports and tunnels through:

- ▶ Traffic engineering
- ▶ Transport planning and modelling
- ▶ Road safety audits
- ▶ Civil engineering and surveying
- ▶ Hydrology and hydraulics
- ▶ Environmental engineering, planning and management
- ▶ Structural engineering including finite element and dynamic analysis
- ▶ Construction engineering – detailed design, tender/contract documentation and multidiscipline design management
- ▶ Contract administration, claims assessment and construction monitoring
- ▶ Coastal and ocean engineering including modelling, data collection, ship simulation
- ▶ Asset management and security
- ▶ Institutional strengthening.



Gateway Bridge Duplication

Brisbane, Queensland

As part of the design team for the Leighton-Abigroup Joint Venture for the Gateway Upgrade Project, Cardno designed the 260 metre span bridge duplication that included:

- ▶ Pile design (in conjunction with the geotechnical engineer), design of the main piers and pile caps and design of the main span and side spans for construction by the balanced cantilever method
- ▶ Providing professional advice to the contractor during the construction phase.

Bolte Bridge

Melbourne, Victoria

The Bolte Bridge is a large twin Cantilever bridge, with an overall bridge length of 490 metres, four-span dual carriageway with 140 metre high Gateway Towers. Cardno worked closely with the design and construction contractor to:

- ▶ Reduce the cost of construction through innovative design
- ▶ Provide structural design and documentation
- ▶ Deliver a timely and cost efficient outcome.

Kunioon Coal Project

South Burnett district, Southern Queensland

Cardno is currently completing a traffic impact study as part of the Environmental Impact Statement for the Kunioon Coal Project in Southern Queensland. Cardno has investigated a range of traffic impacts associated with this project including:

- ▶ Additional traffic during the construction
- ▶ Changes to the local road network and connectivity due to the physical footprint of the mine
- ▶ Changes in travel route for mine workers from the existing mine to the new mine.

The Great Western Highway Upgrade

Blue Mountains, New South Wales

The Roads and Traffic Authority of New South Wales has engaged Cardno:

- ▶ To investigate the viability of a new route for the Great Western Highway between Mount Victoria and the intersection of the Great Western Highway and Castlereagh Highway at Marranagaroo, west of Lithgow through the Newnes Plateau
- ▶ To carry out a study which assesses the traffic, environmental and cost implications of the Newnes Plateau Corridor against a previously identified corridor or upgrading of the existing highway.

Tajikistan Institutional and Policy Support to the Transport Sector

Tajikistan, funded by the Asian Development Bank

Cardno assisted the Ministry of Transport to identify institutional deficiencies within the transport sector. With particular focus on the road sector, and the policy reform needed, Cardno:

- ▶ Developed and introduced guidelines to improve transport planning and road maintenance for 13,800 kilometres of road
- ▶ Improved mechanisms for financing road maintenance and for private sector participation
- ▶ Provided training workshops and prepared training manuals and implementation guidelines.

In every project with every client, we work to achieve your goals. Cardno delivers what you need, from specialist technical services to comprehensive solutions.

We have used Cardno's transport infrastructure team for the design of SH10 Pacific Highway, Tuggerah upgrading. They proved to be competent designers and provided design documents in accordance with the brief. During the project phase Cardno was always co-operative, communicated regularly and responded promptly to requests for advice.

Peter Wark, Project Services Manager – Roads & Traffic Authority Central Coast

About Cardno

Cardno is an integrated professional services provider, delivering specialist advice to create or improve the physical and social infrastructure that underpins communities around the world. Our team is comprised of leading advisors who plan, design, manage and deliver sustainable projects and programs.

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