

Karuah to Bulahdelah

Pacific Highway Upgrade



Initial Entry for 2010 Australian Construction Achievement Awards



Karuah to Bulahdelah Sections 2&3

Pacific Highway Upgrade, NSW

Initial Entry for 2010 Australian Construction Achievement Awards
by

Abigroup Contractors Pty Ltd

(ABN 40 000 201 516)

Please address all correspondence to:

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11th November 2009

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*(An electronic copy of this submission is included on the attached CD,
which also includes 300dpi files of project photographs)*

Section 1

Entry Form

2010 ACAA ENTRY FORM

We submit the following entry for consideration for the 2010 Australian Construction Achievement Award

Details of Entrant	
Name of organisation: Abigroup Contractors Pty Ltd	
Address: 924 Pacific Highway, Gordon, NSW	Postcode: 2072
Contact name: Steve Kiddle	Title: Project Director
Telephone: (02) 9499 0999	Facsimile: (02) 9499 9116
E-mail: skiddle@abigroup.com.au	
Project Details	
Project title: Karuah to Bulahdelah Sections 2&3	
Location: Pacific Highway, Karuah - Bulahdelah, NSW	
<p>Summary of scope of work (maximum of 50 words please):</p> <p>This challenging project involved the construction of 23km of separated dual carriageway fundamentally along its existing alignment, including new intersections, two new rest areas and a total of seven twin-bridges over various creek crossings.</p> <p>Our Design, Construct & Maintain contract with the RTA incorporates a maintenance period of 10 years.</p>	
Contract value: \$257 million	Contract type: Design, Construct & Maintain
Contract period: Sept 2006 - Oct 2009 (+10 yrs maint.)	Date of substantial completion: 29th Sept 2009
Purpose of project: Upgrading the Pacific Highway to improve safety and reduce travel times	
Name of client/principal: Roads and Traffic Authority of New South Wales (RTA)	
Address: 57 Darby Street, Newcastle, NSW	Postcode: 2300
Contact name: Dick Whibley	Title: Project Manager
Telephone: (02) 4924 0366	Facsimile: (02) 4924 0291

Entry Declaration Project Details

We are duly authorised to submit this entry on behalf of the Entrant named on this form and:

- Agree to abide by the rules and conditions governing the Australian Construction Achievement Award as set out in this document, including payment of final entry fees if selected as a finalist;
- Declare that the construction of project works was the direct responsibility of the Entrant; and
- Declare that substantial completion of the project has been achieved in the 12 months prior to 30 September 2009.

Delivery

The entry form, four (4) hard copies and one (1) electronic copy of the initial entry are to accompany this form and be forwarded to:

Ms Colleen Mays
Australian Construction Achievement Award
C/-Engineers Australia
Engineering House
11 National Circuit
BARTON ACT 2600

To arrive not later than 5pm on 11 November 2009.

Entry forms should be accompanied by the initial entry fee of \$1,100 (incl GST).

Signature:

Date: 10th November 2009

Name (printed): David Walker

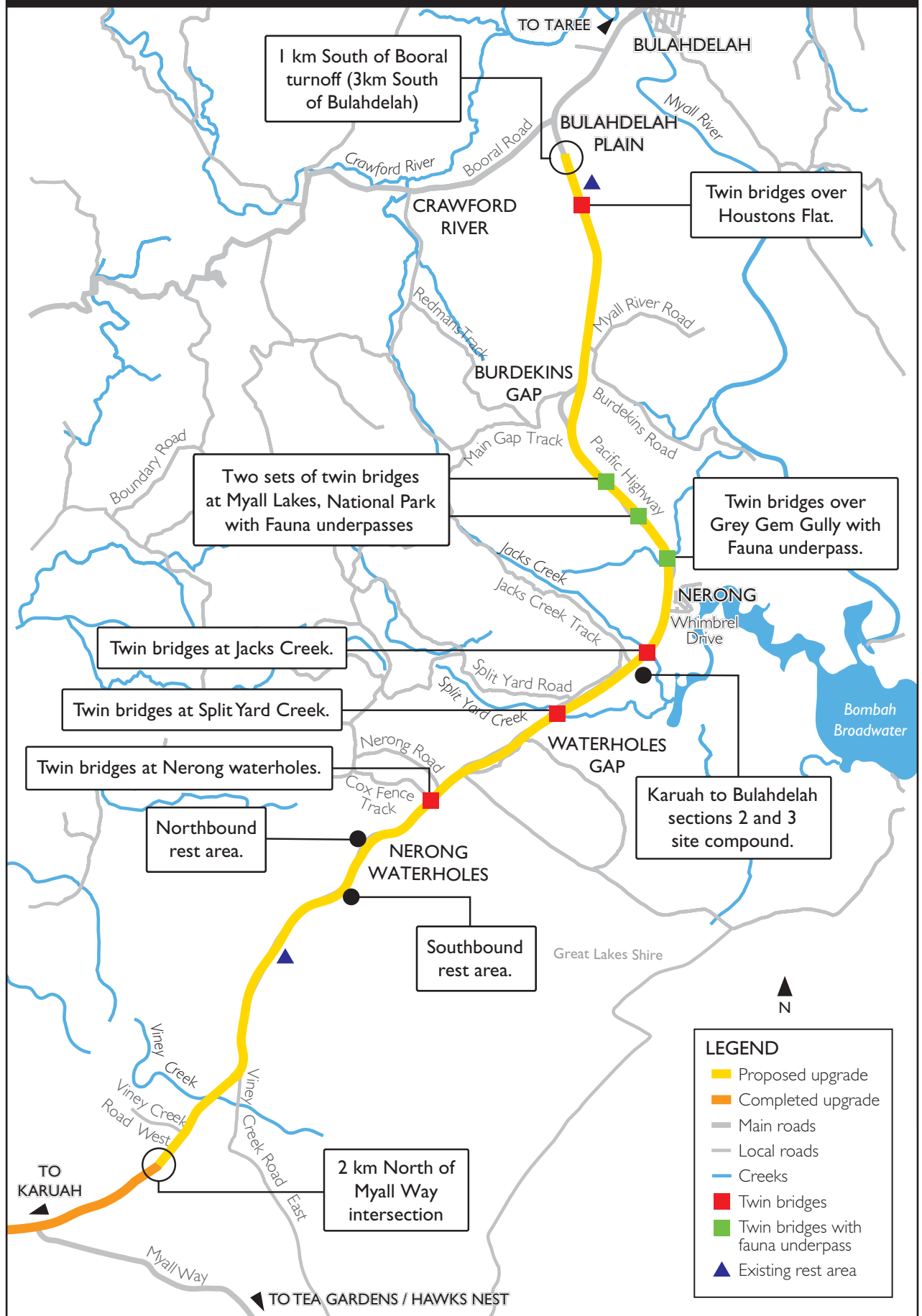
Title (Managing Director or equivalent): Finance Director & Company Secretary

Company: Abigroup Contractors Pty Ltd

Section 2

Route Map

KARUAH TO BULAHDELAH, SECTIONS 2 AND 3 ROUTE OF UPGRADE



Section 3

Evaluation Criteria

Criteria 1: Outcomes Achieved against Planned Targets for Key Project Parameters

Outcomes achieved against planned targets for key project parameters. A weighting of 40% is attributed to this category and the entrant would be expected to have met or exceeded expectations in all key result areas (KRAs) and demonstrate initiatives and achievements that have contributed to building the future of the construction industry. KRAs include safety, time, cost, quality, environment, sustainability and stakeholder satisfaction as a minimum.



The Karuah to Bulahdelah Pacific Highway Upgrade (K2B) project consistently achieved and delivered outstanding outcomes across all of the Key Result Areas (KRAs) nominated by the Roads and Traffic Authority of NSW (RTA), such as:

- Project Management;
- Time Management;
- Quality System;
- Environmental Management;
- Community Relations;
- OHS&R Management;
- Co-operative relationships; and
- Contract Administration.

The project achieved an unprecedented total of 69 “Superior” in the RTA’s tri-annual Contractor Performance Reports ratings over the 37 month period.

Programme

During the construction period a total of 46 weeks of inclement weather was experienced (37% of time lost), but with continual reprogramming and by optimising opportunities for works acceleration, progressive project milestones of staged road openings were met ahead of the client’s expectations.



The programme management capabilities demonstrated by our team enabled the project to be fully opened to traffic and substantially completed ahead of schedule on the 29th September 2009. Subsequent defect-free Practical Completion was achieved just 10 days later, on 9th October 2009.

Despite the substantial impacts of the weather and delays, the project also achieved a positive financial result with delivery under budget.

Safety

Against the safety KRA, the project consistently delivered results that reflected a workplace that genuinely cared for its employees. The project achieved 1,050,000 consecutive man hours LTI (Loss Time Injury) free.

The entire project team engaged and took responsibility for conducting random safety inspections and observations on activities to ensure safety compliance.

Activities included safely removing 950,000m³ of rock in 67 blasts completed on the project, 25 of which were in close proximity (i.e. 80m) to the local community. These blasts required the relocation of up to 80 residents from homes within 500m of the blast zone, together with full highway closures.



Quality

The project implemented the “K2B Quality Innovation” multi-faceted action plan, which included:

- Monthly Recognition Awards for Quality;
- “Think Quality” signage;
- Engineer Process Audits; and
- In-house team member training.

A strong quality culture and focus was developed amongst the entire team and as a result the project achieved a defect-free completion just seven days after opening. It has also achieved an RTA “Superior” rating for quality in six successful tri-annual reviews, leading the roadbuilding industry for the RTA.

Environment & Sustainability

The project team won the “Highly Commended” Award for Environmental Excellence at the International Erosion and Sediment Control Awards (Australasia) in Auckland. This was awarded for the management and implementation of innovative techniques and best practice in erosion and sediment control.



Key areas of innovation and best practice implemented at K2B included:

- an innovative alternative basin flocculent in managing 99 sediment basins;
- very early completion of creek channels and bridge abutments, ensuring risk mitigation at early stages of the project;
- the use of the Bedminster Compost by-product in soil conditioning;
- purchasing a hydromulching machine, enabling continual soil stabilisation;
- application of sugar cane mulch within hydromulch mixes;
- minimising clearing, allowing retention of 40 hectares of habitat; and
- erosion and sediment management in a high rainfall area of NSW.

Regular agency inspections and review of the project were carried out by the Department of Environment and Climate Change (DECC), National Parks & Wildlife (NPWS), Fisheries (DPI) as well as many other external parties, with no Environmental Penalty Notices (PINs) issued. The DECC commented on the K2B project as, “One of the best projects on the highway.”

The RTA's environmental representative described the project as, “the best large project that I have ever been involved with”.

Criteria 2: Complexity, Difficulty and Optimisation of the Construction Task

Complexity, difficulty and optimisation of the construction task. A weighting of 30% is attributed to this category and the entrant would be expected to address construction complexity (eg logistics, interfaces, constraints, community, environment, heritage) and the unique risks that had to be managed to deliver an award winning project.

The predominant construction challenges that were effectively managed in delivering this award winning project included:

- innovative construction and traffic staging;
- foundation construction;
- inclement weather and continual reprogramming;
- materials management;
- management of blasting operations; and
- environment management.



Innovative Construction and Traffic Staging

The project required construction in two stages due to the proximity of the new alignment to the existing Pacific Highway. There were several particular challenges that resulted from the staged construction and traffic interface, with the existing highway remaining fully active during construction.

Stage 1 of the project saw the construction of the southbound dual carriageway, the majority of which was located within six metres from the existing highway. Once completed, the traffic was switched from the existing highway onto the new carriageway, one lane each way, allowing for the construction of the northbound dual carriageway and completion of the project.

Along the length of the alignment, the existing and new highway overlaid each other at a number of locations, requiring strategic planning of the staging of these interface works and traffic switches. The execution of these multiple traffic switches, planned many months in advance, was seamless on each occasion.

Foundation Construction

Stage 1 foundation work was completed on 'virgin greenfield ground.' The shallow fills predominantly required removal and replacement, while the deep fills were bridged over.

There were many parts of the Stage 2 alignment that were overlying the existing Pacific Highway foundation as well as virgin ground. This had the potential to cause differential stiffness issues within the embankment layers. The project team reviewed the Stage 2 alignment and developed a foundation treatment report to cover the differing conditions experienced on site.

Strategic management of every zone of the highway's footprint ensured the clear execution and management of all foundation preparation.

Inclement Weather and Continual Reprogramming

The project experienced 46 weeks of inclement weather. The Stage 2 embankment construction was terraced into the Stage 1 embankment to ensure embankment stability and to prevent water ingress and rework.



Materials Management

The staged construction of the project was also a challenge in regard to the management of all the major cuttings and the materials management. The largest cutting contained 850,000m³ and involved a vertical height of 37m from natural surface to finished level. To meet the programme of the staged construction, strategic planning was required to ensure that these cuttings had the Stage 1 component free of material.

As it involved 2,400,000m³ of earthworks, materials management (quantity, quality, timing, placement location) was a key factor in ensuring project product, productivity, quality and sound completion. Mobile crushing plants were established at various locations, peaking at 12 crushing units on site. The project manufactured its select material, drainage rock, retaining wall backfill and large rock for the bridge abutments. With the limited footprint, crushing activities were completed in the cuttings and stockpiles.

Environmental Management

Environmental challenges for this project included the protection of Myall Lakes National Park and Myall Lakes' Ramsar Wetland, which is protected under both the Ramsar Convention (an inter-governmental treaty) and the federal government's Environment Protection and Biodiversity Conservation Act. Effective erosion and sediment control measures ensured that during wet weather periods there were no instances of pollution in any of the wetlands.



Criteria 3: Leadership and Management of the Project Delivery

Leadership and management of the project delivery. A weighting of 30% is attributed to this category and the entrant would be expected to address leadership and management aspects that have delivered a project worthy of the Award. These may include project team relationships; innovations generating a legacy for the construction industry; entrant's contribution in the design process; planning and control of design and construction operations; occupational health and safety; environment; industrial relations; project finance and project initiation; use and development of new technologies; training and development initiatives. Consideration will be given to the legacy beyond the contract obligations that have optimised the use of scarce resources and left enduring social benefits for the community.

Project Team Relationships

Experienced and technically competent personnel were in all key positions from the commencement of the project. Management continued to be decisive and in control, focusing on planning in advance and co-operative relationships to deliver the "best for project" objectives. Staff rotation developed a greater depth of experience within the team, with dividends for both Abigroup and the client.

The relationships developed between management personnel of Abigroup, the RTA and the Project Verifier (URS) were excellent at all levels. In the final Contractor Performance Report, the client noted that, "*The Abigroup management approach is one of continuous improvement, self assessment, general industry monitoring and client satisfaction.*" The team achieved these comments by conducting weekly senior management meetings, weekly QA meetings, an 'open door' policy and co-operative approach.

The team achieved 69 "Superior" ratings and 63 "Good" ratings throughout the project. This achievement is, by far, the greatest ever result achieved within Abigroup and the RTA. This team has set the standard for a 'model' project, as termed by senior management personnel within RTA.

Although the project was Design, Construct and Maintain Contract, it was often reviewed by the RTA's management as an 'Alliance' run contract due to the effectiveness of the relationships between all parties and the high levels of co-operation.

Contribution in the Design Process

The contract included the design element and this actively involved the project team. The design process was tightly managed between the consultant design company (Sinclair Knight Merz) and the key Abigroup project team members. This allowed the construction "smarts" implementation of constructability and cost-effective solutions to be introduced into the design process well prior to the 'Issue for Construction' drawings being released.

There were significant staged reviews conducted on design packages, refining the best for project outcome for cost, programme and constructability. Project design delivery always remained in advance of construction.



RTA Form 16-137
Contract No. 442421
Rev 1/2015

ROADS & TRAFFIC AUTHORITY

Contractor Performance Report

General Information

Contractor Name: Abigroup Contractors Pty Ltd

Trading as:

ABN: 47 000 291 516

Contract No.: F01004040002823

Contract Description: Contract to construct Stage 2B Pacific Highway (Lay-off)

At Acceptance of Tender: Original Due date for: 02/10/2009
Contract Period (week): 100

Contractor's Performance: Rate with appropriate number (0-10)

	Unsatisfactory - [0-4]	Acceptable - [5-7]	Good - [8-9]	Superior - [10]	Rating value used to calculate
Aboriginal Employment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8
Abigroup have made a good effort to meet Aboriginal Employment requirements. They have 2 local aborigines employed on site, have involved the LALC in surveys for problems and have provided training for other locals employed for Road Safety Council. Agencies in the LALC to nominate more prospective locally based employees have had no response. Abigroup also have some contract aboriginal public operators who have worked on this site.					
Co-operative relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10
The excellent site relationship between Abigroup, URS and RTA continues at all levels. Issues are resolved co-operatively and within the Client requirements. There are no disputes to resolve. The management approach is one of continuous improvement, self assessment, general industry monitoring and client satisfaction.					
Community Interaction	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10
Abigroup have managed well the challenge of Community Interaction during construction procedures for the stage of paving for 21 km in this area. They have developed a good relationship with the local community. Abigroup continue to liaise with the general public in a timely manner.					
Contract administration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10
Abigroup submit all contract documents with in the specified time limits or in an agreed time frame. They work to be open and honest with negotiations and variation administration. Change Order Procedures are well documented and supported. Abigroup continue to manage a good system and have appropriate staff levels to support administration of the contract. Abigroup have only applied for one extension of time to cover additional works called up under a Change Order.					
Design (Design & Construct Contracts)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9
Abigroup's management of their design sub-contractors continues to be good. They have actively reviewed the designs for constructability. Design generally address the SWTC and the RTA reference documents. Abigroup have systems for RTA consultation. All design packages have been checked by RTA before minor design changes are managed well through the RT system.					

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Planning and Control of Design and Construction Operations

The project team managed the challenge of community interactions during evacuation procedures for the village of Nerong for the 25 blasts completed within 500m of residential homes. A good relationship with the local communities was developed across the length of the project site. The local project labour force and Abigroup donated skills and materials to assist the community with the completion of the local community centre.

Ongoing Legacy

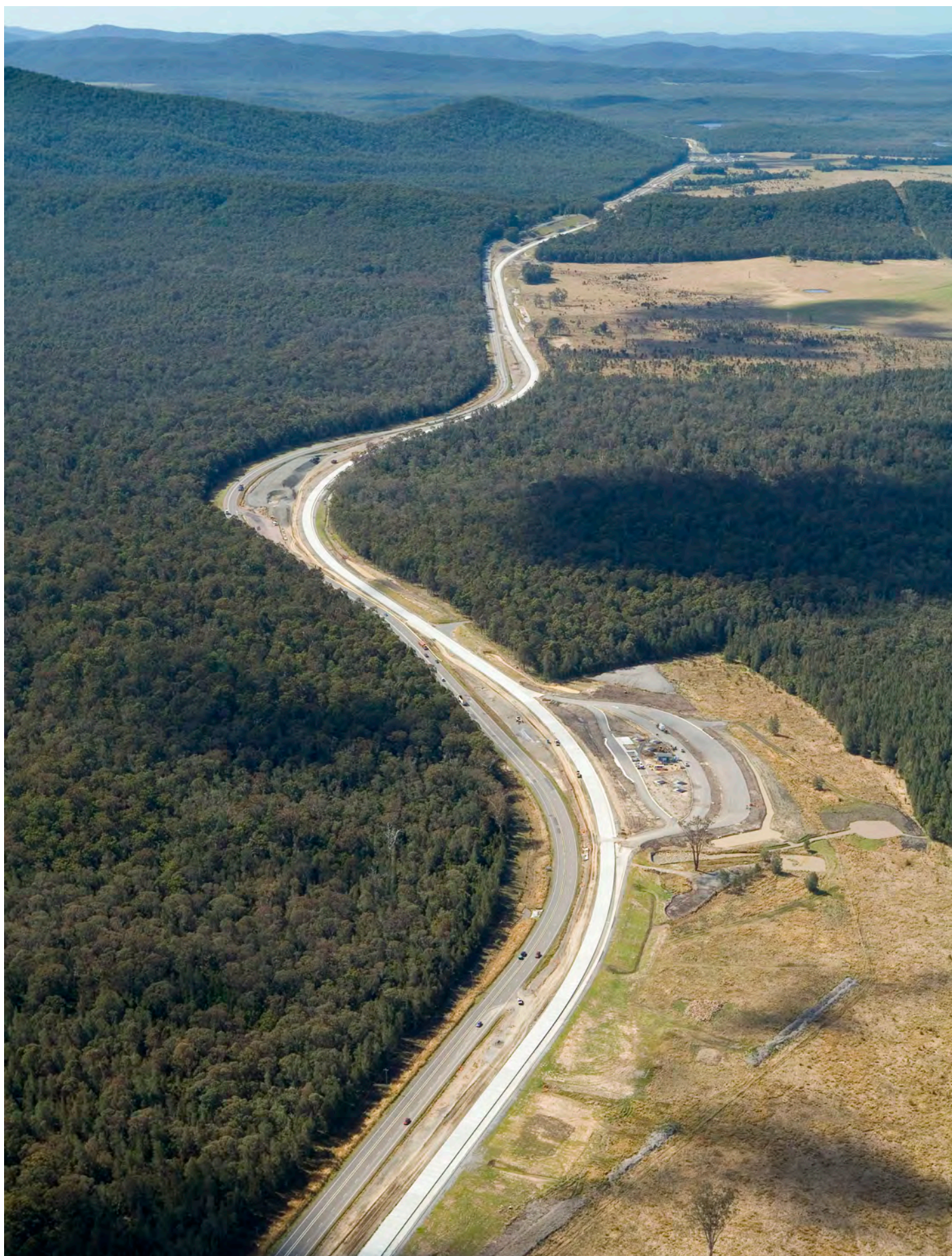
As outlined in the criteria above, this project set benchmarks across all Key Result Areas. The achievements of the project and project team have been of the highest standard.

The client and all involved in the project have left behind a legacy for the community and for all users of the Pacific Highway that Abigroup Contractors' Karuah to Bulahdelah Sections 2 & 3 project is a model project and one which has converted a previously dangerous section of roadway into 23km of new, four-lane dual carriageway providing safer conditions on this section of the trip between Sydney and Brisbane.



Section 4

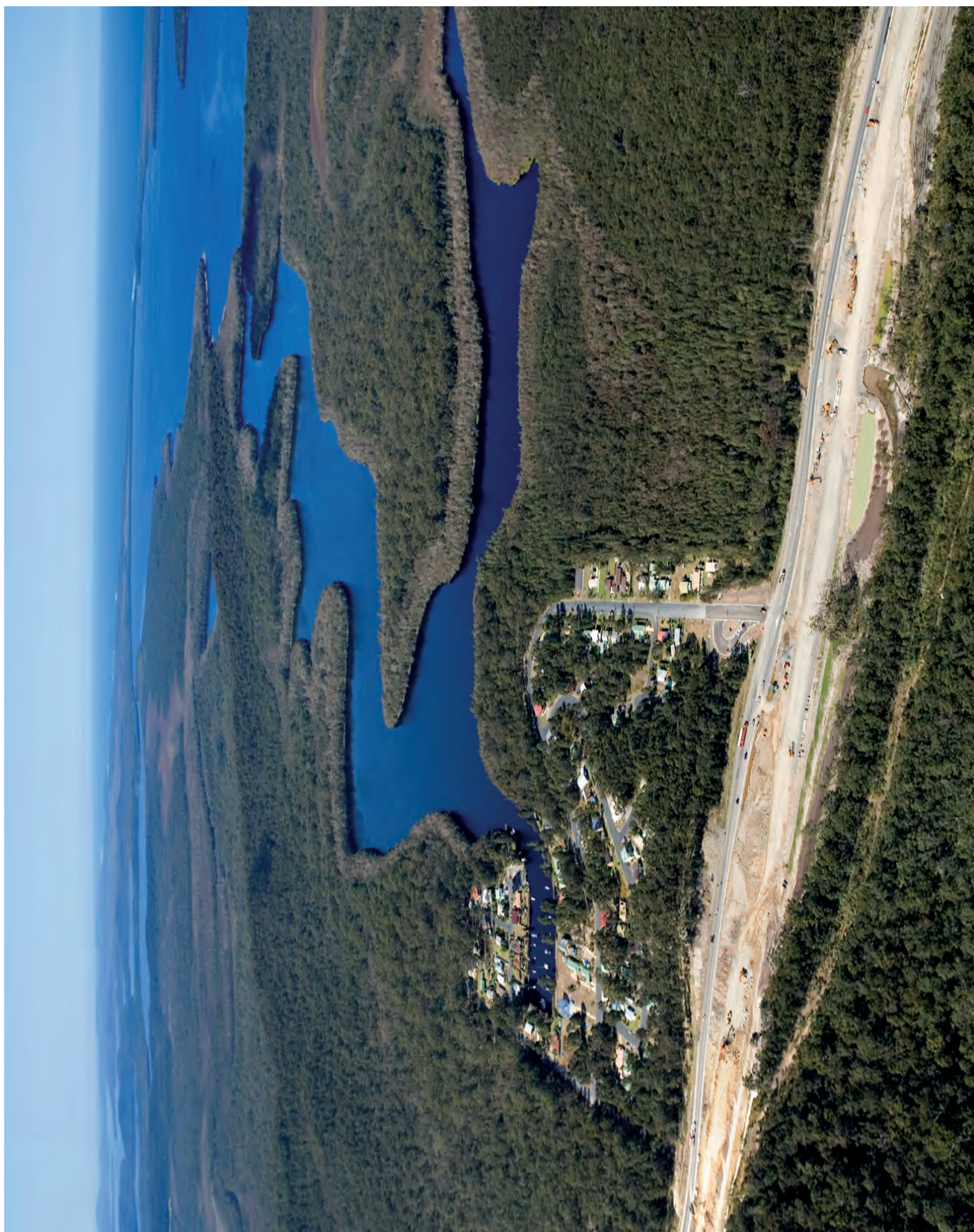
Project Photographs



Aerial view of the southbound rest area



Arch bridge over Jacks Creek



Aerial view of progress alongside Nerong and Myall Lakes National Park