

Woolgoolga to Ballina Pacific Highway upgrade: Technical Paper

Australian Construction Achievement Awards 2022
Stage 2 Submission



Table of contents

Executive summary	1
Overview	
W2B Description	3
The Figures	4
Exceptional Outcomes: Programme, People & Place	5
Outcomes achieved: Capacity, capability and skills targets	7
On time delivery despite potentially overwhelming challenges	8
Local employment	9
Graduates: Developing leaders of the future	10
Local supply chain: boosting local capacity	10
Building a Positive Industry Culture	11
Driven to save lives	12
A safety culture	13
Employee engagement	13
Workforce wellbeing	13
Environment: Leaving it as it was	15
Internal publication	16
Supporting those who support communities	16
Technical Expertise: Cutting-Edge Construction & Advanced Engineering	17
Streamlined bridge design	18
Data driven: Real-time oversight	18
Our custom digital engineering & spatial platform	19
The geotechnical challenge	20
Improved flood immunity	21
A staged opening	22
Result	23
Leadership Team	24

Executive summary

Historically, much of the Pacific Highway was two lanes wide, undivided. Following this programme, those days are over.

The Woolgoolga to Ballina Pacific Highway upgrade (W2B), 155 kilometres of four-lane, divided carriageway that represented the final link in the Pacific Highway's upgrade, was jointly funded by the Australian and NSW governments on an 80:20 basis.

The delivery partner team (Pacific Complete), a joint venture that saw Laing O'Rourke and WSP Australia partnering with Transport for New South Wales (TfNSW), delivered the 129-kilometre section between Glenugie and Ballina.

The delivery partner enabled the unprecedented scale and pace required for W2B complemented by a high performing and collaborative team culture integrated with TfNSW. Pacific Complete drew from the experience of previous Pacific Highway upgrades coupled with private sector knowledge to innovate solutions and realise long-needed safety outcomes to generate high quality public value.

Both the Federal and State governments shared a commitment to opening the final link by 2020. Importantly, the entire delivery team was united around the central theme of Driven to Save Lives.

This was not just about the outcome of the build – increased safety of better quality roads, improved signage and divided carriageway – but also safety during the construction, which was further challenged by bushfires, floods and a global pandemic.

By the end of 2020, the team honoured the commitment to the Australian and NSW governments by opening the final link of the Pacific Highway to traffic.

W2B significantly improves safety and freight reliability – reducing incidence of fatal crashes. Crash rates are expected to reduce by 27%. Travel time from Woolgoolga to Ballina has been reduced by 29 minutes.

This significant piece of infrastructure leaves a positive legacy for local communities and stakeholders. W2B will protect lives, reduce travel times and boost greater economic growth.

We're proud of our response.

The results, outlined over the following pages, illustrate our success in terms of purpose, value for money, capability and skills targets, engineering and construction innovation, and more.



155 Bridges
8,900 precast elements
1,720 piles
12,015 metres of total bridge length



1 million hours worked by over 300 First Nations Australians, from 20 Indigenous Nations
10% locals employed at peak
16,000 peak month trainee hours



15 million cubic metres of earthwork carried out to deliver the highway upgrade
1,500 heavy machinery at peak construction
25,000 tonnes delivered in one day

W2B Description

The delivery partner team (Pacific Complete), a joint venture that saw Laing O'Rourke and WSP Australia partnering with Transport for New South Wales (TfNSW), delivered the 129-kilometre section between Glenugie and Ballina.

The upgrade to four lanes of divided carriageway included earthwork, piling, bridge and structures, pavements, material supply and finishing work.

Our team of construction, design and program management specialists focussed on community as well as construction as they procured and managed over 170 contract packages.

The construction represented the final link in the Pacific Highway upgrade, between Hexham and the Queensland border.

This significant piece of infrastructure is intended to serve numerous vital purposes for local communities and stakeholders as well as the national economy.

- The upgraded highway improves travel time between Sydney and Brisbane, cutting 29 minutes off the average trip.

- The new infrastructure improves safety, with an expectation of a 27% reduction in crash rates.
- In achieving time and safety goals, the Pacific Highway upgrade provides vital improvements in freight reliability.
- The upgraded Pacific Highway connects local communities and creates new jobs and businesses, as individuals and businesses were trained in new work techniques and processes during the build.

FACT BOX

Name: Woolgoolga to Ballina Pacific Highway upgrade

Status: Open to traffic December 2020

Partners: WSP Australia, Laing O'Rourke, Transport for NSW

Client: Transport for NSW

Location: NSW North Coast

The figures



\$4.9 billion



Over 170 procurement packages from \$100,000 to over \$500 million



1,538 designers / 735,600 hours / 360 design lots / 22,000 IFC drawings / 100% IFC



2 major flood plains / over 20 local catchments



27 kilometres of soft soil / 3 million cubic metres fill placed / 2 million metres of wicks / over 1,000 boreholes / 3,509 concrete injection columns



15 million cubic metres of earthworks / 10 local quarries / 1,500 heavy plant at peak / 25,000 tonnes peak daily delivery



155 bridges / over 8,900 precast elements / 1,720 piles



785,000 cubic metres concrete / asphalt 240,000 tonnes



350 fauna connectivity structures / 35 threatened species / 3,600 hectares of biodiversity offsets / 130 hectares of koala food trees



3000+ people at peak / 10% local / 18,679 safely inducted / 16,000 peak month trainee hours



Exceptional outcomes: Programme, people & place

On W2B we delivered a programme of projects at an unprecedented scale and pace. During peak construction we delivered the equivalent of a major project every month for 3 years that included a monthly turnover of >\$100m, within 1% of the forecast.

Our team, overseeing more than 3000 people, delivered during a period of disruptive floods, fires and a global pandemic, meeting timelines and achieving goals.

We did this by utilising a staged approach that focussed on safety, on keeping people moving and on ensuring local communities experienced long-term benefit with value that stretches way beyond a new road.

FACT BOX

3000+ employed at peak

16,000 peak month trainee hours

1 million+ hours participation by
Aboriginal and Torres Strait Islander
Peoples

10% locals employed at peak

18,600+ people safety inducted



Outcomes achieved: Capacity, capability and skills targets

Major projects such as W2B have the capacity to stimulate and improve economic productivity and bring about social benefits in both the short and long terms.

That's why our delivery model focussed on building the skills of local communities by engaging job seekers and connecting them with contractors.

Our processes were shaped around ensuring social and economic value was delivered, including knowledge, experience and capability of individuals and businesses.

The delivery partner enabled delivery at an unprecedented scale and pace complemented by a high performing and collaborative team culture integrated with TfNSW. Pacific Complete drew from the experience of previous Pacific Highway upgrades coupled with private sector knowledge to innovate solutions and realise long-needed safety outcomes to generate high quality public value.

We're proud of the capability and skills outcomes resulting from our innovative processes, apprenticeship, and graduate

programs, boosting of local supply chains and use of technology in engineering.

We worked closely with training and employment providers on the NSW North Coast to identify and prepare individuals and businesses for job opportunities across the upgrade.

The team also provided community members with the opportunity to attend inductions and safety training prior to gaining employment, to remove barriers and ensure individuals could mobilise quickly to the job if required.

During that same period, 16,000 trainee hours were provided, ensuring the local workforce was upskilled and retained valuable knowledge to utilise long after W2B's completion.

The work we did with local contractors, quarries and at all levels of the supply chain proved beneficial to local economies and upskilled workforces within those local supply chains.

W2B enabled diversity, inclusion and capacity building for local industry and the workforce, and the 'multiplier effect' will

ensure the training and experience will go on to add value in the regions for decades to come.

On time delivery despite major challenges

The team continued meeting timeline milestones throughout major challenges including flood events, bushfires and the COVID-19 pandemic.

The upgrade improves the flood resilience of the Pacific Highway providing communities with improved connectivity and better access to refuge and resources.

Digital technology played a major role in W2B's success, including:

- a mobile app to track and record sightings of threatened species along the Pacific Highway, enabling our environment team to capture more accurate estimations of numbers and types of wildlife along the corridor
- the use of drones to improve contract administration, manage materials

and provide updated imaging for GIS mapping

- key processes and systems were managed within an intuitive and dashboard-driven, real-time digital engineering system feeding data into a central digital portal. This real time data improved safety outcomes through automated alerts about risk of soft soil failure
- the Geographic Information System gave everybody instant access to current data. Wherever teams were, they could quickly access the latest information, saving time and money by resolving design, construction, environmental, or community issues on site.

Local employment

In support of local employment including participation by Aboriginal and Torres Strait Islander peoples, the team delivered 20 job opportunity events and a Work Ready Program, providing direct connection with employers.

Of course, it was not possible for every position to be filled by a local person. At peak construction, relocated workers represented about 62% of the workforce.

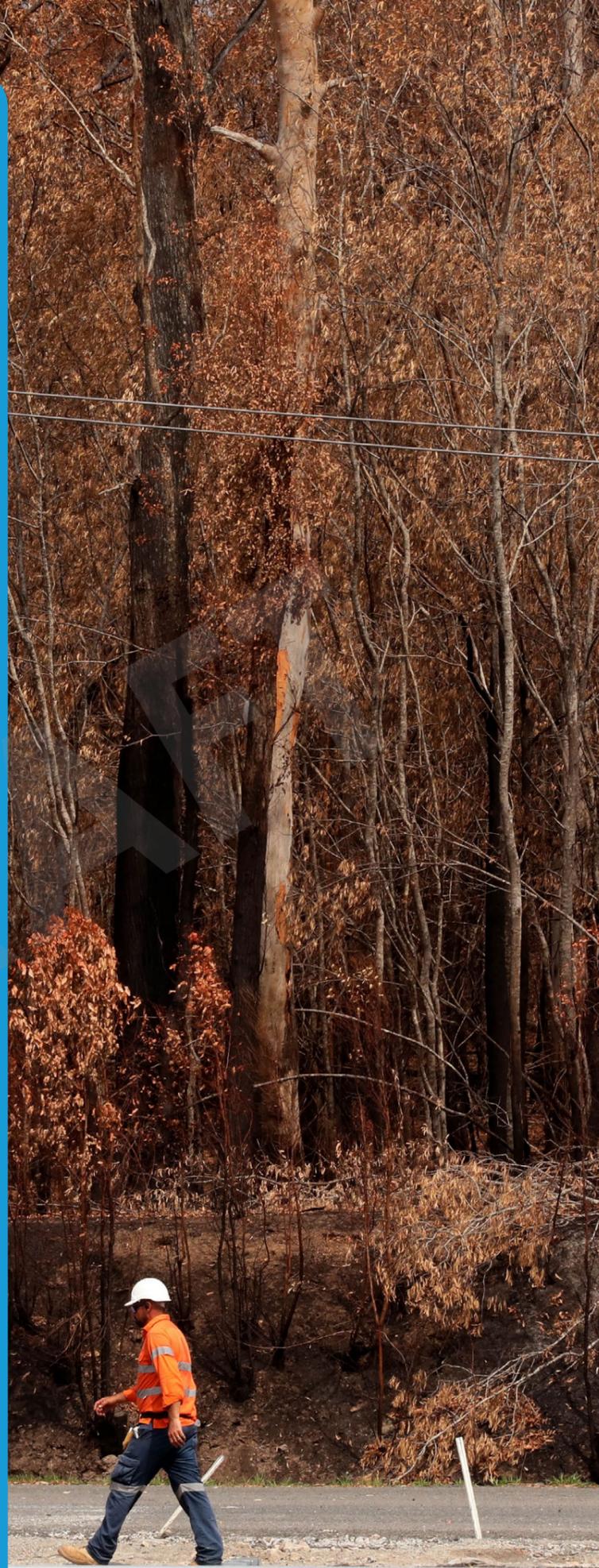
Having individuals and their families relocate to the area provided a significant boost to local economies and resulted in more investment and employment in indirect industries like retail, healthcare and hospitality.

As 15 million cubic metres of earthwork was carried out, 155 bridges were built and the Australia's largest concrete pavement was laid, 10% of the 3000-strong peak employment workforce was local labour.

More than 1,000,000 hours were worked by Aboriginal and Torres Strait Islander peoples, exceeding targets. During the peak work period, 300 First Nations Australians from 20 Indigenous Nations were employed.

To achieve these goals, our team:

- launched numerous campaigns to encourage and support local people entering the workforce
- ran four jobs roadshows that were attended by 950 people in total – two of the roadshows focused on Aboriginal participation
- organised close collaboration with training and employment providers on the NSW north coast
- set up industry briefings, career open day participation and site visits for construction industry students



Graduates: Developing leaders of the future

We know that one of the biggest challenges facing the construction and engineering sectors, which are so vital to the nation's future, is access to talent. For that reason, the mentoring of future leaders was another focus during the programme.

Since 2017, 26 graduates completed our rotation program.

The program was designed to offer valuable exposure to a broad suite of teams, capabilities and challenges. Along the way, this helped develop talent through exposure to real-world construction experience. It encouraged a solutions-focused mentality in young graduates who will make a difference on similarly important projects in the future.

Local supply chain: boosting local capacity

W2B stimulated and improved economic productivity and brought about social benefits in both the short and long terms.

It contributed to significant regional growth on the North Coast of NSW, including direct jobs on the highway but also secondary

benefits to local services, tourism and economic development.

As a result, the team was able to realise several achievements:

- Positive impact on supply chain by using master supply agreements to meet demand, manage the risk of cost escalation and boost development and expansions of local quarries
- Ensured supply chain diversity by providing opportunities for smaller businesses
- Improved safety systems as part of delivering supplies to site via heavy vehicles on public roads – the team implemented a new journey management system to track and coordinate oversized vehicle journeys and minimise community disruption.

Working with industry and local education institutions enabled pathways into the construction industry and provided career opportunities for local people beyond the lifetime of the upgrade.



Building a positive industry culture

As mentioned, the overarching purpose of the programme was as simple as it was powerful – ‘driven to save lives’.

This purpose affected every aspect of the programme, from the way workflows were designed to the final outcome for community members and road users.

Such a large programme was always going to be a safety challenge. Add bushfires, two flood events and a global pandemic, and things would only become more challenging.

We believe those challenges made our response – from the leadership team to every person on the site and to members of surrounding communities – more positive

and more powerful. The result is measurable improvement in construction culture and new levels of community consultation and collaboration.

Driven to save lives

There wasn't just one team on the programme whose job it was to ensure safety across the board. In fact, our Next Gear safety culture (see next section) made workplace health and safety everybody's responsibility.

Apart from ensuring individual ownership of safety, our functional teams supported our safety and construction teams in delivering safety performance.

These included:

- Human Capital – looked after recruitment, retention (including culture) and training
- Community and Stakeholder Engagement – ensured road users, landowners and communities were kept up to date about what was happening on W2B

- Project Controls – had a significant risk management responsibility like scheduling our oversize over mass deliveries
- Logistics – planned and implemented proper processes around piling and earthworks, oversized deliveries and temporary site compounds and facilities
- Workplace Health and Safety – planned, implemented, and led our exhaustive safety strategy, including constant reviewing and iterative improvement
- Environment – in a ‘normal’ work environment and during extremes such as bushfires and floods, inspected sites to ensure all necessary controls were still in place, organised contractors to make repairs and ensured processes and protocols were followed around wildlife sightings and more

A safety culture

Our 'Next Gear' safety culture, a solutions focussed way of approaching work, is part of everything we do and is adopted by all contractors on our projects.

Next Gear understands safety as the presence of positives in a healthy system.

All workers on W2B completed Next Gear safety training, with a total of 18,679 individuals safety inducted. At peak the delivery team recorded 3,465 workers every day, totalling 22,622,220 person hours programme wide across the 129 kilometres.

Next Gear has had a positive impact on the safety culture and performance of large and small contractors. A number of contractors working on the programme adopted Next Gear as their safety management system which has transcended W2B.

It supported the supply chain to challenge the traditional approach to safety and empowered the workforce to innovate, foster and champion positive change on future projects. It encouraged a sense of pride in safety.

We also supported Transport for NSW with the rollout of safety initiatives including Separate Yourself, Yellow Line trial and the Variable Speed Limit Sign program. These promote and enforce a standard of best practice for protecting the workforce.

Employee engagement

In 2020, our team exceeded the engagement benchmark of 75% for a 'highperforming team' and advanced to the 'excellent team' rating. This was measured regularly via surveys, ensuring successful outcomes were built upon.

Workforce wellbeing

The 'Five Ways to Wellbeing' is a set of evidence-based, public health messages about activities known to improve mental

health and wellbeing, including:

1. Connection
2. Activity
3. Awareness
4. Learning
5. Giving

The framework sees people as the solution to their own sustained health, giving people the power, permission, and positivity to choose what is right for them at the time, when they most need it.

It's not about forcing compliance on employees. Instead, it is engaging and encourages development and active, voluntary participation.

There is a compelling case for change. After all, research tells us:

- workers take an average of three days off each year due to stress
- half of all employees have left a workplace because of a poor mental health environment
- 60% of employees in mentally healthy workplaces are more committed to their jobs

Then there are the confronting facts that construction workers are six times more likely to die by taking their own lives than in a workplace accident, and twice as likely to take their own lives than the average Australian.

These sobering statistics were taken very seriously by the W2B team.

The Five Ways to Wellbeing program was actively promoted to all stakeholders, offering them various tools to make the improvement of mental health and wellbeing a reality.

All workers on W2B completed Next Gear safety training, with a total of 18,679 individuals safety inducted.





Environment: Leaving it as it was

Members of the Environment team didn't simply ensure every contractor delivered their part of the programme to an acceptable environmental outcome; or stop at running vital checks of facilities and controls after major weather events such as floods and bushfires.

They also oversaw the permanent landscaping work, fauna connectivity structures and the rehabilitation of the entire construction footprint – all 2,300 hectares – to ensure no residual risk to the environment from contamination, waste, or erosion.

These activities were designed, implemented and audited against more than 600 environmental compliance requirements.

The outcome included:



350 fauna connections for 35 threatened species



Emu awareness campaigns and an emu fencing trial



3,600 hectares of diversity offsets



Building and installing about **700** nest boxes



300 kilometres of fauna fencing



130 hectares of koala food trees



1.4 million plants



Adjusting scheduled work during the Oxleyan pygmy perch (OPP) breeding season to avoid the fish habitat/watercourse areas

Internal publication

Our internal publication W2B Way was a key method of communication with all staff.

One ingredient in a mix that included digital media, mass media and internal communications, it offered proactive advice around mental health, wellbeing and management of change, particularly at new phase points throughout the programme journey.

The workforce was also heavily involved in broader awareness and social inclusion days such as Wear It Purple day, R U Ok? day, STEPtember and more.

Supporting those who support communities

With the support of Transport for NSW, as sites were demobilised, valuable items were donated to numerous small, rural branches of the NSW Fire Service and local charities.

These included white goods, picnic tables, chairs, storage cupboards, workstations, ice boxes, bollards and more.

Some of the items will be used to aid firefighting efforts and training, while others will contribute to creating a comfortable space for volunteers.

Many of the items were delivered to the Clarence Valley Rural Fire Service branch and shared among local stations including Pillar Valley, Halfway Creek, Gulmarrad, Ashby, Tucabia and Mt Ramornie. Others were delivered to the Northern Rivers branch once the Iluka and Broadwater site compounds shut down.

These stations all sit close to the new highway alignment and had a history of working with us on the upgrade.

Technical expertise: Cutting-edge construction & advanced engineering

As much about safety as it was about ensuring smooth passage for people and freight, the upgrade is expected to save over 560 lives and over 4,200 injuries over a 30-year period, avoiding over 8000 crashes and the medical, financial, social, and emotional damage they contribute to.

Around 80% of the upgrade was paved with concrete, totalling about 785,000 cubic metres.

To ensure an uninterrupted concrete supply chain, a total of 11 temporary batch plants were in operation.

Master supply agreements enabled greater certainty of delivery of quarry materials, including raw materials required for the 10 batch plants, which was essential on a job of such scale. Executed through supply deeds, they guaranteed:

- dedicated resources
- materials made and stockpiled ahead of schedule, to hedge against any disruption
- approvals for movements adequate to meet demand
- quality of materials
- contractor management – each contractor engaged was guaranteed a quantity per day, allowing for further certainty in programming

Agreements were put in place for:

- quarry supply
- concrete material
- precast supply
- laboratory testing

In 2019, the W2B team completed two successful pavement trials with recycled glass incorporated into the concrete mix for the first time on the mainline carriageway of the Pacific Highway upgrade.

FACT BOX

80% of the upgrade was paved with concrete, totalling about **785,000** cubic metres.

Streamlined bridge design

Productivity was boosted when the team standardised certain pre-cast elements and through innovative design reduced the number of pre-cast elements required.

While every one of the 155 bridges on W2B is unique, most shared common parts and design elements. By identifying these elements and manufacturing those parts off-site, numerous efficiencies were realised that saved resources, time, and money.

It provided:

- Program certainty and risk management
- Value for money through economies of scale
- A strong, logistics-based chain of responsibility
- Simple interfaces between bridge and civil contractors
- Reduced impact on travelling public (reduction in oversize loads)

Data driven: Real-time oversight

Digital engineering, fuelled by data from a single source of truth, was key to the success of the programme, including the procurement aspect. It increased visibility into every level of the supply chain during a time at which numerous industries were struggling with that aspect of their businesses, simplifying and de-risking supply chain management.

The digital oversight of the programme pioneered an amalgam of project control systems enabling the viewing of data in different layers. This meant data could be interrogated by procurement package, earthworks, drainage, geographical area, etc.

Delays to reformat data became a thing of the past, as did decision-making informed by historical data. All decisions could instead be made with full knowledge of what was happening on the ground in real time.

Technology within local supply chains advanced as we incentivised partners to integrate digitally via contract mechanisms, automated progress claims, monthly reporting, and online submissions.

Most of those businesses are now technologically transformed compared to pre-project, making them more efficient, competitive, and innovative as they move on to other projects.



Our custom digital engineering & spatial platform

The team implemented a digital engineering and spatial information one-stop portal called PCmap to support the successful delivery of the programme.

PCmap synthesised all relevant and current information into one manageable system consisting of 2400 layers. It included the integration of Navisworks' 3D design review product.

This innovative system was designed to present real-time data to stakeholders, offering an entirely new level of accessibility and usability.

It enabled real-time identification of design and construction problems from wherever users were located, and provided tools to manage and streamline daily activities, automating previously repetitive and potentially low-value tasks.

At its peak, the system had more than 1000 users. The centralised data warehouse was designed to support business decisions by allowing data consolidation, analysis and reporting at various aggregate levels.

This facilitated transparency and information sharing with our clients, stakeholders, and the broader delivery team.

What did this look like during the build? PCmap ensured the client (Transport for NSW), W2B team, contractors and stakeholders had secure access to relevant and current information, which:

- improved information-sharing and communication by tailoring information relevant to the unique needs of the individual user, to inform decisions

- enabled W2B to provide information to external users, such as community members and tendering organisations, without compromising the security of sensitive information
- improved the usability of viewing federated (consolidated) models within Navisworks. The programme's large spatial extent required an innovative response to the challenge of viewing detailed Building Information Modelling (BIM) data. PCmap offered an efficient way to segment and present only the relevant models via an overview map with the capacity to generate an area of interest for presenting the models, simplifying, and clarifying the user experience and improving access
- integrated Geographic Information System (GIS) and BIM enabled the viewing of large datasets, including complex designs and staging plans. This allowed quick identification of conflicts, design optimisation and solution sharing with relevant users
- provided monthly aerial photos, LiDAR ('point clouds' from returning laser pulses), and existing structure photos and documentation. Users could print maps and store mark-ups, which were used to capture ancillary sites and initial project staging. The technology removed the need to create thousands of GIS maps and CAD sketches.

From its initial introduction on W2B, this one-stop spatial portal will now continue to evolve as it supports the delivery of future infrastructure projects.

It is a piece of technology developed for W2B that will revolutionise delivery of future projects, enabling smart infrastructure, predictive maintenance programs and a better understanding of whole-of-life cost management.

The geotechnical challenge

W2B faced several geotechnical challenges that required deep collaboration between design, construction and client, including:

- Soft soil – 27 kilometres of soft soil / 3 million m3 fill placed / 2 million metres of wicks / over 1,000 boreholes / 3,509 concrete injection columns / 121 dashboard alerts received in one day
- Earthwork – 15 million m3 of earthworks / 10 local quarries / 1,500 heavy plant at peak / 25,000 tonnes peak daily delivery
- Bridges – 155 bridges / 1,720 piles / 12 kilometres of bridges, mainly across rivers and soft soil floodplains

Innovative solutions included:

- Forming a collaborative Geotechnical Review Group (GRG) responsible for reviewing, monitoring and directing geotechnical challenges throughout the design and construction phases. The GRG ensured best value for money solutions were implemented and the client's objectives were achieved.
- Developing sophisticated, real-time geotechnical monitoring of more than 3,100 geotechnical instruments through an online dashboard system that processed geotechnical data into easily interpreted

summaries of performance and issued automated alerts if required.

- Incorporating a trigger-level response process that controlled a safe construction methodology, so key personnel within the GRG were automatically alerted in the event of an unexpected instrument reading. Real-time data enabled the GRG to react and adjust, confident in the information at hand and therefore in their decisions.

This approach resulted in zero slip failures occurring, real-time interventions and constant, careful oversight of the progress of work, ultimately enabling the programme to be completed on time.



Improved flood immunity

The W2B upgrade runs through two floodplains in the Clarence and Richmond Valleys as well as several local catchment floodplains.

The upgrade has been designed to improve the flood resilience of the Pacific Highway and minimise its impact on future floods. When the next flood comes, the motorway will remain open longer, providing communities with improved connectivity through alternate routes and better access to refuge and resources.

This means a quicker and safer recovery operation with the SES predicting faster response times and a greater capacity for self-evacuation to avoid extended isolation.

As part of the design refinements process, we changed the size and location of flood openings and replaced several culverts with bridges to achieve better flooding outcomes.

To understand the impacts of the upgrade on flood behaviour, we spoke with residents and property owners and analysed data from real flood events. The team also refined and validated flood impact models – running more than 150 scenarios.

Upon completion of the upgrade, local councils and the SES were provided the final flood models, which will better inform emergency response plans for the community.



A staged opening

Dual carriageway median separated motorways enhance safety by separating traffic, removing conflict points, and allowing for overtaking.

Bypassed towns, new rest areas and grade separated interchanges also offer improved safety outcomes.

The Woolgoolga to Ballina upgrade was staged to ensure these benefits were realised as quickly as possible. The staged approach kept traffic moving while construction continued on other parts of the road.

The 36-kilometre section between Glenugie and Tyndale opened in May 2020, bypassing South Grafton and Ulmarra. It features a split interchange at Glenugie, new north and southbound rest areas at Pine Brush and the Tyndale south interchange.

The 12-kilometre section between Tyndale and Maclean opened in March 2020, including the Tyndale north interchange. The Maclean interchange took its final formation in August 2020.

The 10.5-kilometre section between Maclean and Mororo opened in September 2020, with the new bridge over the Clarence River at Harwood opening in December 2019. This section features the Yamba/Watts Lane split interchange and the Iluka interchange.

The 15 kilometre section between Mororo and Devils Pulpit opened in August 2020 and includes a new southbound rest area at Mororo.

The 15-kilometre section between Devils Pulpit and Woodburn opened to traffic in December 2020 and was the final section completed as part of the Woolgoolga to Ballina upgrade.

The 34-kilometre section between Woodburn and Pimlico opened in September 2020, bypassing Woodburn, Broadwater and Wardell. It features three new interchanges at Woodburn, Broadwater and Coolgardie as well as the new bridge over the Richmond River at Broadwater.

The 6.5-kilometre section between Pimlico and West Ballina opened in December 2019, linking the upgrade to the Ballina bypass. It includes two new bridges over Duck and Emigrant Creeks.



Result

Once the final piece of Australia's largest concrete pavement infrastructure project was delivered, it had brought global private sector innovation and flexibility together with the knowledge, experience, and expectation of the public sector.

The team worked collaboratively with TfNSW, contractors and sub-contractors to achieve the common goal of opening to traffic in 2020.

As described in preceding pages, wherever possible the team employed locally, creating new jobs and training individuals and businesses in new work techniques and processes.

Sophisticated, user-friendly systems provided performance information to the team and partners to make informed decisions and deliver the programme at an unprecedented scale and pace, and with a safety record that sets the bar high for future infrastructure projects.

This significant piece of infrastructure leaves a positive legacy for local communities and stakeholders.

It also improves safety, travel time and freight reliability between Sydney and Brisbane.

We are proud of the team's collective efforts – W2B will save lives, enable greater economic growth, and link communities.

Leadership team

W2B was designed, overseen, and managed by many of Australia's most experienced and respected engineering, construction and infrastructure leaders. Some of our key players during peak construction included:



Allan Gregory

Programme Director, Pacific Complete

Allan is a chartered civil engineer with more than three decades of experience in construction. He has a wealth of international experience and regularly worked on large-scale infrastructure schemes including delivery partnerships with governments. Working for Laing O'Rourke, Allan was the Programme Director for more than three years on W2B, inspiring the team to deliver at an unprecedented scale and pace.



Paul Goldsmith

Construction Services Director, Pacific Complete

Paul is a chartered civil engineer with 36 years of experience in the development, procurement, and delivery of transport infrastructure projects in Australia and the United Kingdom. Working for WSP Australia, Paul is currently the NSW Major Projects Regional Executive, and spent two years as Construction Services Director for W2B.



Christopher Davis

Construction Director, Pacific Complete

Chris is a strategic leader with over 20 years' experience in the delivery of complex civil, tunnelling, transport, rail and building infrastructure projects. Working for Laing O'Rourke, Chris has a wealth of experience in delivering complex infrastructure projects in Northern NSW, this enabled a consistent approach to delivery during his five years on W2B.



Mark Leigh

Commercial Services Director, Pacific Complete

Mark has international experience in delivering major infrastructure projects predominantly in the road, rail and aviation sectors. Experienced in a variety of contracting models in both project and programme management. During his six years on W2B Mark's role evolved including strategic planning, cost, risk and contracts working closely with the client and stakeholders to ensure clarity and alignment on progress and issues.



Woolgoolga to Ballina Pacific Highway Upgrade

Driven to save lives