

HUNTER EXPRESSWAY

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THE HUNTER EXPRESSWAY PROJECT BACKGROUND

The Hunter Expressway has a long planning history and is now in the construction stage of the project. The Australian Government is funding \$1.5 billion and the NSW Government up to \$200 million to complete the project.

This \$1.7 billion project involves the construction of a four lane freeway link between the F3 Freeway near Seahampton and the New England Highway, west of Branxton. The new expressway will provide a new eastwest connection between Newcastle and the Lower Hunter and is one of the biggest road infrastructure projects to be built in the Hunter.

The Hunter Expressway received planning approval in 2001. The conditions of approval required Roads and Maritime Services to reduce its ecological impact. To meet these conditions, Roads and Maritime Services modified the design to reduce clearing of native vegetation, including endangered ecological communities.

The modifications includes three key changes to the Hunter Expressway's design:

- Realignment through the Sugarloaf Range and construction of three large bridges over deep gullies.
- Closure of Stanford Road, Stanford Merthyr, on both sides of the Hunter Expressway.
- Construction of a new interchange at Branxton to divert traffic onto

the Hunter Expressway that otherwise would have travelled through Branxton on the New England Highway.

On 19 August 2007, the NSW Minister for Planning approved the modifications to the Hunter Expressway.

FEATURES

- 40 kilometres of dual carriageway freeway;
- 52 bridges including 840 metres of high bridges through the Sugarloaf Range;
- Six grade separated interchanges located at the F3, Buchanan, Kurri Kurri, Loxford, Allandale and Branxton;
- A one kilometre reconstruction of South Maitland railway, including a new railway bridge.

BENEFITS

- Cut travel times between Newcastle and the Hunter by an estimated 28 minutes.
- Improve the efficiency of the national network.
- Provide a more direct and efficient route for freight movements between the Upper Hunter and the Port of Newcastle.
- Reduce the number of heavy vehicles travelling on the New England Highway through towns such as Branxton and Maitland.
- Relieve congestion on the New England Highway between Weakleys Drive and Branxton.
- Potentially reduce between 15,000 and 30,000 vehicles per day on the

New England Highway, according to projected traffic levels in 2031 noted in The Lower Hunter Transport Needs Study.

- Support the growing Hunter region.
- Meet the growing freight task of the region.

THE HUNTER EXPRESSWAY PROJECT OVERVIEW

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EASTERN SECTION: F3 TO KURRI KURRI

The Hunter Expressway Alliance (Roads and Maritime Services, Thiess Pty Ltd, Parsons Brinckerhoff and Hyder Consulting) started construction on this 13 kilometre section of the project in August 2010.

The eastern section includes two grade-separated interchanges - at the F3 Freeway and at Buchanan, as well as overbridges at Seahampton Road and Averys Lane. Rest areas for light and heavy vehicles will be built on both sides of the expressway at Buchanan.

Three high bridges (or viaducts) will span the steep gullies through the Sugarloaf Range and are located 1.4 to 2.7 kilometres west of the F3 Freeway. The viaducts have a total length of 787 metres and are up to 47 metres in height above the gully floors. This website has a video that explains how the high bridges are being built and it is available on the video library page.

WESTERN SECTION

Abigroup Constructors Pty Ltd started construction on the 27 kilometre western section of the project in April 2011 (design and construct contract).

In the western section of the project, construction is progressing well and significant work is visible to passing motorists. The western section includes four grade-separated interchanges – at Kurri Kurri, Loxford, Allandale and Branxton. It also includes road bridge crossings at McLeod Road at Loxford, Old Maitland Road at Sawyers Gully, Camp Road at Allandale and Tuckers Lane at Greta.

Bridge construction is continuing at various locations between Kurri Kurri and Branxton. Major earthworks are progressing well, and by January 2012 more than 1.6 million cubic metres of soil had been moved. Abigroup has approximately 3 million cubic metres of earthworks as part of its construction.

FUNDING

The Australian Government is funding \$1.5 billion and the NSW Government up to \$200 million to complete the project.

OPENING TO TRAFFIC

The Hunter Expressway is scheduled to be open to traffic at the end of 2013, weather permitting.



DEDICATED TO EFFECTIVE RESOURCE RECOVERY

While Newcastle Earthmoving are experts at clearing trees and vegetation, in some ways their real calling is retrieving a useable resource that's in the wrong place, at the right time, and redeploying it productively elsewhere.

An example is their work on the Hunter Expressway project, where Newcastle Earthmoving began in 2010 with the early works phase, clearing new power pole easements so Energy Australia could move powerlines to accommodate the construction. The company's excavator fleet are fitted with specialised timber handling attachments, allowing them to retrieve the maximum amount of useable timber efficiently and safely, and to mulch the remainder quickly.

The next stage of works on the Expressway involved clearing the 20m wide centreline corridor for the Thiess section of works, giving longitudinal access so construction could commence. Again, timber and mulch were both retrieved with no negative environmental impacts.

Following that operation, Newcastle Earthmoving worked at the Branxton end of the Abigroup section, clearing, logging and mulching 40 hectares of vegetation, as well as clearing at the southern end where the Thiess and Abigroup sections joined up. All the timber retrieved from the site

was transported to Newcastle Earthmoving's Thornton yard, where it was recycled for a variety of purposes including firewood. The mulch was transported within the project area to stockpiles, for use in landscaping and site rehabilitation works.

Accuracy, safety awareness and care to minimise impacts on the surrounding environment were all required for the job, and the Newcastle Earthmoving team succeeded in achieving a quality result, without adverse incident. Managing Director, John Tranter, has been building the business for a decade, investing in both the best quality appropriate plant and equipment, and the networks which ensure a market for the timber and mulch products their project activities create.

"We take a value-adding approach," he said. "We have changed the focus on clearing to be on the recycled resource, it's not just recovery of wood as a by-product of clearing (for projects), the recycling is actually the most important part from our point of view. "RMS are beginning to specify for all their projects that all wood must be removed and recycled."

Newcastle Earthmoving is the largest retailer of firewood in the Hunter Valley, with clients including the Department of Corrective Services, who purchase the wood for inmates to re-parcel as a business initiative.

"Firewood is sustainable and environmentally friendly – it is a renewable resource," said John.

The company also supplies mulch for clients including mining operations and the Soil Conservation Service, for uses including fire trails and land rehabilitation, and a hydraulically driven mulch spreader is currently being developed by John Tranter to make the mulching process more efficient and effective.

Innovation is a major feature of the company's operations, with recent investments in plant including two controlled felling machines imported from Canada and adapted for use in civil clearing. This equipment, developed for Canadian swamp logging operations, allows for very efficient vertical mulching, in specialised areas such as power easements where the client does not want the stumps removed.

"This allows us to recover the resource, and still achieve environmental outcomes. We only do the bare minimum amount of earthmoving to enable our recycling operation," commented John. "Maintaining quality, that's the main thing. As a civil clearing contractor, we have to meet Government legislation, comply with OH&S and have everything up to quality."

Newcastle Earthmoving has 30 employees, with experience across civil works, forestry and timber milling. Their capabilities range from detailed excavation, selective logging and clearing through to the milling of fence posts and rails.

Some of their other project successes include the Buladelah Bypass, as a direct civil clearing contractor to RMS, undertaking clearing, mulching and silt control; the Greta Train Support Facility; Karuah to Buladelah Pacific Highway Upgrade; Cooperook to Herrons Creek Pacific Highway Upgrade; and numerous power line easements around New South Wales for Energy Australia.

Whether a project is a new residential subdivision, or a major roads project, Newcastle Earthmoving has the skills, expertise and equipment to make sure that whatever stands in the way in terms of vegetation is sustainably recovered, and put to good use.

For more information contact Newcastle Earthmoving, 35 Bonville Avenue Thornton NSW 2322, phone 02 4966 0470, mobile 0417 260 557 (John Tranter), email: info@newcastleearthmoving.com

THIS RELIABLE TEAM DELIVERS QUALITY RESULTS

Concreting in the wet is a dubious proposition at the best of times, but when your scope includes the kerbs and drains for a major civil project, it becomes real challenge to complete work to program. Fortunately, Hunter Kerb Constructions (HKC) has the management skills and onsite capabilities deliver top quality results in a timely manner for a project like the Hunter Expressway, rain or shine.

HKC constructed the Slipform Dishdrain, Jersey Kerb Walls and various extruded kerbs and drains for the project, using their two Gomaco Slipformers and Arrow Kerbmakers. A crew of six skilled operators and labour worked on the slipform tasks, while a crew of five worked on the kerbs.

The quality expectations were high, and HKC delivered to specifications, producing work to extremely tight tolerances of 0-10mm.

HKC are a Hunter-based company with a commitment to employing locals to construct the best possible quality results for local and international civil construction companies, developers, government departments and Councils. Other major projects have included the Olympic Village (with Daracon), mines throughout the Hunter valley

and at Kooragang, and numerous subdivisions including Fletcher, a new subdivision near Newcastle.

The company has been in business since 1986, and have an extremely solid skill-base, a reliable team, comprehensive understanding of the civil construction process and a substantial fleet of plant and equipment.

Their workforce of up to 20 includes slipform and extruded kerb machine operators, concrete finishers, truck drivers, small crane and bob cat operators, in-house mechanic, administration and the company's safety officer/paramedic. Their well-maintained inventory includes 2 Gomaco Slipformers, 15 Arrow Kerbmakers, 3 Arrow Carparkers, plant trailers, trucks with Palifinger Cranes, and 4WDs.

The capabilities they offer for major projects include Jersey Barrier Walls, kerbs, gutters and footpaths for highways, roads and subdivisions, plus industrial car parks for local developers, RMS and local Councils throughout the Hunter, Central Coast and Northern Coast regions.

For more information contact Hunter Kerb Constructions Pty Ltd, Office: phone 02 4947 4700, fax 02 4947 4400, email admin@hunterkerb.com, website www.hunterkerb.com



THE ULTIMATE ECO-FRIENDLY CIVIL SOLUTION

Recycled, redeployable and flexible enough to be engineered for highly specific applications are excellent qualities for any civil construction product, as numerous major projects like the Hunter Expressway have discovered when Ecoflex Civil Constructions brings their expertise and innovative Ecoflex Retaining wall systems (E Walls) onsite.

The E Walls have proved to be a valuable resource for the Hunter Expressway Alliance (HEA), who used them to provide engineer designed retaining walls to piling and viaduct locations throughout the site.

The E Wall units are manufactured from used truck tyres by converting them into a rock filled containment system, providing retaining walls greater than 7 metres high, with the ability to withstand load surcharges in excess of 50kpa. They are also environmentally friendly and in keeping with government policies regarding recycled products.

“Due to environmental restriction the HEA were faced with building an 8 metre wide access road for piling and crane operations whilst keeping within a 12 metre construction zone on steep hill sides that prohibited cut and fill operations,” explained Ecoflex Manager, Jim Grant.

“Over the course of 12-18 months, Ecoflex constructed over 18 walls to gain access for piling rigs and other heavy machinery throughout this challenging terrain. Other applications of Ecoflex technology which were also implemented on the project included a 5 metre high culvert crossing at V27, and Piling Platforms at V8 and P18.

“Individual engineering design of the E Wall system was required for each location, to facilitate the existing conditions and to fulfil the requirements of the HEA.”

Ecoflex Australia recycled 12,000 truck tyres, manufacturing them into Ecoflex units which are highly durable, reusable and can replace conventional technologies such as crib and gabion baskets.

“Some Ecoflex units from dismantled platforms were reused in a pavement application for Dart Energy. A larger scale example of this reusability is the Abigroup Macleay River Flood Plain Bridge Project, where Ecoflex units were reused up to 6 times in piling platforms prior to being installed in a Sutherland Shire Council permanent wall and pavement application,” said Jim.

“Ecoflex Technology is now widely accepted by government bodies nationally, and is being used in a wide range of civil applications. The environmental benefits of this system give a significant advantage over more traditional retaining systems, as the walls can be temporarily constructed, then dismantled - returning the site to its natural state with minimal impact on the ecosystem – while the Ecoflex units can then be redeployed to other temporary or permanent applications.”

For more information contact Ecoflex Civil Constructions Pty Ltd, 20 Kalaroo Road Redhead NSW 2290, phone 02 4944 7711, fax: 02 4944 9911, website www.ecoflex.com.au



EXCELLENT PRECAST SOLUTIONS FOR UNIQUE SITE NEEDS

Designing, fabrication and delivering the exact precast products required for a major project like the Hunter Expressway Upgrade in a fast-tracked timeframe requires the combination of capability, skill and innovation Aus Pits possesses. By utilizing all three of their manufacturing facilities across the East Coast, Aus Pits was able to construct over 2,000 custom made precast stormwater and electrical pits for the project within a tight thirteen-month timeframe.

A family-owned and wholly Australian precast manufacturing company, Aus Pits specialises in the supply of custom designed products nationwide to all facets of the construction industry, including major road and infrastructure projects.

“Our team is proud to have been involved with the construction of the Hunter Expressway project, and has valued working with the key stakeholders in the coordination and delivery of the two contracts,” said Aus Pits Northern States Sales Manager, Ben Wharton.

“By working closely with our clients and taking a proactive approach in design and manufacture, we ensured that construction programs were met.

“Also, through incorporating our newly developed Fiba-Struct® concrete technology, these fibre reinforced, structurally designed concrete pits provided the advantage of increased quantities being constructed over shorter periods, whilst offering enhanced durability on site.

“And because we also have the capability to tailor the design and construction of each pit individually to suit a range of site requirements, our products and our flexible approach to manufacturing assisted with meeting the milestones required by the construction programs, and eliminated the need for any on-site modification.”

Aus Pits has been providing reliable, customized precast solutions for over 30 years, and has a workforce of 124 across manufacturing facilities at Geelong, Penrith and Murwillumbah. The company is currently involved in a wide range of projects in all states of Australia, including major highway construction, mine expansions, gas plant construction, port/wharf upgrades, rail duplication/stabling projects and subdivision development. Pits have also recently been supplied to projects in Papua New Guinea.

“We can cater to any major project, no matter how complex, with our range of specific designs to suit a wide variety of load ratings, and formwork to suit a variety of applications,” said Ben.



For more information contact Aus Pits, phone 1300 408 883, email info@auspits.com.au, website www.auspits.com.au