

# ONTRACK

New MetroRail Project Update

## The big dig – more than just a hole in the ground

Work continues at the William Street platforms site

While much of the attention and interest has been centred on the tunnel boring machine (TBM), another area of the New MetroRail Project in the city has been quietly progressing and setting new records.

Workers at the William Street platforms site have now dug down to the final base level and in doing so have set a new record.

While not deep by world standards, or even Australian standards, it is nevertheless the deepest excavation ever completed in Perth.

At 18 metres deep below the Murray Street Mall, it is equivalent to the height of a six-storey building.

What makes this hole even more remarkable is the fact that it is bone dry – effectively sealed from the water table by the deep reinforced concrete diaphragm walls that encircle the excavation.

Having dug up to four metres below the Swan River level, the excavation has passed through a complete geological cross section of the Perth CBD and most likely through a former river bed.

The control of the ground water has meant that the surrounding buildings in the city, including the historic post office building, are not at any risk as a result of a fluctuation in the water table.

Dwarfed by giant steel braces and props and thick concrete slabs, workers are now in the final stages of preparing the base slab, which will be the landing point when the TBM arrives and cuts through the south wall.

The base will have special cut-outs in it to let the TBM travel through the station structure.



Suburban railcar

## Project gets stamp of approval - again

Public backing for the Southern Suburbs Railway (SSR) project is running at 85 per cent approval, according to the latest Patterson Market Research Flashpoll.

The 300-person phone poll across metropolitan Perth, conducted last month, also showed more than three quarters of

### Inside this issue

- Southern suburbs stations start to take shape
- Apprentices on the road to new careers
- Challenger Ave bridge open to traffic
- Canning bus bridge slides sideways
- Wide eyes as kids have their first rail experience
- Seeds in storage for future revegetation
- Swinging into spring in Rockingham

Continued page 4

# Southern Suburbs Railway stations

**After witnessing months of earthworks being carried out along the freeway median, motorists are now starting to see progress of station construction at regular intervals right along the Southern Suburbs Railway route.**

## *Bull Creek and Murdoch*

Construction at Leach Highway (Bull Creek) and South Street (Murdoch) is progressing well according to contractor John Holland's Project Manager Malcolm Wilkinson.

"Our main construction focus at the moment is on the bus interchange bridges at both station locations," he said.

"Work on the bridge abutments, central piers and retaining walls is currently underway.



*Bull Creek Station*

"Precast concrete beams, weighing around 120 tonnes each, will be erected in mid-February at South Street and late February at Leach Highway."

Malcolm said that the erection of the beams would be scheduled on two weekends and would require sections of freeway to be closed to allow the cranes and low loader



*Murdoch Station*

transport vehicles to deliver the beams.

A major challenge at South Street had been the successful realignment of 400 metres of 800mm diameter water main and 160mm diameter gas main to enable the construction of the bridge footings to occur.

## *Cockburn Central*



*Cockburn Central*

Arguably the most advanced site in terms of visible progress, Contractors Doric Constructions and Brierty Contractors are continuing to install platform precast panels at Cockburn Central.

This work should be finished by January along with all structural steel.

January will also see the western footbridge erected, followed by the eastern footbridges in February.

"We are very happy with progress on all five stations we are constructing," Doric Business Development Manager, Keith Somers said.

"The excellent working relationship Doric/Brierty has with NMR is certainly contributing to our team constructing the stations to the required schedule."

## *Further south*

Doric/Brierty is also responsible for construction of Kwinana, Wellard, Rockingham and Warnbro Stations.

The construction program for Kwinana, Wellard and Warnbro Stations is nearly identical. Current schedules should see the retaining walls and main footing for the stations being completed by the end of December.



*Murdoch Station*



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# are starting to take shape



Warnbro Station



Rockingham Station



Mandurah Station

“By January, people will certainly be able to see all three stations starting to rise out of the ground when erection of structural steel and the pouring of the concourse slabs starts,” said Keith.

“The construction of these three stations is running smoothly with minimal impact to the residents in the surrounding area.

“Doric/Brierty is looking forward to providing the local community with world class station facilities.”

Progress at Rockingham Station continues with the majority of the car park area now sealed. Work has started on the station platforms and preliminary work for the station building has begun.

Nearby, work on a footbridge linking Hillman and Woodbridge and the rail underpass under Elanora Drive continues with work to be complete by mid-2006.

“Dust has been a problem for some residents near the Rockingham Station site and adjoining area,” Keith said.

“All complaints are being addressed proactively by Doric/Brierty and we are keeping affected parties informed at all times.”

## Mandurah

Services and drainage work has been carried out in the car park areas at Mandurah Station site.

Trevor Date, Project Manager for Contractor JM and ED Moore said work was progressing to schedule - even if there was not much to see.

“At the moment it's just a hole in the ground, but there's a lot of activity and men working down there,” he said.

Footings for the station walls would begin shortly, followed by installation of precast platform walls.

“Working within an operating bus station, we are mindful that we don't interfere with Transperth operations,” Trevor said.

“We have traffic management measures in place to make sure things keep moving.”



# Apprentices on the road to new careers

**A strong working relationship between railcar supplier EDI Rail - Bombardier Transportation (EDIR-BT) and the Public Transport Authority has spawned four new career opportunities at the NMR railcar maintenance facility at Nowergup.**

EDIR-BT created four apprenticeship positions - three mechanical and one electrical - around 12 months ago.

The four men, whose ages range from 25 to 43, have successfully completed block courses at TAFE and finalised their first year in the job.

Apprentice Master Carl Delaney said the apprentices were older, and were generally quite responsible and able to bring life and other work experience to the job.

"They take in information very quickly so, as their competencies are achieved, we can let them run with the work on their own," he said.

Brent Owens took up the opportunity after

working at the depot casually for six months.

"I'm enjoying working with Carl and learning the tricks of the trade," he said.

"Having a trade will give me wider opportunities for work in the future."

Former carpet cleaner Michael Fry is a railway volunteer who is turning his passion into a career.

"I am loving it here," he said.

"I work with railways on weekends as a hobby and I'm always tinkering with things."

Taking on an apprenticeship has taken Brendan Coakley in a completely new direction.

Previously working in criminal law and doing police studies, Brendan said getting a trade was a good vocation.

"It's really enjoyable to see the results of your work straight away," he said.

"I am busy all day in a physical job and the time goes much quicker."

David Rebeiro is the only electrical mechanic

apprentice in the group.

Formerly a shunter at the depot, David is keen to see the real money at the end of his training.

Carl said while the depot couldn't offer every type of work experience needed for the apprentices, it could offer major mechanical components and a vast amount of electrical, electronic and software experience.

"With the trade deficit at the moment, it is good to see an employer doing something about it," Carl said.

Maintenance Facility Manager John Jones said it couldn't have happened without the PTA.

"If we hadn't forged strong relationships with Transperth Train Operations Management, then EDIR-BT would have had no future in WA and no jobs to offer"

*From page 1*

## Project gets stamp of approval - again

people surveyed believe the SSR project is "worth the money."

Effectively nine out of 10 people thought the railway would have a positive impact on the people of Perth.

"Since the New MetroRail project became part of Flashpoll surveys in December 2002, eight out of 10 people questioned have consistently approved of the railway, with support ranging from 78 to 86 per cent," NMR Media and Public Affairs Manager Peter Flynn said.

"The two highest levels of support were recorded in the May and November Flashpolls of this year."

The exact wording of the question was: "Do you support or oppose the Southern Suburbs Railway from Perth to Mandurah?"

New MetroRail uses the survey data to monitor public perceptions of the project.

It also monitors the effectiveness of the public information and communications programs carried out by the project and its construction contractors.



Apprentice Master Carl Delaney with apprentices Brent Owens, David Rebeiro, Brendan Coakley and Michael Fry.



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# Challenger Avenue bridge first to open

**The Challenger Avenue bridge in Parmelia is the first of eight new traffic bridges being built by the RailLink Joint Venture over the Glen Iris to Mandurah section of the Southern Suburbs Railway to be opened to traffic.**

During construction, motorists have been using a temporary detour which will now be removed.

As well as vehicle traffic, the new bridge caters for pedestrians and cyclists with shared paths which have barriers and protection screens on both sides.

“The contractor used precast concrete section for the abutments and deck which reduced construction time and minimised disruption to the public,” Senior Engineer, Structures, Mahadevan (Jaya) Jayabalan said.

“This bridge will be handed over to Main Roads WA for ownership and structural maintenance responsibility after commissioning of the railway line.”

Other road bridges being constructed south of Glen Iris include Thomas Road, Wellard Road, Wellard Station, Ennis Avenue, Stakehill

Road, Lakelands and Gordon Road. Underpasses at Elanora Drive (RCCTS), and Fremantle Road are also being built.



Challenger Avenue bridge

# Canning bus bridge slides sideways

**An innovative use of incremental bridge launch techniques has seen the northbound bus ramp at Canning Bridge moved 10 metres sideways to accommodate the Southern Suburbs Railway alignment.**

In a complex operation spanning several months, Leighton Contractors began by building four 10 metre temporary blade walls to support the bridge before and during the move.

The bridge deck was then detached from its columns and most of the old abutments demolished to free up the bridge.

The sideways move was carried out by sliding the bridge along the blade walls from old columns to new columns.

The bridge was placed on four sliding bearings which were pulled over by two large jacks sliding it smoothly into line over the new columns.

Using incremental launch technique to move an existing bridge was certainly a first for Main

Roads WA,” Main Roads Project Manager Laurie Spagnolo said.



“The contractors elected to use this method to move the bridge as a cost effective way of achieving their objective rather than demolishing the bridge and building another one.”

Laurie said it also meant that the impact to freeway traffic was minimal with all lanes operating while the move took place, whereas demolition would have had significant impact to traffic.

The bridge has been jacked up in its new position while permanent abutments are poured and put in place.

The old abutments and temporary blade walls must be demolished leaving enough room in the freeway median for two railway tracks.

Northbound buses from Canning Highway will use the bridge to join the right hand lane of the freeway to continue their journey to Perth.



The Canning Bridge bus bridge moves sideways



# Two new bridges closing the gaps

**With more than 160,000 cars, trucks, buses, cyclists and pedestrians crossing every day, keeping people moving is a big challenge during construction on the Narrows and Mt Henry bridges.**

The two bridges have been the major focus of construction in the northern half of the new Southern Suburbs Railway.

Leighton Contractors contracts manager Damian Ryan said bridges were particularly challenging areas for traffic management, as they could become bottlenecks for traffic.

The Swan and Canning Rivers are also very environmentally sensitive areas.

“We have had to take great care in planning every stage of construction to minimise the amount of disruption to users and the surrounding environment,” Damian said.

## Mt Henry Bridge

A new bridge is being built along the western side of the Mt Henry Bridge, overlapping the existing bridge to make the whole platform 11 metres wider.

In constructing the new bridge, eight permanent piers were built across the river to support the bridge. The piers were made of

two concrete columns, a pile cap and around 16 piles. Piles are hollow steel tubes up to 40 metres long, which were driven deep into the ground to form the backbone of the piers.

The bridge deck was built in 26 segments and slid one at a time over the tops of the piers in a technique known as incremental launching. The last launch took place in October.

The bridge's north and south abutments and freeway approach ramps are now being finished. Work is also underway to strengthen the existing Mt Henry Bridge.

In the coming months the final surface will be built on the new bridge and the northbound traffic moved onto the bridge. The rail corridor will then be built on the original bridge.

The north and south abutments will be revegetated using native trees and shrubs from the local area. All work on the bridge will be complete early in the new year.

## Narrows Bridge

A new rail bridge is being built in the six-metre space between the two existing Narrows Bridges to carry

southbound trains.

The new bridge is made from nine massive steel box girders, weighing up to 94 tonnes each and up to 54 metres long, which are prefabricated at a factory in Henderson.

A series of permanent piers is being built across the river using concrete and steel. The girders are being transported from Henderson two at a time, and lifted onto the piers with two cranes. Teams of welders then weld the girders into place.

The western Narrows Bridge is being strengthened and will carry the northbound traffic and trains.

All girders should be installed by mid-December. The southern and northern approaches and deck surface are also being built. Construction is expected to be complete early in the new year.

[The Narrows Bridge](#)



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# Wide eyes as kids have their first rail experience

**Around 65 pre-schoolers had the time of their lives at the Nowergup railcar maintenance facility recently after train driver, Dave Warren, organised a special visit for the Clarkson youngsters.**

The children, along with their 14 carers, arrived by bus and began their tour at the internal car cleaning platform. They were then shown how to access a train from the platform, the door operation and the inside of the saloon.

All train movements were stopped and the children were shown the electric arc drawn as the pantograph was lowered and then raised again.

For some, it had been their first ride in a bus and first visit to a train.

With eyes round in astonishment and wonder, they were taken on a short train ride to the end of the depot and back.

There were many prospective future drivers

as each child took turns to sound a train horn.

Facility manager John Jones said it was a successful exercise in partnering with the community.

“This is an initiative driven by a PTA employee without thought of personal reward or gain,” John said.

“EDI Rail - Bombardier Transportation was more than happy to host the visit which the children really enjoyed.”



*The Clarkson kids enjoying their special outing*

# Seeds in storage for future revegetation

**The revegetation of the Southern Suburbs Railway is a huge project which has involved the collection of 315kg of seed from up to 100 different local species.**

“The seed was collected to ensure that the character of the revegetation reflects what was there originally,” Environmental Manager Colin Stedman said.

Seed pickers from Kimseed Environmental have been gathering the seed and it is now being stored in a seed warehouse in Bassendean.

The program also includes planting 427,000 individual seedlings.

Rehabilitation works are planned for each area



*Gerry Strickland (Seed Processing Warehouse Manager) inspects seed drying in plastic hot house.*

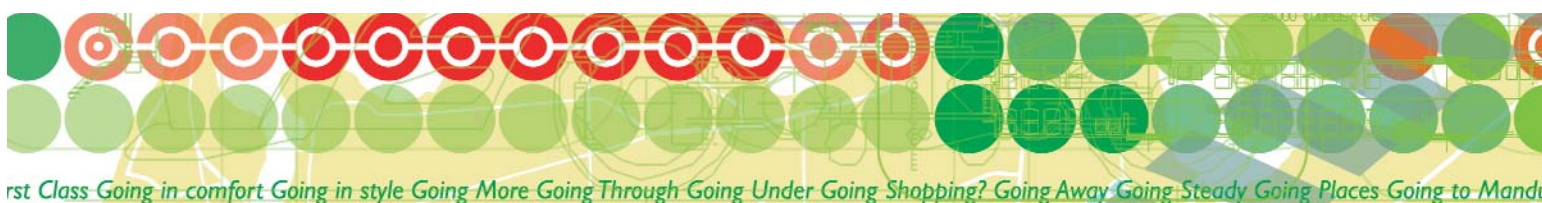
as soon as possible after earthworks, to help stabilise the soil.

The first round of planting began in winter this year. Results to date are encouraging aided by relatively good rainfall received.

“We are using indigenous species wherever possible, and we will be considering all safety requirements such as sight lines, signals, fire etc,” Colin said.

“The rehabilitated area also needs to be designed with low maintenance requirements.”

For these reasons the strategy advocates maximum use of low-growing shrubs, ground covers, sedges, rushes and twining plants but also includes medium and large shrubs and trees where the situation allows.



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# Swinging into spring in Rockingham

It was a typically warm spring weekend for this year's South Coast Regional Chambers of Commerce Rockingham Spring Festival.

As the sun shone, residents and visitors to Rockingham strolled among a wide variety of exhibitions including the New MetroRail display.

Several thousand people called in to view aerial maps of the station area and surrounding suburbs.

As the rail alignment appears on the landscape, interest is still keen on exactly where the train will be travelling and where the stations will be located.

Needless to say, the New MetroRail pocket map was popular, along with viewing of the project animation.

The New MetroRail display was housed in a marquee and the Project's two Community Information Officers - Giselle Satie and Lynda Gray were on hand to answer specific enquiries.



*Finding out about New MetroRail at Rockingham*

"The response from the visitors was very positive," Giselle said.

Keith Somers from Doric Constructions - the contractor building Rockingham station - also lent a hand with enquiries.

## First masts tested for strength

The first of around 2000 masts to carry the overhead electrical wires for the Southern Suburbs Railway have been cast and tested at Delta Concrete in Herne Hill.

The masts are a new design and will be supplied to contractor RailLink Joint Venture.

The prototype masts, made by pouring concrete into moulds, have undergone destructive testing to ensure they meet the strength and deflection requirement.

"The testing involves placing the masts into a jig to fix the base and applying a measured



*First masts being poured at Delta Concrete*

load perpendicular to the mast 300mm from the end," New MetroRail Deputy Contract Manager Package A, Colin Rowcliffe said.

"The load is increased incrementally until the mast either breaks or it exceeds the design load by more than 25 per cent.

"The idea is to ensure that the mast is capable of withstanding all expected loads without failure and that the overhead line catenary is held within 50mm of its designed position at the mast location."

Installation of the masts will start early next year before tracklaying begins in early April.

OnTrack is produced by the Public Transport Authority's Corporate Communications Branch.  
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