

# COMMUNITY UPDATE

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## WELCOME

In little over 500 days, the Victorian Desalination Project will be supplying water to Melbourne and regional communities.

It's all hands on deck as construction forges ahead.

There are now more than 2,700 people working on the project in all kinds of design and construction roles.

Hundreds of designers are working in offices all across Australia, preparing and refining the intricate design and engineering details for every element of the project.

On the desalination plant site in Wonthaggi, almost 1200 people are working to construct the 29 buildings that will turn seawater from Bass Strait into fresh drinking water.

Tunnelling crews joined the team earlier this month, following the arrival of two custom-built Tunnel Boring Machines (TBMs) from Germany.

The first of these incredible machines started work earlier this month to build the seawater intake tunnel.

Another 450 people are at work on the transfer pipeline, which will transport water from the desalination plant to Cardinia Reservoir and regional water networks.

Pipe laying started in February this year and is already 25% complete, with more than 20km of the 84km pipeline laid.

More than 3,000 pipe sections have now been delivered, ready for installation.

Power construction crews have installed more than 12km of conduit and recently started installing cable for the 87km underground power supply.

Our ability to construct the pipeline and underground power supply is proceeding swiftly, thanks to the cooperation of about 125 landowners and the people of the local communities in which we work.

Local industry continues to benefit from the project, with more than \$800 million in contracts now awarded, two thirds of them to Victorian companies.

Meanwhile, the first apprentices and trainees have joined us on the job, and out in the community, we are proud to be getting involved in a range of important projects.

All of these stories and more are covered in this Community Update, which also includes a feedback form.

We're keen to hear what you think of this publication and what you'd like to learn more about next time.

IT'S JUST OVER 300 DAYS SINCE WORK BEGAN ON THE VICTORIAN DESALINATION PROJECT. THE FOLLOWING IMAGES SHOW JUST HOW FAR WE'VE COME.

### JUNE 2009

Around 263 hectares in size, the desalination plant site has been heavily cleared over the years for mining and farming purposes.

The new desalination plant will be surrounded by a 225 hectare coastal park, including more than 4 million plants and 150,000 trees, making it one of the largest ecological restoration projects in Victoria's history.



+90 DAYS



### DECEMBER 2009

The first stage of bulk earthworks has commenced on site, including excavation of the future sites of the reverse osmosis and pre-treatment buildings.

The construction team gets to work setting up facilities for the 1500-strong workforce that will work on the project when construction reaches its peak.





## MARCH 2010

Excavation of the 27 metre deep box cut is well underway, to provide a launching point for tunnel boring machines.



The dunes that surround the plant site, ranging between six and 12 metres in height and providing visual and acoustic protection, are clearly taking shape.

Foundations are being poured on the reverse osmosis building and pre-treatment facilities, in preparation for the erection of the first above ground structure – the steel frame of the reverse osmosis building.



## JULY 2010

The building frame for the reverse osmosis building, the heart of the desalination process, is well advanced, with more than 700 tonnes of structural steel in place and the first roof components installed.

The box cut is complete and the first of two tunnel boring machines has started work, carving the seawater intake tunnel.

Tunnelling crews are working to assemble the second TBM, ready to construct the outlet tunnel.



Foundations and formwork for the pre-treatment facilities that will filter seawater are well underway, along with the supporting concrete tanks and water storage facilities.

Bulk earthworks are nearing completion, with the dunes to be planted out later in the year.





## "WONTHAGGI MAGGIE" HEADS UNDERGROUND

The Victorian Desalination Project reached an exciting milestone earlier this month, with the start of underground tunnelling work.

"Wonthaggi Maggie" the TBM started work a few weeks ago, carving the seawater intake tunnel that will draw seawater into the desalination plant. "Rocking Ruby" will begin work on the outlet tunnel soon.

A tunnel boring machine (TBM) is an underground tunnelling machine, used to dig tunnels swiftly and easily.

Tunnel boring has been used on construction projects for more than 150 years and has proven to be a safe and environmentally sound method of tunnelling.

TBM's are now used in construction projects all over the world, building everything from pipelines to huge road and rail tunnels beneath cities and the ocean.

Two custom-built TBM's have been commissioned for the Victorian Desalination Project – one to build the seawater intake tunnel, the other to build the outlet.

Each machine is around 90 metres long and weighs around 500 tonnes. They have a rotating cutting wheel at the front, followed by trailing support mechanisms, and can 'bore' through all types of soil and rock.

The TBM's operate around 15–20 metres underground, digging forward a short distance and then dragging the rear end behind.

The cutter head excavates a length of ground, which is then lined with pre-cast concrete rings, forming a watertight concrete tunnel.

Finally, hydraulic jacks push the TBM forward a short distance, before the process is repeated again.





The 'front shield' of the TBM is carefully lowered into position.



## SPOTLIGHT ON TUNNELLING PROJECT MANAGER GLYN EDWARDS

### How did you get started in tunnelling?

Some of my lecturers at university were tunnellers and my final year project was based on a stormwater tunnel along the beach. This required visiting site each week – once I'd seen a fully lit 8 metre tunnel, I was hooked, especially when operating 50 metres below the sea.

### What's it like working underground?

It can sometimes be a harsh environment, however once you get used to it, it's exactly the same as working in an office – just a little more exciting! A great bonus is you get to meet a good bunch of honest hard working people, who all know their stuff.

### What are some of the challenges of tunnelling?

Geotechnical issues are always at the forefront of people's minds, however, with the right behaviours and tools in place, tunnels are a very safe place to work.



## IT'S ALL IN A NAME

Congratulations to **Jakob Moon** and **Mycalie James**, winners of the TBM Naming Competition!

Mycalie is from Bass Coast Specialist School and came up with the name "Rocking Ruby" for the outlet TBM. Jakob is from Traralgon, the son of a Leading Hand working on the project, and came up with "Wonthaggi Maggie" for the intake TBM.

Naming of TBMs is a time honoured tradition around the world. They are usually named after a lady, as a sign of good luck for the project ahead.

"Wonthaggi Maggie" and "Rocking Ruby" are now part of tunnelling history, joining other famous TBMs like "Mary Ann" from the City West Cable Tunnel in New South Wales, and "Running Rosie" from the Epping to Chatswood Rail Link.



## VICTORIA'S NEW DESALINATION PLANT POWERED BY RENEWABLE ENERGY

The operating power requirements of Victoria's new desalination plant and transfer pipeline will be 100 percent offset by renewable energy.

This will be achieved through the purchase of renewable energy certificates (RECs) from AGL, which promotes investment in new green energy projects.

Work is already underway in south western Victoria, where AGL Energy is building a new \$210 million wind farm to provide renewable energy to help offset the power used by the project.

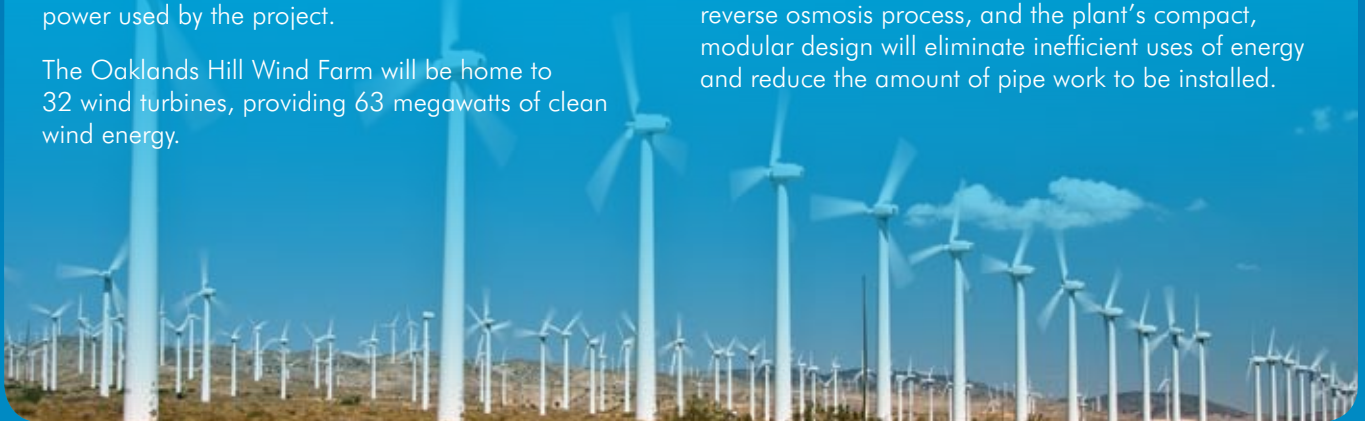
The Oaklands Hill Wind Farm will be home to 32 wind turbines, providing 63 megawatts of clean wind energy.

AquaSure has entered a 30 year contract with AGL to produce as much renewable energy as required to match the power consumption of the plant and pipeline, and inject it in the power grid.

AGL is the biggest developer of renewable assets in Australia, and currently has more than enough renewable energy certificates to meet the plant's requirements thanks to new projects like the Bogong Hydro Power Station and now, the Oaklands Hill Wind Farm.

In addition to offsetting energy use, the desalination plant features a number of innovative systems designed to minimise the plant's power consumption.

World-leading energy recovery and re-use devices will significantly reduce power required by the reverse osmosis process, and the plant's compact, modular design will eliminate inefficient uses of energy and reduce the amount of pipe work to be installed.



## APPRENTICES OFF TO A GOOD START



The Victorian Desalination Project is providing opportunities to launch careers in construction, through apprenticeships and traineeships.

The local offices of Apprenticeships Group Australia and 370 Degrees Group are working with design and construction contractor, Thiess Degrémont, to deliver an apprenticeship program.

Thiess Degrémont Workforce Trainer Allan Quinn, said the first intake of apprentices was already underway, comprising mainly carpenters and electricians.

The program will kick off with third and fourth year apprentices to ensure they have the appropriate skills and safety awareness to work on such a complex project.

"We have thought carefully about the number of positions to make available to ensure we can provide the best possible training with the right level of supervision," said Allan.

The project is also partnering with Chisholm TAFE to provide shorter-term traineeships for locals wanting to start a career in the building industry. Students undertake a Certificate II in Civil Construction which provides a pathway to future learning through avenues like apprenticeships.

"Being able to offer this sort of training in South Gippsland means we can help local people get a start in construction. It's a great industry and having those skills here will be a major benefit to the region in the long term."

*Above: Some of the new apprentices kicking off their careers on the Victorian Desalination Project.*



# KEEPING TRAFFIC MOVING

Members of the community may have noticed construction crews at work in their area, with workers travelling to and from work and trucks delivering quarry products and construction supplies to work sites.

A professional approach to traffic management is required to ensure the safety of all road users and to ensure impacts on local communities and local traffic are minimised.

Traffic management plans are developed in consultation with VicRoads and local Councils, which aim to address all aspects of traffic operations and impacts.

## Route planning

Haul routes for trucks are carefully planned, impacts monitored and changes made where required.

Appropriate times for truck movements are also defined. For example, truck movements past schools are limited to particular hours.

## Road closures

Construction crews work closely with VicRoads and Councils to schedule any required road closures at the same time as others that may already be planned. This avoids the need to close roads twice.

## Traffic management

In addition to safety signage and electronic message boards to advise of any upcoming works in a particular area, traffic management staff are in place to help guide traffic safely past work sites or through any traffic diversions that may be in place.

## Trucks on local roads

If the use of local roads is required by the project, a survey is carried out to record its 'pre-construction' condition.

The construction team is required to ensure the road is maintained to a suitable standard, and that the road is returned to its original condition when construction is complete.

A full-time road maintenance crew is on duty, undertaking repairs and maintenance as required.

In addition, project vehicles are regularly washed to minimise dirt being carried from work areas to public roads.



## Minimising traffic in local towns

Nine community facilities along the pipeline route have been established as car parking areas for construction workers.

Workers travel by bus to their work site, helping to minimise traffic on local roads.

In exchange, construction crews have carried out improvement works at a number of these facilities.

## Working together

A Traffic Management Liaison Group has been established, providing a forum for traffic management agencies and the construction team to share information about upcoming works, proposed strategies to minimise impacts on local traffic and plans for keeping the community informed.

## Keeping local communities informed

Regular traffic alerts are issued about upcoming construction activities that are likely to have a traffic impact.

These are advertised via:

- Road signage and electronic message boards
- Door knocks and letterbox drops to neighbouring properties
- Advertisements in local newspapers
- Works notifications on [www.aquasure.com.au](http://www.aquasure.com.au)
- Traffic alerts are also issued to agencies like VicRoads, which can feed information to motorists through its real time traffic management system.



# PIPE AND POWER ON TRACK

The Victorian Desalination Project involves construction of an 84km long water transfer pipeline and 87km underground power cable to supply power to the plant. Let's take a look at progress.



## POWER CABLE COMMENCES

Power crews recently started laying the underground cable that will supply power to the plant.

More than 12kms of power conduit has been laid, in preparation for the power cable to be pulled through shortly afterwards.

Community members may have noticed the bright orange conduit on the easement. The conduit acts like a 'sleeve' to hold and protect the power cable. The conduit is laid



in a trench with thermal backfill before the cable is pulled through in 1.2km lengths.

The 87km underground power supply runs from the desalination plant site to the Cranbourne Terminal Station.



## BOOSTER PUMP STATION UNDERWAY

Construction crews have recently started excavating the site of the booster pump station at Cardinia. The station will maintain enough pressure to keep the water moving on its 84km journey from the desalination plant to Cardinia Reservoir.



## FIRST QUARTER OF PIPELINE COMPLETE

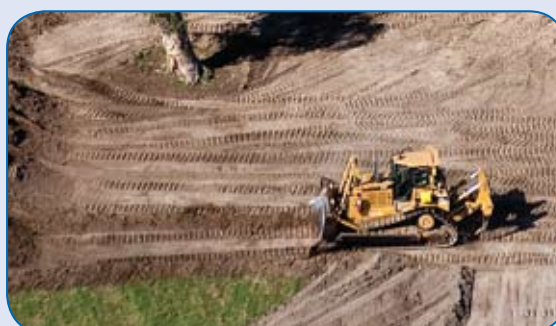
The 84km transfer pipeline is already 25% complete, with more than 20km of pipe laid.

Works started near Cardinia and are progressively moving south toward the desalination plant site.



## EARLY WORKS PROGRAM COMPLETE

Clearing, grading and fencing works are now complete along the entire length of the easement.



MORNINGTON PENINSULA

PHILLIP ISLAND

KEY

Transfer pipeline

Power cable







## A SAFER START TO SCHOOL

The journey to school is now even safer for the students, teachers and parents of Cardinia Primary School, thanks to a new pedestrian crossing and car park area.

Pipeline construction crews recently extended the school's car park and re-painted the safety crossing at the school's entrance, as a token of appreciation for their patience and support while construction is in the area.

*Cardinia Primary School Principal Allan Armstrong and the pipeline's Tom Everitt.*

## JUST WHAT THE DOCTOR ORDERED

Returning workers home fit and well to their families each day is the number one priority for the project.

On the desalination plant site, in addition to comprehensive safety inductions and regular staff training, the site is also equipped with the right people and equipment to respond to an emergency.

This includes the site's own full-time doctor, on site clinic and a team of additional staff trained in emergency response.

For Safety Manager, Max Crowther, having these services in place is an integral part of a best practice approach to safety and emergency preparedness on a major construction site.

"We hope we never have to use them, but if there's an emergency on the site, we know that we are well equipped to respond and provide immediate assistance," said Max.

"On a day to day basis, having our own resources on site also helps



minimise demand on local medical services in the community."

An Emergency Services Liaison Group has also been established, comprising representatives from Bass Coast Shire Council, Wonthaggi CFA, Ambulance Victoria, Victoria Police, Bass Coast Regional Health, Worksafe and Thiess Degrémont.

The group meets regularly to share information on safety resources and services and to keep agencies up to date with the rapidly changing nature of the plant site.

*Above: Dr Jonathan Lowther is a full time doctor on the plant site – part of an integrated approach to safety and emergency services planning.*



## INVERLOCH SURF LIFE SAVING CLUB BUILDS A NEW HOME

Thiess Degrémont has joined the many local organisations helping the Inverloch Surf Living Club build a new \$1.3 million Clubhouse.

The Club plays an important role in providing a safe beach environment and emergency rescue services for the Inverloch community and its visitors.

Inverloch Surf Life Saving Club President Philippe du Plessis said the project had galvanised support from a wide range of groups.

"Thanks to the support of the Victorian Government, Bass Coast Shire Council and companies like Thiess Degrémont, we now have less than \$150,000 to raise towards our goal."

**You can help by donating through the 'Buy a Brick' program. For more details, visit [www.islsc.org.au](http://www.islsc.org.au)**



*Club President Philippe du Plessis and Thiess Degrémont Project Director Greg Miller inspect progress of the new Clubhouse. Volunteer lifeguards work to keep over 45,000 people safe on the beach each summer.*

## HEADING TO THE COAST

While many local people have successfully secured jobs on the project, other recruits are new to the area, and have relocated to the Bass Coast to become part of the local community.



One member of staff enjoying the sea change is Paul Ritchie, Senior Project Engineer, working on the reverse osmosis building.

Paul and his family moved to the Bass Coast in January this year and are enjoying the lifestyle benefits.

In between work, Paul has found some new fishing spots along the coast, while his wife has joined a local Mother's Group and is taking some music classes.

"We've worked overseas on other assignments before, but the big difference here is that there are so many more opportunities to be

involved in the community and it's such a beautiful area to get out and enjoy."

Staff relocating to the Bass Coast area are assisted in finding accommodation through the desalination project Housing Accord.

More than 500 houses have now been listed on a dedicated housing website for desalination staff since it was established last year, as a way of maintaining affordability and availability of local rental properties and tourist accommodation.

*Far left: Paul Ritchie is just one staff member enjoying life on the Bass Coast.*

## COMMUNITY INFORMATION CENTRE NOW MOBILE!

Information and updates about the Victorian Desalination Project will now reach even more people in more communities, thanks to a new Mobile Community Information Centre.

Kitted out with the latest project news and information, the mobile centre will be a regular feature at agricultural shows and markets.

It will also be available to visit community groups and schools throughout Bass Coast Shire, Cardinia and Casey Councils.

**Bookings can be made by calling  
1800 811 214.**



The Victorian Desalination Project Community Update is a quarterly publication designed to keep you informed of the latest project news and progress as we construct the desalination plant that will help to secure Victoria's water future.

You can download the latest edition of this newsletter from our website, pick up a copy from the Community Information Centre or register your details below.

## CONTACT US

Visit the Victorian Desalination Project Community Information Centre 33–35 Murray St, Wonthaggi  
Opening hours: Tuesday–Friday 9.30am–4.30pm, Saturday 9am–12pm.



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