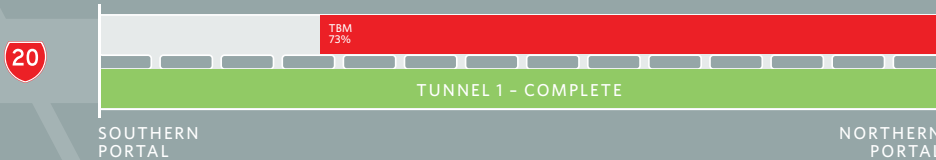


PROJECT UPDATE

WHERE'S ALICE?

ALICE'S PROGRESS



TUNNEL 2

DISTANCE TRAVELLED **1,780m**
DEPTH (TO CROWN) **29m**
No. OF RINGS INSTALLED **885**
EARTH REMOVED **292,000m³**

Mission possible – Wiri Quarry

Work at Wiri Quarry is literally piling up with over 8,000 tonnes of spoil arriving at the site each day off the back of Alice TBM's drive down the second tunnel.

With Alice surging past the second tunnel's halfway mark, our Wiri team have been extremely focused on completing their winter mission.

"We've been maximising the designated placement areas at our quarry," says Project Engineer Nick Fu.

"This involves managing the volume of spoil being tipped into the main stockpile and then placing it around the site."

The 27,000 hectare quarry has been split into 12 zones for spoil placement, with three zones set aside solely for its winter collection.

Since March the main stockpile has risen eight metres with over 450,000 tonnes of spoil being brought on to site in the past three months alone.

This has required our team of 20 to constantly move it so that there is enough capacity in the main stockpile to cope with delivery volume.

"When we move spoil from the end of the stockpile it shifts forward and lowers the height level at the tip head which provides more capacity for the grey muck to be dumped," says Nick.

Spoil compaction and drying is close to impossible during the wet and cold winter season. However our team implement windrow stockpiling (see infographic) to help with summer placement.

"Windrows assist by allowing for wind to channel through these stockpiles to aerate the material, helping to dry the moisture of spoil on the sides," says Nick.

As winter officially comes to a close, our Wiri team are on target to complete their mission at their 24 hours six days a week operation.

"It's been a very rainy season, since late March

in fact, making the material very wet," says Brett Zimmerman, Wiri Superintendent.

"But the tunnel and cartage teams have been amazing in producing spoil with less moisture content when it comes to our site. This will help us in the long run, particularly when summer comes around."

WINDROW STOCKPILING

- Spoil is taken out from the end of the main stock pile.
- Placed into windrow stockpiles in three zones of Wiri Quarry.
- Windrows vary in size - 30-40m wide, 150-200m long, 3-4 metres high.
- Wind channels through, dries the sides, giving it more aeration.



Wiri Quarry: main stockpile (dark grey spoil) and windrows (below reservoir).

Innovative hydraulic arch forms in cross passages

An innovative piece of machinery which stands five metres tall is playing a central role in the final stages of our cross passage construction.

Two hydraulic arch forms, shipped in from Brisbane, Australia, are being used to provide the final permanent concrete lining for the cross passages.

"The cross passages appear to be constructed in a straight line between the tunnels but they're actually on an angle," says Senior Engineer Colin Stewart.

"The arch forms are an innovative piece of machinery which can adjust its skew to fit the gradient between the tunnels.

Each arch form is 2.5 metre long and has expanding arms which tuck in when being transported through the tunnel to the cross passages by a 20 tonnes crane.

At the cross passages the nine tonnes arch form is placed on to a steel track and slides inside.

"When in the operating position, hydraulics are used to expand its arms into place with screwing jacks to secure it," says Colin.

"A second arch form follows suit and connects together before tothing boards are wedged in between it (arch forms) and the yellow membrane to stop any concrete from falling out the sides."

The arch forms have the advantage of having windows on either side of its arms so that when concrete is pumped into the two inlets, spotters can see the process.

Once the concrete reaches the level of the windows, they're closed and concrete pumping resumes through pump ports on the arch forms' roof.

"When the concrete reaches the top, our team will then assess it, before the arch forms are dismantled and moved to the next cross passage," says Colin.

After the permanent lining of each cross passage, the mechanical and electrical and services fitout will then take place inside.



20t crane lifting the arch form onto the steel track.



Arch form arms expanded.

Work begins to paint tunnels

Sections of the southbound tunnel are sporting a new smooth look with the application of black paint.

Painters began applying the first of two coats inside both tunnels mid-way through last month.

"A black and magnolia colour scheme has been chosen for the tunnels interior," says Section Engineer Joseph Allen.

"We've started painting from halfway down tunnel one, heading south. Once that side's been completed we'll re-start at the north end of the tunnel and work back towards the middle.

Magnolia - neutral to warm white - will be used from the roadway up to 4 metres, with black to cover the roof.

Using black inside the tunnels serves several purposes, a couple of them to do with driver safety:

- Being a circular tunnel, black avoids the 'driving in a tube effect', which can occur for drivers in long tunnels and replaces it with a rectangular shape appearance.
- Black will help to obscure mechanical and engineering equipment fixed to the tunnels' roof,

which reduces driver distractions.

- It will also help with a clean appearance inside the tunnels.

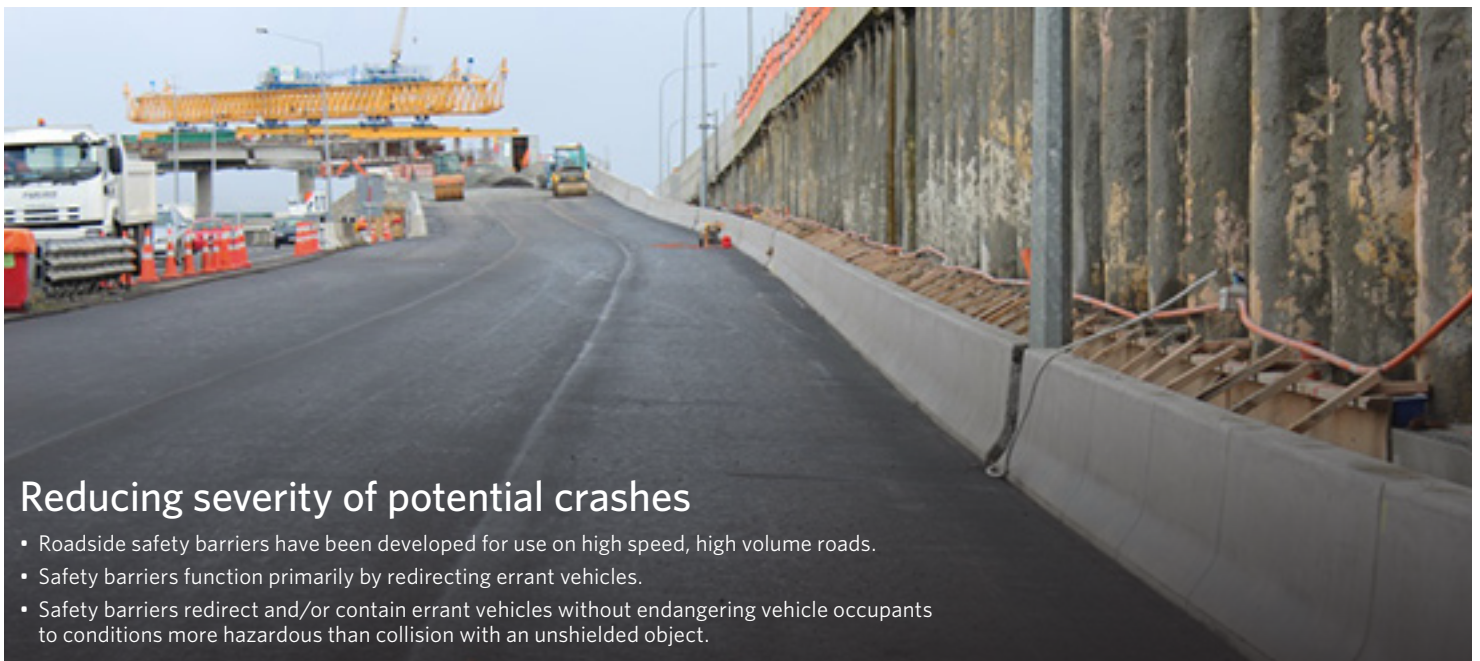
The tunnel lighting and reflective wall finishes inside the tunnel are known to influence driver's sense of well-being and support safe driving. Magnolia achieves the best light reflectance levels necessary to meet the lighting design requirements for safety and minimizes energy usage.



A BIG PAINT JOB

88,531.08M² ON THE ROOF.

48,293.2M² ON THE WALLS.



Reducing severity of potential crashes

- Roadside safety barriers have been developed for use on high speed, high volume roads.
- Safety barriers function primarily by redirecting errant vehicles.
- Safety barriers redirect and/or contain errant vehicles without endangering vehicle occupants to conditions more hazardous than collision with an unshielded object.

Installation of northern back-up power supply

Amongst all the hustle and bustle of our Northern site – vehicles coming in and out, work at the Northern Approach Trench and ramp four on its way to completion – a smaller but key work exercise is taking place.

The installation of 550 metres of ducting for the back-up power supply to the tunnels is in progress with over 50 metres laid so far.

Put down within the vicinity of NZTA land, the ducting will extend from the corner of Great North Interchange (below ramp one) adjacent to Oakley Creek, running around the wetlands along the road alignment before going through the site to the Northern Approach Trench.

“The critical element in the preparation of work area is to ensure the ducts are laid at a depth where we can achieve 900mm of minimum cover for future ground levels,” says Site Engineer Ahmed Shah.

“We also need to locate any underground

services prior to any digging and thrusting along the alignment.”

The northern ducting installation is being done in five sections with one section complete.

WORKING SAFELY IN A TRENCH

- 22kV (kilovolt) ducts will be laid within a trench shield on the Great North Road side.
- A trench shield will be used to protect person working within the trench.
- A trench shield is a steel or aluminium structures used for protecting utility workers while performing their duties within a trench.

Roadside safety barriers go in

Traffic coming down ramp four towards the city won't occur till early 2017, but the road safety barriers off the end of the ramp have already gone up.

450 metres of the roadside safety barriers heading eastbound (to the city) was finished on the Point Chevalier side of SH16 in mid-August.

Electrical ducts have been laid along the length of the barriers to provide electricity for permanent lamp posts and lighting for gantry signs that will function when the tunnels and ramps carry vehicles.

Roadside safety barriers on the Unitec side of SH16 will begin to be installed next month (November) with temporary barriers to be removed after the new barriers are established.

WCA celebrates Daffodil Day

The Well-Connected Alliance celebrated Daffodil Day with a week of events to promote awareness and raise money for Cancer Society.

A lunchtime quiz, an International Lunch, speakers at all eight of our project's Toolbox Talks (site meetings) with some of our WCA people sharing personal stories about their experience living with cancer.

The week concluded with WCA people wearing yellow and blue and their daffodils on the official Daffodil Day to support the great work of the Cancer Society.

100% of the proceeds received during the Well-Connected Alliance's week of events will go directly to the Cancer Society.



Coloured line shows ducting route for the backup power supply.



Some of our WCA people get an early start on the International Lunch.

Meet Justin Newcombe



Occupation: TV Presenter.

Lives: Waterview.

Married to Anna, two children.

You're a TV presenter, where can we watch you on telly? I present two shows called 'Get Growing' and 'Full

Frontage' on Choice TV. 'Get Growing' is a garden and lifestyle show about creating beautiful garden spaces with our team of presenters offering practical advice and innovative ideas to viewers. 'Full Frontage' involves me and my team transforming the front yards of homes around New Zealand to dramatically improve its street appeal and help owners get the possible sale price after an initial appraisal of the property.

So you're a landscape designer by trade?

No, I'm actually an artist. When my wife Anna and I shifted into Waterview 18 years ago I started a business as a landscaper. I educated myself in my spare time in landscape design and taught myself how to draught plans and the business grew from there. I started working on residential properties, public spaces and schools - winning a few awards along the way. It certainly helped that I attended art school.

Art school, what was that like? It was amazing! I always wanted to be an artist and left high school early to pursue that goal. I attended ASA (Auckland School of Art, now AUT University) where I met my wife and studied the Bachelor of Visual Arts. It was located in Grey Lynn and its campus was spread out across the suburb and included the old Ponsonby rugby club, two factories, two old villas, and an old mechanic garage. It was a very inspiring and fun little world to learn in, where we enhanced our skills by making lots of stuff.

So it's no coincidence that we conduct this interview in an art studio? (Laughs) This house has been set aside for development by the NZTA, and I was fortunate enough to have it opened to me on a temporary basis for use as an art studio. It's nice to have a space to spread out our art stuff and draw and paint which you can't really do at home which is a family space. It's also a bonus that's close to Waterview Primary School where my daughter attends and that I can cycle here.

And close enough to The Waterview Coffee Project (TWCP) too. How did you get involved with that? Yes, I can cycle there too (laughs). TWCP originally opened in late 2013 and I was working there part-time. When the old owner wanted to sell it I thought that we needed to keep

it going and luckily there were some of other locals who thought the same way. So a team of five investors pulled together our resources to keep it open.

A community owned café located in the heart of Waterview (Davenport Street). Yes, our team aim to serve great coffee to our community but it's also a nice little hub for locals to connect, interact and kick-start community initiatives such as a bake sale for the Waterview Kindy, a Garden Market and a concert with Kiwi musician Sam Allen. I think one of the great things about it is that many of the people that go there for their coffee are now friends of mine or my wife which is pretty cool.

Did your artist roots lead you to shoot a film about the area? Yes, for my wife and I being artists, we love turning ideas into plans, creating things, working hard and being busy. We had this feeling that Waterview was going to change, not just because of the Waterview Connection project, but the people, places and spaces were going to look different in the coming years. We decided the best way to capture the soul of the place was through a camera lens, so we bought some filming equipment in 2012 to do just that. Having been involved in television for a number of years, and our personal experience with photography we taught ourselves how to use the equipment to a competent level.

What's the film about? The film tells the story of the forgotten suburb, Waterview, and the motorway project coming into the neighbourhood. It records the initial opposition to the project, community protests, social demographic changes, but also the change in sentiment. The film is shot on location, on the corners of Waterview streets and in local houses but it's a story that transcends the project and is relatable to an audience anywhere in the world.

Who stars in it? We interviewed local people that we have known for a long time. All are 'stars' are regular Kiwis who are frank, honest and speak their mind about the community changes that are happening in their neighbourhood. They're amazing characters unique to Waterview. There's also a cameo from a professional guy from Parnell that stopped by our filming to see what we were doing. Wearing a floral shirt and sporting a slick haircut he ends up filming a piece to camera and his comments are about the area certainly contrast with our locals.

When can we expect to watch the film? It's currently in post-production at the moment but our plan is to release it in the NZ film festivals, and then promote it around the world. We're aiming for a late 2016 release although no final date has been set.

#BuildCommunities Photo Competition Winner

Congratulations to **Margie Watson**, our winner for the #BuildCommunities Photo Competition. Margie's entry, a photo taken at Howlett-Waterview Esplanade, captures the Well-Connected Alliance goal to build communities. The improvement of the Howlett-Waterview Esplanade is a local amenity that is helping to strengthen community identity in the area.

Margie has won a tunnel tour for her and three people.



Margie Watson's winning photo.

ROAD CLOSURES AND TRAFFIC CHANGES

- Night closures to continue at the Great North Road and Carrington Road intersection. Road users intending to access Waterview from Point Chevalier will need to follow detours along Carrington Road.
- SH16 westbound closures at night between the off and on ramps at Great North Road Intersection. Road users heading west will be required to exit at the Waterview off-ramp before re-joining SH16 at the Great North Road westbound on-ramp at Waterview.
- During September there will be closures at night on SH16 eastbound between Great North Interchange and St Lukes Road for work at the Waterview Connection and St Lukes Upgrade project.
- Further down SH16, the Causeway Alliance project will be deconstructing the Patiki Road cycleway and pedestrian overbridge to replace with a new underpass. The cycleway will remain open during this work although there will be a detour in place to redirect users around the construction area. Drivers and cyclists are urged to take extreme care around the detour and for cycleway users to cross at the marked pedestrian island along Patiki Road.

Friends of Oakley Creek Community Tree Planting

The last main planting of the year in partnership with the Well Connected Alliance.

- Sunday 6th September 2015
- 10.00am-12.00noon
- Meet at the west side of the creek - access from mown track, west of Plane Tree Bridge (see map below).
- Bring your family and/or friends, wear sturdy footwear, and bring a spade - if you have one.
- Refreshments provided.

For more information contact: Wendy - 09 815 3101 / 027 232 6454.



Waterview Connection

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PROJECT WEBSITE www.nzta.govt.nz/waterviewconnection
FOLLOW THE PROJECT ON FACEBOOK www.facebook.com/AliceTBM
WATCH VIDEOS ON YOUTUBE www.youtube.com/wcnw

Contact us at info@wellconnected.co.nz if you would like to receive Project Updates by email