



# Ruby Bay Bypass Project Newsletter

ISSUE 4  
OCTOBER 2009



The new Dominion Road culvert nearing completion.



The Tasman culvert clearly showing the new stream diversion flowing through.

## Project progress

Working through the winter period, although frustrating at times, has been a success for the project with the earthworks programme still on schedule.

Normally, earthworks for large road construction projects stop during the winter period and begin again when ground conditions improve with the onset of spring. However the Ruby Bay weather this year has allowed the earthworks to continue, albeit at a reduced level and significant progress has been achieved. But, just as we thought that spring weather conditions had settled in, recent heavy rainfall means September has been the wettest month since the project began!

Despite this, excellent progress is still being made on the various areas of work throughout the project site.

### Earthworks

Earthworks beside Old Coach Road from Gardner Valley Road through to the Council water tanks are nearing completion and we will soon be installing utility and stormwater drainage services through this area. (The relocation of the overhead power network has already been completed at Seaton Valley Road, Old Coach Road and Gardner Valley Road intersections.)

Earthworks have recently started alongside Chaytor Road and although this work has been hampered by the initial bout of bad weather the haul trucks are moving again and will be crossing at Chaytor and Old Coach Roads regularly for the next few weeks or so.

Concentrated earthworks at the Tasman end of the project has given substantial progress to the road formation, and the Field Creek has been relocated onto a new alignment so that the bypass formation can be completed. The earthworks equipment will return to the Apple Valley Road West area during October to resume filling at Trafalgar Road and also at Dominion Road once the Higgs Reserve culvert is completed. The Dominion Road culvert has recently been completed.

### Drainage

The last section of the new Field Creek diversion, which required the reconfiguration of the Tasman Fruit Packers irrigation pond, is finished and the stream diverted. Aquatic life has been captured and relocated from the old Stream channel which has now been cleaned up and filled to form the new road.

*continued overleaf*

We have been landscaping and planting along the banks of both Field Creek and Dominion Road streams and we are looking forward to local school children coming along in October to help finish off the planting in some of these areas.

The upstream and down stream extensions of Trafalgar Stream culvert have both recently been completed, with rock protection in place at the culvert's inlet and outlet and the stream returned to its original course.

Surface water cut-off drains have been installed alongside Dicker Road above the cut batters (slopes). This is to prevent water run-off scouring the slopes and to provide a physical barrier to separate road users on Dicker Road from the cut batters.

### Roading

A further 800m of subgrade and sub-base pavement has been laid in recent months and as the days get longer and drying conditions improve we will continue to make good progress.

## FYI

Information about the project is on display in the Tasman District Council Richmond office foyer.

# The Dominion Road Culvert

As well as allowing the stream to flow beneath the new road, the Dominion Road culvert will have pedestrian access through it when complete.

This series of photos shows the structure through the various stages of construction.

It will not be long before earthworks cover the culvert ready for the new road to be formed above.





**Andrew Quinn is NZ Transport Agency, Project Team Manager based in Wellington.**

Andy's role on this project is to ensure that the team achieves consistently high standards of excellence in design and construction and in doing so meets the expectations of our customers i.e. road users, stakeholders and the community. Responsible for the planning and delivery of all State Highways projects in the upper South Island, Andy gets to see quite a bit of the beautiful Tasman Region on a regular basis.

Emigrating from the UK in 2003, where he worked on major infrastructure projects with Railtrack, Andy joined the NZ Transport Agency in 2007 as Regional Projects Manager for the Wellington, Nelson, Marlborough and Tasman regions.

Andy lives in Strathmore, Wellington with his wife Cate (from Christchurch), son Alex (7) and daughter Niamh (3). They love State Highway 60 so much they taken their last two summer holidays travelling along it. Last year it was Milnthorpe, the year before Torrent Bay and this year just for a change it's Tata Beach!

Andy's other passion is the beautiful game (soccer that is) and if he's not cheering on the Phoenix at home in Wellington its West Ham United from the UK via Sky TV. His money's on the All Whites to edge past Bahrain in the World Cup Qualifiers on 14th November and he'll be at Westpac Stadium for that one.



**Opus Design Draughtsman Bruce McDowell has more than 30 years' experience in roading design.**

The majority of it spent on some of the region's largest projects such as Hope Saddle South Realignment, Brightwater Bypass stages 1 and 2, Whangamoia North Realignment and, more recently, Stoke Bypass.

One of Bruce's most difficult tasks on the ruby Bay Bypass project has been to design the three main intersections so they are as safe as possible. This means avoiding crossroads, ensuring correct sight lines for visibility and creating auxilliary lanes so turning vehicles are out of the main stream of traffic.

Bruce is particularly pleased with this project as his designs are being transformed into reality very smoothly, with little need for any redesign work.

Married with two adult children, Bruce can often be found at the local race track willing his own harness-racing horse to win. A love of the sport was instilled by his father from a young age, something Bruce has obviously passed on to his own son who now trains and races horses for a living. In fact, he trains Bruce's own horse which is doing well but apparently not enough for Bruce to be giving up his day job just yet!



**Kevin J Smith is Downer EDI Works Senior Contract Manager on the project principally responsible for drainage.**

This has meant overseeing the construction of seven major culverts and three pedestrian underpasses. As a few of these are located in estuarine areas, the work has been environmentally sensitive and Kevin says the team have had to be very creative in the programming and planning of the work to ensure maximum protection of the local area.

In order to solve some of the problem of diverting water clear of the work site they have been using an AquaDam with great success (see - next page).

As a Civil Engineer, Kevin worked on a variety of projects in his home state of Colorado, USA and it was there he met his wife Pamela. Although Pamela was from Dunedin, when it came time to settle back here they decided on the warmer climes of the Tasman district, investing in a local Boysenberry Farm as their base.

This lifestyle keeps both of them pretty busy, especially with Kevin working on the project full time, but there is always something going on at the farm and they love it.



**Another Kevin on the project is local man Construction Supervisor Kevin Tasker.**

His family have lived in the area his whole life and he and his wife are delighted that their two boys look like staying around too as they settle into local apprenticeships in plumbing and metalwork. They obviously take after their father who is more than practical, able to turn his hand to any of the tasks on site.

Kevin started out with the Ministry of Works back in 1981 wielding a shovel and stop/go paddle. As the years have gone by, and the Ministry has morphed into its various guises and name changes, he has worked his way up through chargehand, foreman and now supervisor. That's as far as Kevin wants to go as he loves being out on site. His experience means that when someone is away he can step into the cab of a grader or digger and the works goes on.

Kevin and his wife Jo also have a small 100 acre farm, where they rear 60-90 dairy beef steers at any one time. They originally reared bulls but with Kevin being away on site they were too stropky for Jo to handle on her own.

The farm gives the family a balanced lifestyle, which they all enjoy, and provides the prospect of a relaxed retirement for Kevin and Jo in the years ahead.

# AquaDam

When faced with the problem of removing water from the work area around the new culverts being built on site, project engineer Kevin J Smith knew the solution, and was responsible for the use of an 'AquaDam' for the very first time in New Zealand.

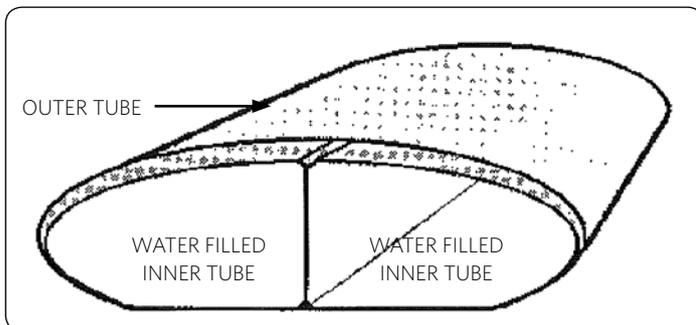


The AquaDam in action holding back the stream



The work area remains dry on the other side of the AquaDam.

AquaDams are portable dams filled with onsite water. They consist of an outer tube made of heavy duty material and two inner tubes; this diagram shows a cross section of a typical filled AquaDam.



A 1.8m AquaDam has been used; which can hold water up to 1.42m high and spreads to 4.2m wide. The one used around Field Creek culvert was nearly 130m long.

An AquaDam is installed by pumping water into the two inner tubes. The outer tube confines the water-inflated inner tubes. The AquaDam remains stable and can support water on one side because of the weight of the water inside the tubes and the friction and pressure between the two inner tubes and the outer tube. Due to the flexibility of the material used, these dams mould to most surfaces, providing an excellent seal and keeping water seepage to a minimum.

Normally we would use earth bunds-dams or metal piles to hold back water but AquaDams proved to be an ideal piece of equipment to use for this particular site since they are environmentally friendly.

Although AquaDams can be installed on top of most types of soils or flat lying bed rock, the site must be flat, and clear of sharp objects,

such as wire and tree branches, which would otherwise pierce the dam. The riverbed should be relatively flat or slope upstream. The area must also be free from holes, obstructions or washed out areas that may cause problems.

One of the work areas and stream diversions is very close to Field Creek in Tasman. The adjacent estuary hosts the Banded Rail and various other species of fish, bird, insects and crustaceans. The surrounding wildlife makes this area particularly sensitive to environmental change and so care has been taken to minimise the disturbance of the stream and sediment levels in the water.

The AquaDam was installed around the work area by filling it with water from the nearby Johnstone pond. The 130m AquaDam stretched from the Johnstone pond weir, through the old Field Creek stream channel, into the temporary channel, around the work area, back over the old channel and to the footpath access from Harley Road. The dam provided approximately five metres of space around the work site for machinery to move and create a safe working area.

The dam was checked routinely to make sure there were no leaks in the dam itself, or flowing underneath it. Also, close attention was paid to the water level held against the dam, to insure it did not exceed the recommended height.

Once the new culvert was complete, the water in the AquaDam was slowly released into the estuary and the AquaDam rolled up and removed. At this stage the stream was redirected into its permanent bed.

The AquaDam has been so successful on the Ruby Bay Bypass project that Kevin believes it will be used on many more projects throughout New Zealand.

## Who to contact:

If you have any queries call us on 0800 RUBYBAY60.

For more information

Andree Kai Fong

Phone: 04 894 5211

Email: andree.kaifong@nzta.govt.nz

www.nzta.govt.nz

New Zealand Government