This 4th VfM booklet contains
41 Value for Money Stories
contributed from across the country in the
3 months ending August 2012.

Take a look and if you want to learn more, email or call the contributor, or just make use of their idea!
They are sorted from South to North.

If you have a VfM Story that you would like to contribute, please email one of the following for a blank slide.

Auckland/Northland Tony.Fisher@ama.nzta.govt.nz

W/BOP michelle.parish@nzta.govt.nz , or talk to Richard Young

Central - Andrew.Adams@nzta.govt.nz

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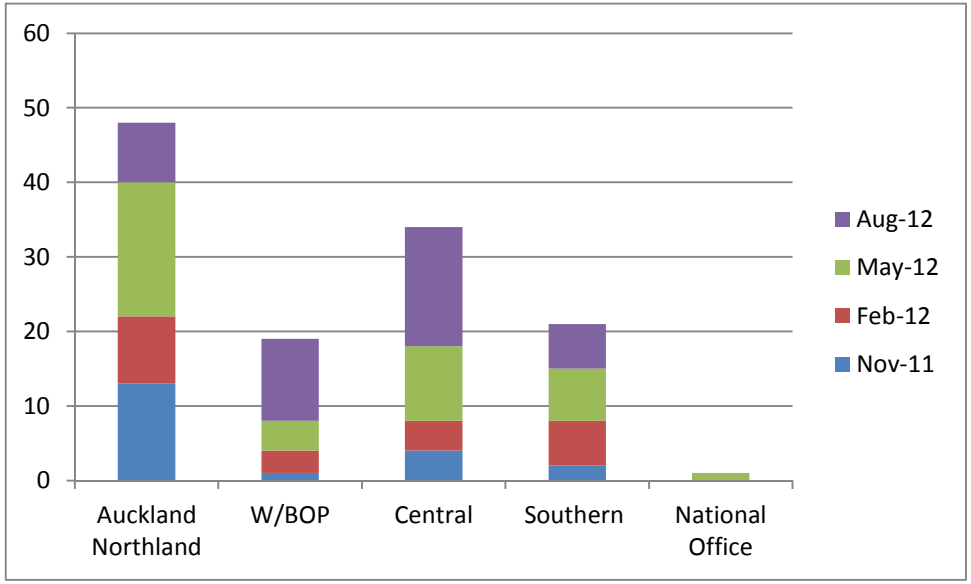


To date we have received 123 Value for Money slides.

Value for Money Initiative: S16: Innovative P/4 Resurfacing - Polymers

Opportunity

With maintenance and renewal budgets under pressure for efficiency savings, it was appropriate to closely examine the seal designs being used to ensure we were investing wisely in appropriate treatments, as the reseal budget represents our largest budget.

Solution

South Canterbury being a P/4 contract, has allowed us to experiment with the use of polymers within our emulsion binders. With the need to extend life cycles of reseals as far as we can, the addition of polymer on high demand sites such as those prone to ice/snow, or those with cracked surfaces, has resulted in increased seal lifes.

Estimated Costs & Benefits

The cost of adding a polymer is only 25 to 50 cents per litre, so an increased cost of between $3k to $7k per km of seal. However, the reduced maintenance cost over the life of the seal, and extended life obtained from the reseals is significant. Current average seal life in South Canterbury is approximately 12 years.

Contributors

Albert Su (NZTA) and Bevan Sandison (Opus)

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: S17: Innovative P/4 Resurfacing - Fabric Seals

Opportunity

With maintenance and renewal budgets under pressure for efficiency savings, we were required to defer AWT sites and attempt to reseal sites that had reached their end of life, to get one more seal cycle out of them. Often these sites had severe cracking and flushing in wheel tracks due to unstable seal layers and weak pavement layers.

Solution

South Canterbury being a P/4 contract, has allowed us to invest our resurfacing funds (including savings from other innovative low cost treatments) into innovative seals for these deferred AWT sites. Higher cost reseal treatments utilising fabric seals have allowed us to successfully seal what would otherwise have been short life reseals.

Estimated Costs & Benefits

The cost of a fabric seal in wheel tracks adds approx $16 per lineal m of seal, or approximately $16k per km of seal. However, this is cost effective if the AWT is deferred successfully for 8 years with little maintenance expenditure.

Contributors

Albert Su (NZTA) and Bevan Sandison (Opus)

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: S18: Reduced Spray Rates in Wheel Tracks

Opportunity

With maintenance and renewal budgets under pressure for efficiency savings, it was appropriate to closely examine the seal designs being used to ensure we were investing wisely in appropriate treatments, as the reseal budget represents our largest budget.

Solution

South Canterbury being a P/4 contract, has allowed us to accept different risk profiles and try innovative lower cost treatments. One example is the reduction in spray rates in wheel tracks, through pre-spraying course un-trafficked areas, and spraying a lighter application rate in wheel tracks.

Estimated Costs & Benefits

By reducing the spray rate in wheel tracks by up to 20%, we are directly saving money though reduced bitumen use (approx $1.2k per km), whilst helping to minimise long term flushing reducing ongoing maintenance costs.

Contributors

Albert Su (NZTA) and Bevan Sandison (Opus)

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: S19 Enhanced safety for road to Airport

Opportunity

SH86 gets travellers to and from Dunedin and the Airport Boundary, but the last 1.5km of the access road is privately owned by the airport and is not part of the State highway network. There was an opportunity to use our resources to cost effectively apply CMA de-icing agent on this main access road for the Airport Authority at the same time as we de-ice the State highway.

Solution

We agreed to get our maintenance contractor to spray CMA de-icer on the airport road each time they apply CMA to the State highway.

This was a very cost effective solution for the airport as they did not have access to the chemicals or the resources to apply it. The Airport are meeting the additional costs incurred by NZTA.

Estimated Costs & Benefits

Cost neutral for the Agency and the benefit is a safer ice free carriageway all the way to and from the airport terminal drop off point and car park area. In the past the last 1.5km could be icy and posed an inconsistent level of service and higher risk to customers.

Contributors

Dunedin Roger Bailey, NZTA and Paul Jamison, Downer

Highways Strategic Priority	Impacts
Safe Journeys	Yes
Efficient & Reliable Journeys	Yes
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: S20: Cost effective speed management

Opportunity

The Allanton community on SH1 south of Dunedin has a posted speed limit of 80km/hr. We were constantly receiving complaints about most motorists going above the speed limit, creating several near misses at a main intersection within the community.

Solution

We considered the situation and decided to install an advanced speed warning sign at both entrances to the Allanton community. These were placed 150m prior to the existing posted speed limit signs.

Estimated Costs & Benefits

Although not measured before and after, the solution appears to have been so effective that we have been congratulated over our proactive approach to managing speed at this particular site. It is amazing that such a simple initiative can have a profound impact on speeding behaviour.

Highways Strategic Priority	Impacts
Safe Journeys	Yes
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	No

Contributors

Marcos Santana, Acting Senior Asset Manager, Coastal Otago.

Value for Money Initiative: S21: Winter Road Reporting Collaboration in Queenstown

Opportunity

NZTA have a new maintenance contractor in the Queenstown area and there were initial concerns from the local Council about the co ordination of winter road condition reporting. There were also concerns that the winter road reporting system focused on only on State Highways. The Council wanted to improve the information to customers on key local roads as well. This was an excellent opportunity to take a "One Network" approach for the benefit of our customers and work closely in collaboration with our TLA partners in creating a solution.

Solution

The QLDC took the initiative to deliver a combined Local Road and State highway Winter Road Report every morning at 6.30am to give everyone a snapshot of the overall situation.

Queenstown Lakes District Council and NZTA worked closely together to come up with a simple but very practical Road Condition reporting system that has received very positive feedback by all road users and media.

Estimated Costs & Benefits

There has been very minimal cost to both QLDC and NZTA for this added value to our customers which cannot be converted into dollars.

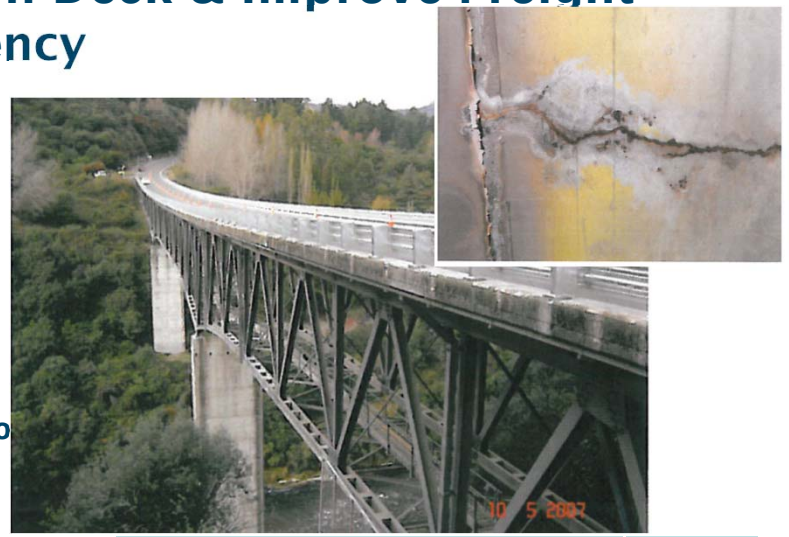
It ticks all the boxes to enable our customers to more safely enjoy the winter activities that NZ's leading tourist destination offers at this time of the year.

Highways Strategic Priority	Impacts
Safe Journeys	Yes
Efficient & Reliable Journeys	Yes
Social & Environmental Responsibility	Yes
People & Processes	Yes
Efficient Delivery of Works	Yes

Contributors

John Jarvis NZTA and Denis Mander of QLDC, Fulton Hogan and Downer.

Value for Money Initiative: C19 Strengthen Deck & Improve Freight Moving Efficiency



Opportunity

Cost savings through technical solutions which extend deck life

- **Consultation with Transportation Industry to increase awareness and publicise opening of HPMV route**

Solution

- **Water proofing of deck and resurfacing**
- **Crack injection and Carbon fibre re-enforcing sheets applied to the deck**
- **Tight budget controls to manage project within Annual $'s**

Estimated Costs & Benefits

Potential Savings of $2.3M compared to full deck replacement

- **Reduced disruption to traffic during construction works**
- **Earlier opening of HPMV route, enabled by proactive maintenance**

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

Napier NZTA and Opus Bridge Team – Dale Nicholls :Network Operations

Value for Money Initiative: C20 Protection of Works using the CVIU

Opportunity

Working closely with CVIU to help protect construction works and reduce the likely hood of failure of a technical solution to bridge strengthening

Solution

- **CVIU undertaking a focused campaign on truck weights during the construction period**
- **additional pull off bays identified to assist with truck weights**

Estimated Costs & Benefits

- **The reduction of risk of failure of construction works.**
- **Improved communication to Heavy transport operators of the operations we are undertaking**
- **Improvement in industry compliance noted by CVIU**

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	Yes
Social & Environmental Responsibility	Yes
People & Processes	Yes
Efficient Delivery of Works	Yes

Contributors

Napier NZTA and Opus Bridge Team –Dale Nicholls :Network Operations

Value for Money Initiative: C21 Pavement Recycling

Opportunity

Cheaper, cost effective, whole of life renewals

- **Collaboration and QA onsite during construction**
- **On going savings (particularly as asset life is extended)**

Solution

Appropriate design, supervision, and risk sharing to provide a low cost solution to pavement renewals

- **Uses significantly less and lower quality granular material than conventional, reduces cut to waste**

Estimated Costs & Benefits

Minimal Design inputs, quick operation with recycling one day then sealing the next – reduces traffic disruption

Annual Efficiency gain of $70,000 per year. (840K to date)

Design/Asset life has moved from 4 years to 18 years

Contributors

Napier NZTA and Opus – Dale Nicholls :Network operations

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	Yes
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: C22 Reducing Grass Mowing frequencies

Opportunity

To reduce maintenance costs without compromising safety on the network.

Solution

Contract model has moved to a measure and value funding, where the contractor is instructed to undertake packages of work. Decreasing the number of mows, and therefore accepting longer grass heights, has reduced our costs.

Estimated Costs & Benefits

Cost savings of approximately $83k per year
- **no significant adverse public comments**
- **Safety has not been compromised**

Highways Strategic Priority	Impacts
Safe Journeys	Yes
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

Napier NZTA and Opus – Dale Nicholls Network Operations Napier

Value for Money Initiative: C23 Brush Retaining Wall vs Sheet Pile Wall Dillons Hill Realignment

Opportunity

In the 09/10 construction season a drop out (30m x 6.5m) removed a length of farm track running along side the re-alignment. The project was committed to maintaining the farm track and managing the likely hood of future drop outs eating into SH5.

Solution

Earlier in the year at a different chainage, a similar sized drop out crossed the edge line. Under emergency works a sheet pile wall was constructed (30m x 4.5m with 20m tiebacks) at a cost of approx $350k.

Since this most recent drop out was not an emergency I decided to take the calculated risk of constructing a brush retaining wall instead of the more conventional solutions (gabion, sheet pile etc.)

Estimated Costs & Benefits

Conventional retaining wall + drainage = $350k + 38,7k = 389k

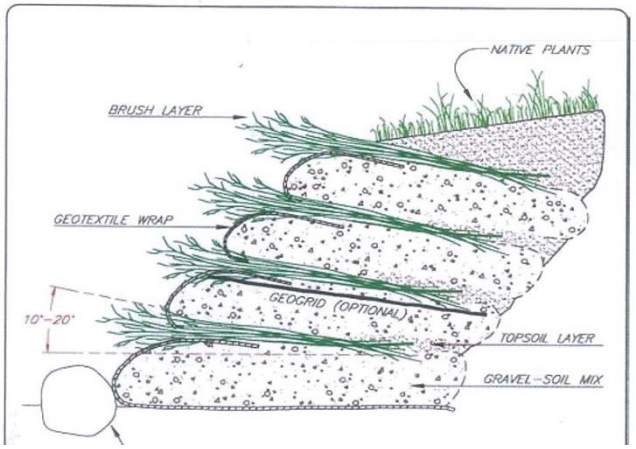
Brush Retaining wall + stock fence = $60.1+10k = 70.1k

Approx $300k saving or 420%

Note: savings in design costs and exploratory/investigation work not assessed.

Contributors

Simon Barnett PTM Napier Region



Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	Yes
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: C24 Provide HPMV capacity at least cost on the Petone Overbridges.

Opportunity

The Petone Overbridges off State Highway 2 are the direct route from Wellington to the Seaview Fuel tanks and industrial area. The on ramp bridge was deficient in capacity due to the condition of the outer beam.

Solution

Installation of delineation posts across the RAMP bridge to direct all heavy vehicles and in particularly the HPMV vehicles to the centre of the bridge away from the weakest beam. In addition the posts emphasised the cycleway on one side of the ramp bridges adding to cyclist safety.

Estimated Costs & Benefits

$15,500 for duraposts installation. Other options $60,000 for fibre wrap of beam. $1.0M+ for bridge replacement. Least cost option chosen.

Benefits: Route to Seaview industrial area available to HPMV operators. Protected the structure from loading on the "at risk beam". Added safety delineation for cyclists

Highways Strategic Priority	Impacts
Safe Journeys	Yes
Efficient & Reliable Journeys	Yes
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

Dave Robertson – Wellington HNO network operations team

Value for Money Initiative: C25 A Robust submission through the EPA and Board of Enquiry

Opportunity

The Consultants for the consenting phase for the Wellington Inner City Improvements (RoNS project) are preparing submissions for approval by the board of Inquiry (BoI). NZTA require these to be robust with a high certainty of approval

Solution

The design and construction will be carried out by an Alliance. Two potential Alliance groups were selected on non-price attributes. Both provided peer review and independent advice on form and constructability of the project. This information will be used to provide a very robust submission to the BoI. Later these two groups will compete against each other to become the Alliance that will deliver the project.

Estimated Costs & Benefits

Cost approximately $180k to each group.- predicated savings will be in millions.
The'smarts' from each group will be captured in the submission so this should avoid having to go back to the BoI for any changes in consent conditions- and include large savings in bridge form using steel/concrete as opposed to insitu concrete as suggested in initial scheme proposal

Contributors

Andrew Smith, Richard Quinn, Gavin Gregg and Hannah Hyde

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	Yes

Value for Money Initiative: C26 Creating a Regional Value for Money Working Group

Opportunity

A opportunity was identified within the Wellington Regional Office, to develop a regional culture of value for money behaviour. This group supports the National VfM VAT goals.

Solution

A working group was established, to include one member from each of the Highways and Network operations teams within the office. Their brief is to encourage teams to share their good practice and to question their decisions by adding a value for money test. A trophy (see right) to be awarded to the best value for money idea in the Central Business Unit each quarter. The winning team also receives a morning tea shout from the SH Manager.

Estimated Costs & Benefits

The cost savings are hard to quantify, as they will be spread across most activities in the office. If each member of staff starts applying the value for money test on each dollar spent, the value from each dollar will be optimised. There has been a great improvement in the sharing of VfM ideas and the knowledge of NZTA processes.
This shift in culture will create significant benefits in this area.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	Yes

Contributors

Neil Beckett and the Wellington HNO Value for Money Working Group

Value for Money Initiative: C27 Creating Value for Money Guidelines

Opportunity

A opportunity was identified within the Wellington Regional Office, to develop a number of guidelines to develop our ability to demonstrate effective value for money activity.

Solution

The Wellington HNO VfM Working Group investigated areas where there may be misunderstandings, due to the complexity of NZTA documentation and the difficulty to find out the correct way to do something. The subjects selected were Contract Variations, Delegations, Short Form Contracts, and Approving Invoices. The guidance notes are available on NZTA's OnRamp (enter VFM in search box).

Estimated Costs & Benefits

These guidance notes help staff quickly find details of the key points to be aware of whilst doing the activity and provides links to the national document. They have been adopted by various teams Nationally and our National office have used them to help regions navigate their processes They will promote the VfM test being applied to each dollar spent and help HNO demonstrate our activities support the NZTA Value for Money Policy.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	No

Contributors

Neil Beckett and the Wellington HNO Value for Money Working Group

Value for Money Initiative: C28 Time and cost savings on placement of ads in newspapers

Opportunity

One three line ad involved 46 emails involving 11 people, including a senior manager and two external suppliers, plus a day of a comms advisor's time – a poor use of time and time is money.

Solution

We developed an advertising brief template. To ensure wording is properly thought through, correct and agreed by the business before employing external suppliers, who charge for every 15 mins of work.

Estimated Costs & Benefits

14 emails sent to external suppliers. 10 of these were unnecessary. $250 supplier charge per advert or $6000 a year. Based on consultant charge of $200 an hour and 2 ads per month. Direct cost saving = $6,000 a year. 11 staff spent a total of 6 hours on this (assuming $150 an hour = $900 per ad). Indirect cost saving = $21,600 a year.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	Yes

Contributors

Fiona Robinson - Senior Communications and Business Improvement Advisor

Value for Money Initiative: C29 MacKays to Peka Peka Alliance - safe systems approach to edge protection

Opportunity

To reduce the potential for high severity crashes using a "Safe Systems" approach.

Solution

The solution adopted was to provide Flexible barriers along the full length of the Expressway on the roadside edge. The barrier would be a TL-4 Wire Rope barrier. The solution improved safety benefits over a clear zone.

Estimated Costs & Benefits

Although a higher capital cost ($2M) for full length barriers, the solution offers safety benefits for a 20 year period of $7.5M – 19.9M excluding maintenance costs, thus providing a desirable safety outcome and a return on the additional investment.

Highways Strategic Priority	Impacts
Safe Journeys	Yes
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	No

Contributors

David Chester (Beca), James Hughes (NZTA)

Value for Money Initiative: C30 Mackays to Peka Peka Alliance – whole of life assessment of pavement design

Opportunity

To optimise pavement type in a high seismic environment, provide long term asset value, acceptable ride quality using an appropriate balance of capital expenditure (now) and maintenance (future) expenditure

Solution

A number of different pavement options were assessed using a predictive (risk of failure) model of asset performance over a 30 year life. The adopted option has both lower capital costs ($5.5M) and a lower whole of life cost than the previous option adopted at the Scheme Design stage.

Estimated Costs & Benefits

Cost comparison	Option 1 - MAB (Modified Aggregate Base Course)	Option 2 - BSB (Bitumen Stabilised Base Course)
Capital Cost (Est.)	$29.1M	$34.7M
Whole of Life - No Risk	$48.3M	$53.1M
Whole of Life - With Risk	$49.9M	$54.7M

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

Gerhard VanBlerk & David Alabaster (NZTA), Grant Higgins (Higgins)

Value for Money Initiative: C31 In-house focus groups: Petone to Ngauranga Cycleway

Opportunity

The Petone to Ngauranga cycleway project is a project to "close a gap" in an existing cycleway. The project does not yet have funding and will be scoped once available. The project team believed there to be disparate opinions about the best solution amongst local cyclists which might affect the scope of the project.

Solution

A survey was undertaken and distributed amongst cycle user groups. Selected participants were invited to participate in focus groups facilitated by NZTA staff in which they identified their response to possible solutions.

Estimated Costs & Benefits

The cost to NZTA was that of a gift card per participant plus room hire. Total costs came to around $2000 as they were facilitated by NZTA staff. The findings of the focus groups are expected to enable much clearer scoping for the future project. This could save on the I&R costs (perhaps 10% of $850,000).

Contributors

Jo Draper, Mike Seabourne, Maggie Buttle, Rowan Oliver, Rob Addison – RONS DEVELOPMENT TEAM

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	Yes

Value for Money Initiative: C32 Peka Peka to Otaki – Bridge Future proofing

Opportunity

Following the Otaki to Levin (O2L) project scope change, a VfM review of the Peka Peka to Otaki (PP2O) project requirements was undertaken to ensure an appropriate VfM solution was being delivered in reflection of the change in the O2L project

Solution

The VfM review identified that the change in the O2L project scope for the short term from a 4 lane expressway to capacity and safety improvements provided an opportunity for PP2O to deliver a VfM future proofing solution for a bridge. Instead of constructing a 4-lane bridge immediately a narrower bridge could be constructed to deliver the project requirements. Additional capacity can be added via a clip-on in the future when required.

Estimated Costs & Benefits

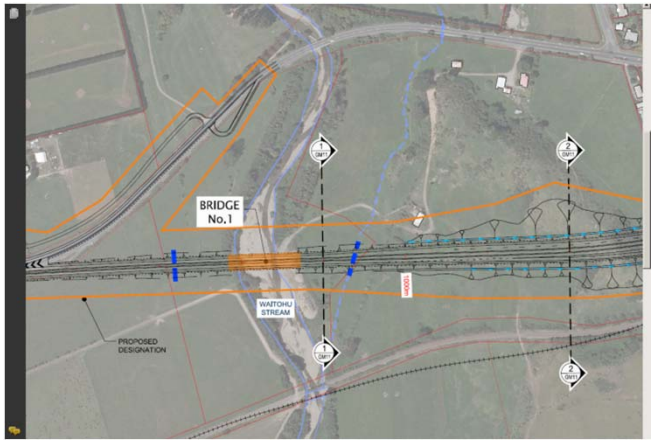
Full bridge build cost estimate = $5.2M

Future proof bridge cost estimate = $3.8M

Money saved to deliver better VfM NZTA projects = $1.4M

Contributors

PP2O project team, Ulvi Salayev, Rowan Oliver, Dean Ingoe, Rob Addison



Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: C33 Saving on consultation into the future

Opportunity

While planning to hold open days on the Peka Peka to Otaki project, the project team planned to hire large panels to display information boards while consulting on our mitigation proposals for the project. Previously, display panels had always been hired, which was an expensive short-term solution.

Solution

The team decided that they would instead purchase display panels, which could be used by the whole of NZTA repeatedly in the future. To get the best use out of them, the team also advertised the display panels widely across the business.

Estimated Costs & Benefits

The team expects that given the relative costs of hiring and purchasing the panels, the NZTA will make its money back within two years (9 uses) of purchasing them. The team expects to make savings long into the future as the Wellington-based team expects to have many more rounds of consultation before the various section of the Wellington RoNS is complete, as well as the displays being used for other public presentations in the future.

Contributors

Ulvi Salayev, Senior Project Manager; Rob Addison, Community & Stakeholder Liaison Advisor RONS Development Team

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	Yes

Value for Money Initiative: C34 In-sourcing air quality services

Opportunity

- NZTA strategy on investing in land Transport and recent severe budgetary pressure is encouraging us to review our service delivery arrangements specially services that has been out source under variation in our professional services contract
- NZTA has a legal obligation to monitor, review and assess air quality across the country; we require collect data every month to check the air quality against nationally-set standards.

Solution

Renewals of our professional service contract present opportunity for Wellington office to taking over the passive tube exchange task as part of monitoring the air quality in our Wellington network from 1 Sep 2012 onwards. Up to now we have employee consultant to taking the passive tube exchange at cost of $25,000 dollars per year

Estimated Costs & Benefits

The benefits of in-sourcing this service is:

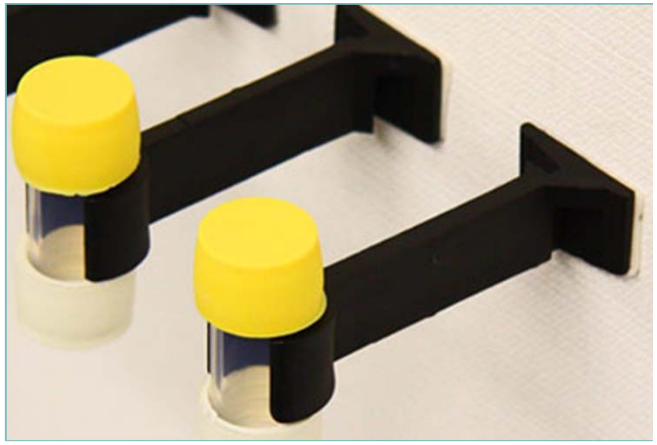
- Improving efficiency and reducing costs
- The ability to integrate a range of services and enhanced flexibility
- Regaining control
- Reducing cost and time spent managing activities
- Greater staff motivation and improved service quality

There will be no additional cost on us to in source this service

We estimate the saving of $25,000 in hand

Contributors

Michael Kargar, Wellington RO, Network Operations



Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	Yes
Efficient Delivery of Works	Yes

Value for Money Initiative: WBOP8 Central Rd Curves Realignment

Opportunity

Reduce very high numbers of crashes
Defer/remove need for planned capital block project
Renew pavement & improve geometry
Remove roadside hazards
Improve noise/vibration concerns of residents

Solution

Design and implement area wide maintenance works with support of utility providers, residents & Iwi
Not wait or have site driven by Capital work in the programme
SAR to determine long term solution

Estimated Costs & Benefits

No serious reported crashes since work
Cancellation of $3.2m project (incl design & construction)
Development of long term curve improvement option
Total Cost for NZTA $486K (AWT and SAR)

Contributors

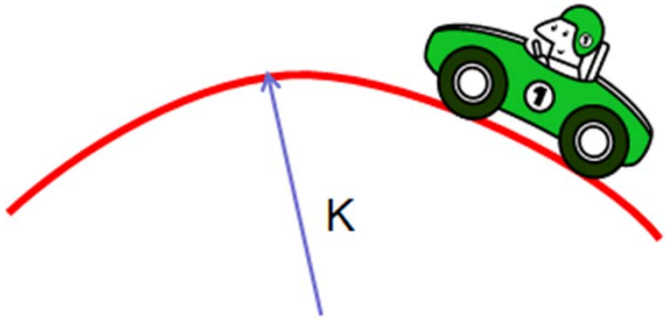
Rotorua District Council ($), Iwi (support), Utility providers ($)

Highways Strategic Priority	Impacts
Safe Journeys	Yes
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: WBOP9 K Value at Domain Road Interchange (TEL)

Opportunity

Reduce the K value of the crest and sag curves over the Domain Road Interchange to reduce the length and height of the expanded polystyrene embankments, thus saving costs.



Solution

Reduce the K value of the crest and sag curves, while remaining within acceptable limits. Construction costs reduced through reducing extent of expensive EPS embankment.

Estimated Costs & Benefits

Total costs saving to the project of $975k, split 50/50 between the contractor and NZTA. The PR's weren't able to be changed during the tender due to commercial confidence between tenderers.

Contributors

TEL Team

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: WBOP10 Tauranga Eastern Link :Reduce size of stormwater pipes

Opportunity

To reduce the value of the contract price for the TEL by reducing the minimum pipe diameter for NZTA road drainage requirements, as set out in the Principals Requirements (PRs)

Solution

The minimum pipe diameter was reduced from 375mm to 300mm through a departure request. This applied where the capacity of a 375 significantly exceeded the inlet capacity of the catchpit; but excluded cross drainage.

Estimated Costs & Benefits

A cost saving to NZTA of $18,000 was obtained without compromising the drainage system design VAT ASKED WHY WE HAD 375mm IN PR. M&O required that all SW pipes on the TEL be 375mm dia or greater.

Contributors

TEL Team

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: WBOP11 M&O Risk Management Process

Opportunity

Currently in BOP Maintenance and Operations, each contract area has a separate risk register. These documents sit in isolation of each other and the ownership lies mostly with the Asset Managers.
An opportunity exists for closer and more integrated management of risks. This will result in more appropriate, timely and value for money intervention and solutions.

Solution

An Excel spreadsheet has been created with a tab for each register (four contract areas, bridging and BOP strategic). From here all risks with a score above 200 or the top two from each register will filter up to a top priority register. Additionally the ownership of the risk registers will be returned to the network consultants who are on the network every day, with official updates coming to the Asset Manager quarterly.

Estimated Costs & Benefits

The new risk management process provides a management tool with consistency between registers and greater visibility to key risks across the entire BOP Network. The document will be live and relevant. Benefits will be seen from more timely and appropriate intervention, solutions and ongoing management minimising high costs of for example emergency works.

Contributors

NZTA Tauranga Maintenance and Operations

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	No

Value for Money Initiative: WBOP12 Providing free slip material to hauliers

Opportunity

Recycling of slip material (low grade rock) from the Waioeka Gorge slip. Collaboration with a local haulier that uses SH2 through the Gorge to go from Gisborne to Tauranga led to a mutually beneficial arrangement to reuse the slip material.

Solution

Contacted Robbs Transport hauliers. Cleared the proposal to supply free slip material with Regional Council. Instructed our Contractor to load vehicles belonging to this haulier if the drivers followed our guidelines.

Estimated Costs & Benefits

There are direct benefits to farmers seeking pavement material to use for cow races and tracks. Over 4000m^3 of material has been provided to locals to build tracks and some has been used to improve the access to the site of the Rhythm and Vines festival

Contributors

Nigel D'Ath, Dilip Datta, Contractors staff on site (Downer)

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: WBOP13 Fixing Median Wire Rope Barriers to Bridge Decks

Opportunity

We wanted to have continuity of median barrier types across the bridges on the Te Rapa Section of the Waikato Expressway. Hence we had to find a way to fix the Wire Rope Barrier Posts to a bridge deck.

Solution

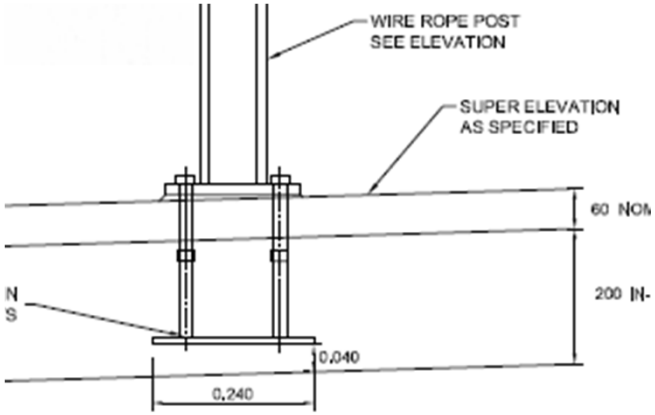
CSP designed and tested a base plate connection for wire rope posts. TRA designed a connection from the base plate to the bridge deck that can also be retrofitted to existing bridges. This is a simple idea and the value is in the effort from all parties to get approval to use it as an accepted solution.

Estimated Costs & Benefits

- **The cost of a wire rope barrier is a fraction of the equivalent concrete barrier hence savings are significant.**
- **Benefit is in the use of this solution on every existing bridge that WRB are being retrofitted by using base plates.**

Contributors

NZTA Design Manager, CSP and the Design Team for the Te Rapa Alliance



POST FIXING DETAIL DIRECT TO BRIDGE

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: WBOP14 Maximising working time in the Rail corridor

Opportunity

TRA constructed the NIMT Rail Bridge under the Block of line regime with Kiwi Rail observation. On one occasion a machine blew a hydraulic hose and a train was held up for 45 minutes whilst we dragged the machine clear of the rail. Kiwi Rail wanted to put us onto a new regime of clearing the rail well in advance of a train arriving.

Solution

We decided that the only way to offer Kiwi Rail assurance that we would not hold a train up again and at the same time maximise our work time was to hire a Hose Doctor to stay on site at all times on a weekly retainer.

Estimated Costs & Benefits

Remaining on a Block of line regime saved the loss of 5 hours of work time per day in clearing the line 30 minutes in advance of each train at the relatively small cost of $5,000 per week in standby costs with the hose doctor.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	Yes

Contributors

TRA Bridge Construction Manager.

Value for Money Initiative: WBOP15 Obtaining water for dust suppression

Opportunity

Water was in short supply during the summer for use as dust suppression on the Te Rapa Site. We installed 2,000 metres of one metre diameter pipeline in the first few months of the Project which then gave us an ideal storage vessel.

Solution

We directed surface water into the manholes every time it rained and filled the pipe up with a couple of thousand cubic metres of clean water. We were then able to fill our water carts by pumping from our own water supply right through the summer.

Estimated Costs & Benefits

The savings were in the order of $100,000 compared to purchasing water from the city supply at a cost of $2.10 per cubic metre.

Contributors

TRA construction Management Team

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Value for Money Initiative: WBOP16 Construct embankment over existing Trunk Sewer

Opportunity

Our expressway embankment passed over a one metre diameter 1970 Hamilton City Trunk Sewer that was running 90% full at all times. We had to provide a guarantee to HCC that our fill would not damage their sewer.

Solution

The choice was to relay the sewer to a known standard or find a way to not add any load tot he existing Pipe. The solution was to design a lightweight fill using Polystyrene complete with concrete beams for providing foundations and attachment points for guardrails and light poles such that no extra load eventuated.

Estimated Costs & Benefits

The benefit of getting our light weight fill design accepted by the HCC was in the speed of construction and the reduced risk compared to relaying a live pipe six metres deep. This saved the project more than $500,000 in direct costs and two months less time for the construction programme.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

TRA Design Team, Construction team and HCC Drainage Engineers.

Value for Money Initiative: WBOP17 More use of our Professional Services Team

Opportunity

There was a significant number of projects in which Stabilisation was proposed as a solution. Project Managers and Asset Managers are not technical specialists and normally don't have the time to dwell too much on the detail so we needed a refresher on this topic.

Solution

Instead of booking a Pavement Stabilisation course through the NZIHT we asked our National Technical Advisor (Pavements) to come to the office and present the latest research on Stabilisation. We selected the topics of interest and he prepared the presentation.

Estimated Costs & Benefits

NZIHT's fee to present this course was $3,100 for up to 10 delegates and any extras above this was $100 per person. Because the course attendance was 11 the saving was $3200 without Gerhard's travel expenses from Tauranga.

Contributors

Gerhard Van Blerk and HNO Hamilton

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	Yes

Value for Money Initiative: WBOP18 NZTA Obtaining better value air travel

Opportunity

Many NZTA staff regularly fly so there must be opportunities to obtain best value. Fulton Hogan passed this example on via the Te Rapa Alliance.

Solution

Try and book as far ahead as possible, Flexi Plus can be cancelled or changed at no cost (unlike Grabaseat and Smart Saver) so choose wisely. Consider utilising the Air NZ Starfish scheme that for a fixed annual fee ($200 for 15% and 800 for 30%) gives large discounts on all regional flights (i.e. anything other than Akl-Wel, Well-Chch, Wel-Dun etc).

Estimated Costs & Benefits

Flying once every month between Hamilton & Christchurch and booking a month ahead with cheapest Flexiplus and the 30% Starfish discount saves NZTA $520 each trip, so for 12 trips/year this is a BCR of 6240/800 = 7.6 and a project saving of $12,000

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

Mike Howatt (Fulton Hogan Te Rapa Alliance Board Member)

Value for Money Initiative: AN41 Best Use of Existing NZTA Assets – SH1 Newmarket to Greenlane Auxiliary Lane Project

Opportunity

At the time of project design, the movable median barrier from Auckland Harbour Bridge was being replaced. This provided an opportunity to use this during the construction of SH1 Newmarket to Greenlane Auxiliary Lane project as a protection barrier between the worksite and live motorway traffic lanes.

Solution

As the barriers were originally designed to be movable barriers, the barriers required minor modification. A restraining mechanism approved by the barrier manufacturer had to be installed to ensure the safety of the site. The option to use the barriers was offered free of charge to the tenderers in the RFT.

Estimated Costs & Benefits

The use of these barriers achieved significant cost savings in providing temporary traffic management and provided a safe site for construction to commence. It was estimated that a saving of $1M was generated, the calculation of which was inferred from the difference of the tenderers' temporary traffic management costs who opted not to use this asset and the cost of the successful tenderer who opted to use the asset. The barriers can now be used on other construction projects requiring a large amount of protection barrier. As an example, these assets were later used successfully in Hamilton.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

Ronnie Salunga

Value for Money Initiative: AN42 – Moveable Lane Barrier Safety Upgrade

Opportunity

To improve the safety and delineation of the MLB Transfer machine.

Solution

The MLB Crew and Delivery Manager improved safety by installing deflector rails and undertook improved delineation of the MLB machine by installing orange and yellow signage and by upgrading the lighting on each cab.

Estimated Costs & Benefits

The staff are now better protected in case of a vehicle strike, and the MLB machine is more visible through improvements. Anecdotally vehicles now move over more in advance and we have had less vehicle strikes and damage.

Contributors

MLB Crew – Auckland Motorway Alliance

Highways Strategic Priority	Impacts
Safe Journeys	Yes
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	No

Value for Money Initiative: AN43 'Teaming up' for the iwi consultation and communication for the Puhoi to Wellsford RoNS

Opportunity

The NZTA Puhoi to Wellsford Project was announced as a RoNS in 2010. No previous studies had been carried out. As part of the Statement of Identified Maori Interest (SIMI) process carried out at the commencement of the study period, the consultant identified that the project would be located within the rohe (boundaries) of five Mana Whenua groups and consultation was commenced with the five groups separately. This didn't get off to the best of starts with the various groups expressing their grievances re interactions with NZTA on previous projects. The project team organised a hui which brought Mana Whenua together. At this hui Mana Whenua expressed an interest in forming a roopu (collective). This group named itself Hokai Nuku.

Solution

The project team saw this as a fantastic opportunity and wrote a term of reference and a short form agreement agreeing the roles of NZTA and Hokai Nuku. These documents were signed in late 2010. The representatives of Hokai Nuku (who are all kaumatua of the various Mana Whenua) and the leaders of NZTA met to formally commence the arrangement. As per the agreement Hokai Nuku meet every month, the project team attend bi monthly, the organisation leaders every six months. This has resulted in a simple reporting structure and decision making process. NZTA has received a single Cultural Effects Report (CEA) which all 5 groups have contributed to, that identifies and assesses the potential effects of the Puhoi to Warkworth section of the project and provides a suite of recommendations that can be taken forward into the consenting and construction phase of the project

Hokai Nuku and NZTA in action

Estimated Costs & Benefits

This collaborative approach to iwi consultation has resulted in some significant benefits. Time savings have been achieved as the project team has not had to consult 5 different iwi groups and procure 5 separate CEA's. Internal iwi issues haven't become NZTA issues. Issues between Mana Whenua have been addressed by Mana Whenua. There are downstream benefits (ie BOI process) as Mana Whenua have collectively agreed the contents of the CEA. Wider benefits include NZTA and Hokai Nuku being trusted advisors to each other, other project teams can take advice and guidance from Hokai Nuku on their projects (ie northern busway extension) and relationships have also been built between kaumatua, Stephen Town and Tommy Parker.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	Yes
Efficient Delivery of Works	Yes

Contributors

Sonya McCall (NZTA – Auckland)

Value for Money Initiative: AN44 Combine the north portal detention tank with the portal sump.

Opportunity

An opportunity has arisen to combine the large detention tank, which is required to collect any contaminated water from the Waterview tunnel, with the water collection sumps. The original design called for an above ground detention tank at the north portal with an additional Low Point Sump (LPS) which would pump the water from the bottom of the tunnel to the top of the tank.

Solution

Incorporating the detention tank with the sump below the northern tunnel portal will allow the above ground structure to be deleted. This will save on capital costs, programme time to build the structure at the end of the project, and will mean that the LPS pumps will not have to pump water as high - which will lead to operational cost savings.
Deleting the above ground structure completely removes a substantial construction activity eliminating risk to the project team and wider public. The safest way to build something is not at all. This innovation also frees up land above the portal for urban design treatment that better meets the community's needs.

Estimated Costs & Benefits

Cost savings for the deletion of the tank will be $400,000 with associated amenity, programme and safety benefits.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

Martin Billington, Kevin Stewart

Value for Money Initiative: AN45 Gabion Basket Transition

Opportunity

Gabion baskets are used extensively to retain banks on rural networks but represent a significant road-side hazard as they present a blunt square end to traffic . The traditional response is to provide guardrail to protect the hazard.

Solution

A transitioning gabion system has been developed to curve back into the bank removing the square blunt end and negating the need for barrier as the hazard has been eliminated. It also has less environmental impact.

Estimated Costs & Benefits

The necessary barrier end terminal and sufficient length of guardrail can cost up to $30k and requires ongoing maintenance. The transitioning system can be built for $6k with no ongoing maintenance costs.

Highways Strategic Priority	Impacts
Safe Journeys	Yes
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

John Cridge (Transfield Services) and Murray Parker

Value for Money Initiative: AN46 Business cards

Opportunity

Field staff at the AMA have been told that they shouldn't talk to the public about their complaints but direct people with enquiries or complaints to the proper channels. Sometimes this is hard to do without seeming like you are brushing them off or being rude.

Solution

Business cards have been issued to field staff with the contact details for AMA customer services.

Estimated Costs & Benefits

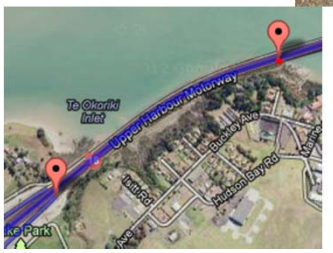
A cost effective way of dealing with public without being rude.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	Yes
People & Processes	Yes
Efficient Delivery of Works	No

Contributors

Patrick Burns – Auckland Motorway Alliance

Value for Money Initiative: AN47 Mower Access on SH18 Bridge to Squadron Dr



Opportunity

As a result of the Capital project extending the guardrail and installing new guide sign on SH 18 westbound by Squadron Drive off ramp our access to mow an area 1.0km long by 4m wide was made inaccessible because the sign installed was too low and too narrow to allow mowers to get through. To then weed eat the area would have taken 6 labourers at least 8 hours to complete the job.

Solution

A design of new sign posts was done to allow the existing sign to be raised to allow mower access as well as access for litter ute should the need arise.

Estimated Costs & Benefits

After a simple economic analysis, it was concluded that the cost of raising the sign is equivalent to the cost of 2 visits from the weed eaters. From now on, it will only be a labourer with a mower spending three quarters of an hour mowing the area, which is a saving of 46.25labour hours per visit. In addition, the weed eaters are able to improve their level of service on the network and we have access for litter pick up if required.

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	No
Efficient Delivery of Works	Yes

Contributors

Dale Logan, Neil Cullum & Chee Khiong Chang (AMA)

Value for Money Initiative: AN48 Paver Guide Arm

Opportunity

With the current Guide Arm on the paver is too short and it doesn't allow the operator to clearly see the guidelines when paving a standard lane width and extra wide lane width, the current guide arm also is in the way when moving the paver around the site.

Solution

The solution was to get a new fully adjustable guide arm fabricated to allow the operator to have a full view of the guidelines when paving at a standard lane width and extra wide lane width. With the new guide arm we are able to fully close it up with out having to remove it from the paver.

Estimated Costs & Benefits

- **Increased quality at the longitudinal joints**
- **Removal of manual handling of the guide arm**
- **Removal of a safety hazard on site**

Highways Strategic Priority	Impacts
Safe Journeys	No
Efficient & Reliable Journeys	No
Social & Environmental Responsibility	No
People & Processes	Yes
Efficient Delivery of Works	Yes

Contributors

Wayne Knapp (AMA)