

This 5th VfM booklet contains
31 Value for Money Stories
contributed from across the country in the
3 months ending November 2012.

Take a look and if you want to learn more, email
or call the contributor, or just make use of their
idea!

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

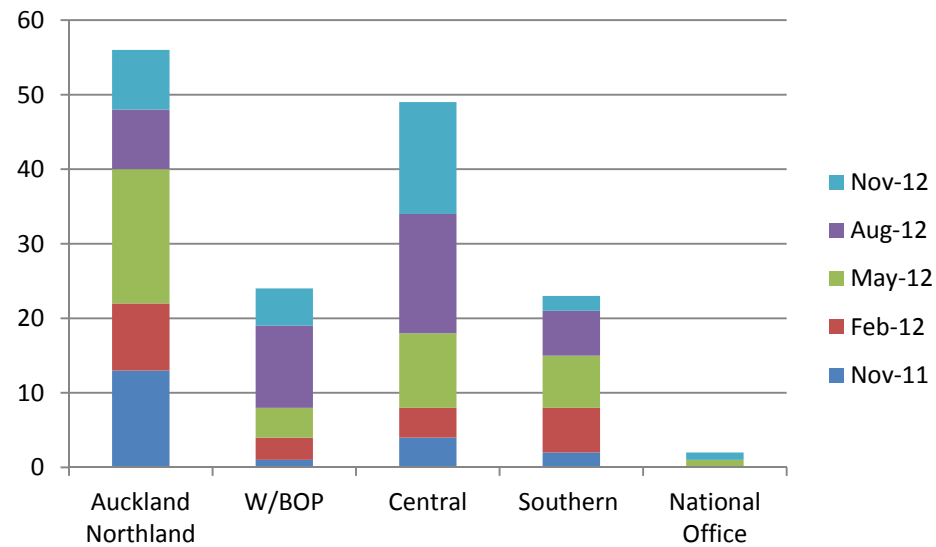
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To date we have received 154 Value for Money slides.

Value for Money Initiative: C36 Reduced cost for processing Bridge building consents

Opportunity

Recent changes to the Building Act has amended the criteria for structures requiring a consent. This includes discretionary exemptions to requiring Building Consents, therefore reducing compliance costs. These are managed by Territorial Local Authorities (TLA's) and is a new process that all parties need to understand and work together to achieve a positive result.

Solution

By working closely with TLA's NZTA can reduce costs – specifically professional fees through not having to prepare a consent, Code Compliance Certificate applications and sign off at the end of construction by using only Chartered Engineers (as required in the criteria) for some structural work.

Estimated Costs & Benefits

By using Chartered engineers and with the TLA's agreement, savings of approximately \$3000 per application are being made. (Reduced TLA processing costs, in the order of \$1,500 per site and reduced consultant input also approximately \$1,500 per site.

Contributors

Napier NZTA and Opus Bridge Team



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



highways and network operations

Value for Money Initiative: C37 Co-sharing Renewal works between Roading Controlling Authorities to reduce costs

Opportunity

Early discussions between GDC, NZTA and Opus identified the opportunity to bundle similar works within similar geographic locations to reduce construction and management costs.



Solution

- Sharing of Renewal Programme
- Including local council rural AWPT site into NZTA contract
- Include NZTA urban AWPT sites into Council contract and a shared Minor safety contract



Estimated Costs & Benefits

- Greater than \$46K savings on \$570K of work has been achieved
- Shared used of cut to waste from SH being used in council project

Contributors

Napier NZTA and Opus 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: C 38 Installation of Corridor Access request Management System to improve work flow

Opportunity

The new utilities access code was mandated on the 1st January. NZTA investigated processes used by surrounding councils, it was identified that processes, and improved customer focus could be achieved with existing RAMM software.

Solution

- Installation and operation of RAMM CAR manager software
- Implementation of Customer facing interface B4U Dig
- System process and customer processes developed

Estimated Costs & Benefits

- Reduced processing costs & time by 2/3rds
- Mandated process being applied and improved data capture
- Improved customer focus and standardisation
- Opportunity to record & manage Temporary Traffic on SH network and to have a one network approach with other RCA's.

Contributors

Napier NZTA and Opus Team



**Important Information...
Work in the
State Highway
Road Reserve**

If you are required to undertake work within the Gisborne or Hawke's Bay State Highway road reserve, you will need a Work's Access Permit, or WAP, from the NZ Transport Agency (NZTA).

Frequently asked Questions

Q: Why do I need a Work's Access Permit (WAP)?
A: WAPs are required for various reasons including protecting NZTA's assets, protecting other assets located within the State Highway road reserve, improving the safety of motorists, improving the safety of those working in the road reserve and coordinating work in the road reserve to reduce conflicts.

Q: What happens if I don't have a WAP?
A: If you do not have a WAP, you do not have NZTA's permission to be working in the State Highway road reserve and you may be requested to cease work.

Q: What information do I need to include with my Corridor Access Request (CAR)?
A: All required detailing information, plans or photos, and a traffic management plan.

Q: How long does a WAP take?
A: Provided the information submitted with your application is adequate, your WAP will be approved within 15 working days.



Process

There are five stages to the WAP process:

- 1 Apply**
To apply for permission to work in the State Highway road reserve, you will need to apply for a Corridor Access Request (CAR). Applications should be made through before4uDig as www.before4udig.co.nz, or by phoning them on 0800 248 544.
- 2 Process**
Once you have applied for a CAR, the information is sent to Opus International Consultants Ltd who, as NZTA's representative, process your request and form a set of conditions.
- 3 Review**
Your CAR and work conditions are then reviewed by NZTA.
- 4 Approve**
If NZTA accept the application, a Work's Access Permit (WAP) is approved. You will then be notified by email that your work is approved to go ahead. Your approved WAP and conditions will be attached to this email.
- 5 TMP**
If a traffic management wasn't submitted as part of your original application, you will need to submit one for approval at least 2 working days before any work is carried out.
- 6 Completion**
Once you've completed the work, you will need to notify before4uDig through the website or phone line.
- 7 Warranty**
As part of the conditions for the work, you will be required to remedy any effects found in your completed work for a period of 24 months.

A brief overview of the process



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graph TD
    A[Applicant submits Corridor Access Request through www.before4udig.co.nz] --> B[Opus receive Corridor Access Request information and process the application]
    B --> C[NZTA review Corridor Access Request and approve]
    C --> D[Applicant receives a Works Access Permit and work conditions]
    
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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: C39 Design-build projects – Property acquisition

Opportunity

Design-build projects tend to want property purchase completed in a short timeframe and there is a tendency to over-estimate land requirements at the outset to avoid future delays associated with subsequent purchases. This can result in surplus land at the end of the project that owners are reluctant to purchase back, or NZTA is left with an ongoing network maintenance obligation.

Solution

Traditionally the approach is to pay landowners for all the land at one time. Two possible solutions under consideration are to: 1) Offer landowners an advance payment of 80% of the land value with 20% held back to cater for the value of any land that is subsequently returned; and 2) Pay full value for the essential corridor land plus a temporary occupational allowance (or lease) of the uncertain areas with a right to purchase those areas, post project completion.

Estimated Costs & Benefits

On one recent project alone the land value savings from this approach would have been \$13,000. There is also the potential to make savings in network maintenance costs.

Contributors

Peter Trotman, Project Management Services, Wellington



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: C40 422 Hutt Road, Lower Hutt - Disposal

Opportunity

422 Hutt Road was recently tendered for sale and the highest tender that was received was \$30,000 versus a valuation of \$230,000.

Solution

In analysing the property's failure to sell we have identified that boundary and easement uncertainties may be an issue for prospective purchasers. We have engaged a surveyor to re-define the boundary and propose to build a fence between the two properties. We have also sought legal feed-back on easement issues and ordered a LIM report from the Local Authority to provide greater clarity/definition for interested parties.

Estimated Costs & Benefits

Survey and fencing costs are estimated at \$5,000. The value benefit will easily exceed this expenditure if it results in a sale that is comparable with the adjoining section values.

Contributors

Peter Trotman, David Apthorp, Project Management Services



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: C41 Contract Database

Opportunity

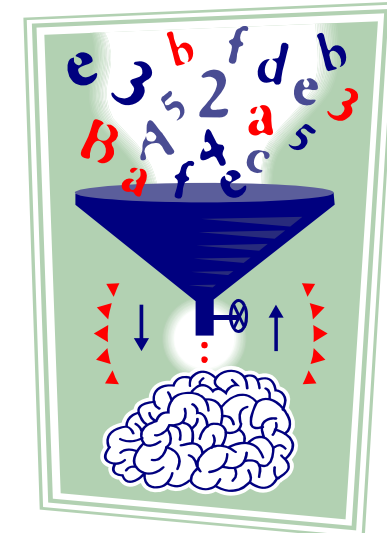
To develop a contract database to provide oversight of resources and hourly rates.

Solution has been developed to provide mechanism of recording all pertinent details of offered resources, roles and hourly rates. Permits automated updating of detail via electronic means. Additionally to be used to cross check contracts entered into Proman to ensure appropriate financial and contract management protocols are applied.

Estimated Costs & Benefits

Far ranging benefits include: strengthen negotiation position, ensure consistency in offered rates, avoid overcommitment of resources, improve short form contract management & PM's financial management skills.

Contributors



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: C 42 Innovative solution delivering a vfm and quality solution at one location whilst improving safety at another

Opportunity

During the recent floods in July and August 2012 the Marlborough network suffered upwards of \$2m of damage. One particular part of the network suffered severe dropout causing the road to narrow to one lane. The drop out was 51m in length and 7m high.

Marlborough Roads took this opportunity to look at new cost effective retaining wall system, that could replace the traditional methods such as Rail Iron Walls and Gabions Walls.

Solution

Marlborough Roads invited RST Environmental Solutions to survey the damaged area and offer a solution. Their solution was to construct a Brush Layer Wall, which is a bio-engineered structure with a living front face.

Marlborough Roads also took the opportunity to excavate a rock embankment on nearby State Highway 6 to use as the backfill material. for the Brush Wall. This section of the highway is adjacent to a busy rural intersection and there has been a long standing issue with vehicles entering and exiting the State Highway due to poor sight distances.



Estimated Costs & Benefits

Brush Layer Wall: \$185k – Gabion Wall: \$232k – Rail Iron Wall: \$267k (\$47k or 20% saving on Gabion Wall Option)

The cost of the Rock Fill material was \$19,860 and the cost of the AP65 equivalent would have been \$37,590 a \$17,730 or 47% saving.

Overall Cost Saving \$47k + \$17k = \$64 Saving – The other win – win was that by removing the rock embankment we improved the sight visibility at the problematic rural intersection.

Contributors

Marlborough Roads, Opus and HEB

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

Value for Money Initiative: C43 In-house focus groups

Opportunity

Focus Groups are a technique used to liaise directly with customers, gaining direct insights to open or closed questions. These are typically undertaken during evenings or weekends and tend to be externally facilitated.

Solution

NZTA identified participants for four focus groups which were held internally, using its own staff as facilitators rather than hiring external staff who had less knowledge of the particular issues to be discussed.

Estimated Costs & Benefits

The cost was around \$2,000, on gift card purchase, room hire and food. It is estimated this saved \$10,000+ in consultant fees. In addition, NZTA has built direct relationships and trust with its customers which will have ongoing benefits.

Contributors

Jo Draper, Mike Seabourne, Maggie Buttle, Rowan Oliver, Rob Addison



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: C44 Variation Order good practice

Opportunity

- 1) To demonstrate the use of the Wellington VfM variation guidance notes and the benefits it can provide.
- 2) To insert VfM ethos into everything the NZTA and its service providers do. This opportunity, review variations and set baseline/cap to obtain value for money in future when the services are provided.

Solution

To clearly express the VfM ethos the NZTA staff reviewed the variation closely and reduced the value of the time charge variation cap from the supplier proposed \$350K to \$250K by challenging the calculations. This sent a clear VfM objective.



Estimated Costs & Benefits

The reduced cap sends a clear message that any additional fee request will require increased justification to spend above the cap, and that NZTA are reviewing VfM closely. The \$100K reduction is a potential saving, the main benefit is generating the providers VfM ethos by requiring them to review their expenditure more closely having been provided a smaller budget.

Contributors

Rowan Oliver, Roger Burn

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: C45 Maximise Structure Life Using Cathodic Protection

Opportunity

SH6 Maitai Bridge in Nelson was constructed using precast Pre-tensioned I-Beams and had developed significant corrosion to the steel used in the cast in-situ reinforced concrete piers. The bridge spans a tidal river, so it is exposed to salt water attack. The likely cause is lack of concrete cover the to steel.

Solution

The installation of cathodic protection to arrest the corroded steel in the chloride contaminated concrete, extending the longevity of the structure.

Installation of a cathodic protection solution in 2011 will significantly extend the useful life of this significant 5 span bridge at a relatively small cost.

Estimated Costs & Benefits

The installation of this system was \$10,000 and is likely to extend the useful life of this bridge by approximately 25 to 30 years. The alternative pier and other concrete repairs would cost between \$5,000 and \$10,000 and would only extend the life of the bridge to approximately 8 to 10 years.

Contributors

Neil Beckett – NZTA, Teaming up Opus Blenheim



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: C46 Optimised Pavement Modelling

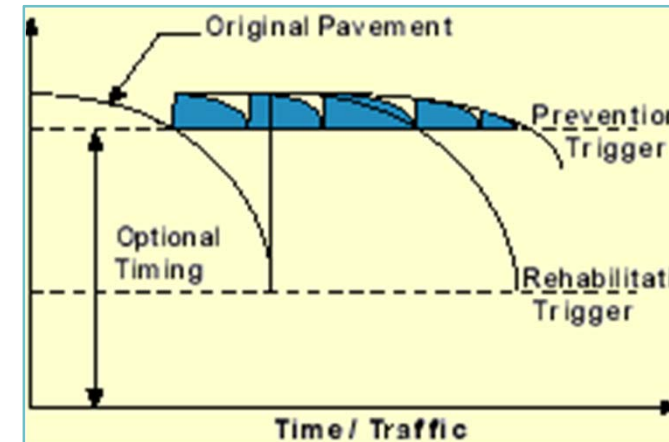
Opportunity

As part of management system review to improve our efficiency in supporting our supplier to reduce cost without sacrificing quality, and deliver faster and better quality service, we reviewed the utilisation of dTIMS and its outcome in last 5 years for Nelson and Wellington networks.

Every year we have spent approximately \$45,000 for Nelson and Wellington networks for carrying out Pavement modelling in dTIMS.

Solution

By developing new processes for prioritising pavement treatment sites, we have minimised the need of using dTIMS to once every three years for assessment of pavement deterioration and developing a 10 years Forward Works Programme.



Estimated Costs & Benefits

The benefits of in-sourcing this service is:

Improving efficiency and reducing costs. Saving approximately \$90,000 over three years.

Contributors

Michael Kargar

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: C47 Renewals Prioritisation Matrix

Opportunity

At a time when maintenance budgets are reducing in real terms (flat lined) the Wellington Hybrid team recognised that every dollar spent on renewals should be justified better and the need to demonstrate a Value for Money approach.

Solution

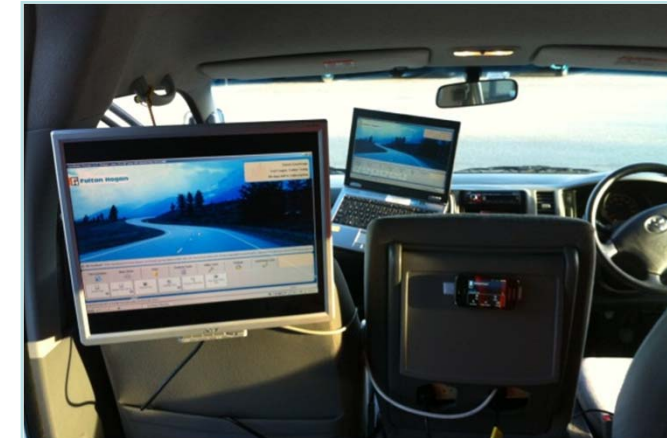
The Wellington network was assessed, using the JunoViewer tool and other available asset data. We then gave each treatment length a priority ranking based on a number of measurable values (such as rutting, cracking, deflections etc) and risk. i.e. high volume.

Estimated Costs & Benefits

The resulting matrix highlights the sections of road that have the highest maintenance costs (past & future), the worst condition and highest risk in terms of safety and public expectation and enables the team to target the right lengths. This enables us to demonstrate that we are maximising the efficiency of every dollar spent.

Contributors

Emma Tonks – Net Ops Wellington Teaming up with Fulton Hogan and MWH



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



highways and network operations

Value for Money Initiative: C48 Minimise Customer Frustration Using Traffic Information

Opportunity

There is a need to avoid un-necessary travel delays, due to planned maintenance activities. This could be achieved by using the wealth of knowledge we can gain from our traffic monitoring data stored in the National TMS (Traffic Monitoring System). A report for each traffic monitoring site can be produced, as shown to the right, which highlights time of day congestion and day of year.

Solution

Using the traffic reports summarised to an hourly level, we can set thresholds for various levels of congestion. NZTA's Economic Evaluation Manual was used as a starting point for congestion. These thresholds are also user definable enable it to be used to estimate the effect on traffic flows following a lane closures. It has been seen as a valuable tool to support the effective planning of traffic management and other planned maintenance.

Estimated Costs & Benefits

The cost of this exercise was internal staff time only, as the information is readily available in NZTA's TMS System. The benefits are great, as this initiative will result in a reduced risk of customer frustration and impact whilst raising the efficiency of the network.

Contributors

Neil Beckett - NZTA

Start Date (dd-mon-yyyy): 1-JUN-2011
 End Date (dd-mon-yyyy): 30-JUN-2012
 Data Type: All Vehicles

Direction: Increasing SOUTH BOUND Direction: Decreasing NORTH BOUND

Site: 01N01042 (Nth of Wairaka Rd (Ph...))

Note: Cells A, E and S, I do not require the calculation of the Adjustment Factor, as per NZTA for this report.
 The threshold values in this report were obtained from the NZTA EEM document, see Sections A.3.3, A.3.8, A.3.9, A.3.10 and A.3.11.

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Value for Money Initiative: C49 Prompt Payment Discount of Electricity Bills

Opportunity

Most electricity suppliers offer prompt payment discount to customers if the payment is made by the due date. With our payment process and timing, we can often miss this discount deadline and pay an addition amount. Some supplier will always honour this discount for NZTA, other will not.

Solution

To ensure we receive the discount, we reviewed all our electricity supply contracts. We checked to see if we were potentially missing out on this discount and if so ensured all electricity bills are processed prior to the due date.



Estimated Costs & Benefits

Following this activity, we have see the benefits of 10% savings on many of our energy bills

Contributors

Dandan Huang (Grace) – HNO Wellington

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: C50 Saving money on speed surveys using In-House Trial

Opportunity

To investigate the effectiveness of a traffic counting device (Viacount II – radar) by installing the device at a particular site and identify if it would provide cost savings in traffic management and quality data, when collecting speed data. A trial was carried out in an area where data was required, to optimise the cost savings of the trial.

Solution

To use the unit to record traffic flows and speeds at the defined location and assess the accuracy compared to visual surveys. This enable me to report on the benefits and limitation of the potential system's use.



Estimated Costs & Benefits

The results of the trial and resulting speed surveys were provided to the safety team with no cost to NZTA. The use of this hardware saved the cost of Temporary Traffic Management (which could cost approximately \$2000) and the cost of engaging a contractor to collect speed surveys (\$1040.00 approximately per site).

There has been some interest in the future use of this equipment, resulting in future savings. A report demonstrating the benefits and limitations of it's use is being developed for sharing.

Contributors

Anandita Pujara (HNO, Wellington)

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: Nat 2 - Bailey bridges : insurance of “in-store” stock

Opportunity

The annual premium for insuring the Bailey bridge stock materials rose sharply to \$40,000 in 2012. The stock is located in two secure compounds, one in Hastings, and the other near Christchurch. As the stock is basically dormant whilst in storage, the need for insuring these material was questioned, as we don't insure any of our other bridge assets.

Solution

The National Office Structures team, in consultation with the Assurance and Risk team, determined that the annual insurance premium was deemed too high compared to the risk of physically losing these components. Therefore, the National Office Structures team took the

Estimated Costs & Benefits

\$40,000 annual insurance premium costs were instantly removed.

Contributors

Barry Wright, Ewan Smith; National Structures 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: S22: Innovative P/4 Resurfacing- Single Coats

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 which contractors would not attempt under P/17. One example is the use of single coat grade 3 with emulsion, previously considered too risky for emulsion sealing.

Estimated Costs & Benefits

The cost of a single coat grade 3 is approximately \$1/m², less than a full 2 coat seal. Over a km of sealing, this equates to a saving of \$10,000 which can then be reinvested in lower risk treatments on the higher profile roads, or allowing our budget to stretch further giving greater achievement lengths.

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	Yes
Efficient Delivery of Works	Yes

Value for Money Initiative: S25 Dust Control at Slip Site

Opportunity

Reduce the environmental impact of dust generation at a recent minor realignment at Dave's Bluff slip site on both Lake Wanaka and the travelling public without incurring large costs from the requirement for daily applications of water.

Solution

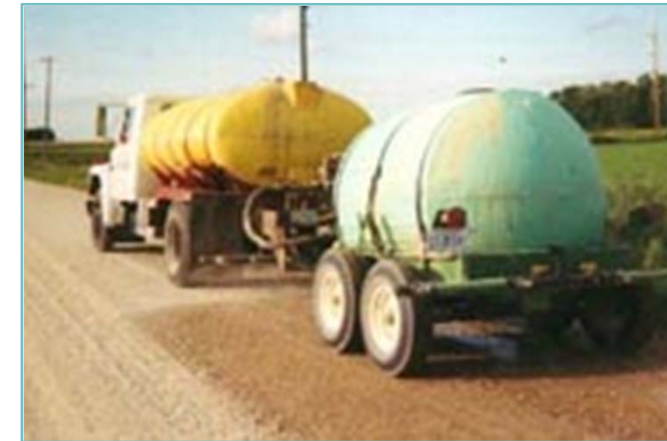
With the impending Christmas and summer holidays the option to use a dust suppression system would reduce the travel time and plant costs to treat the site and protect the surface over this period.

Estimated Costs & Benefits

A single treatment of DUSTLOCK would cost \$1,200 whilst the cost of two treatments per day over a 6-8 week period using the traditional water cart method would cost in excess of \$25,000.

Contributors

Rob Bond (Opus) and John Jarvis (NZTA)



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

Value for Money Initiative: AN49 Bridge Strengthening for HPMV – Maximise Availability of Bridges for HPMV at Minimum Cost

Opportunity

The Khyber Pass Viaduct, Strand Rail Over Bridge, Sylvia Park Railway Overpass 1&2 were identified as deficient to carry full High Productivity Motor Vehicles (HPMV). There is an opportunity to carry out any strengthening works during Christmas 2012 Block of Lines (BoL) of Kiwirail's Auckland Electrification Project (AEP) to avoid costly and disruptive strengthening works.

Solution

- Further analysis/investigation of these rail bridges are given top priority to reconfirm their adequacy to carry full HPMV. If any is found deficient, strengthening works will be undertaken during the forthcoming Christmas 2012 Block of Lines (BoL). After this time, the electrical wires beneath these bridges will be up and running.

Estimated Costs & Benefits

Kiwirail advised that there will be an increase of about 25% to 40% on strengthening works once electrification is made live. The cost of strengthening these bridges was estimated to cost \$2.5M, and therefore savings of \$625k to \$1M can be realised if works is carried out during Christmas BoL or \$2.5M if no strengthening works is required. Also, by inviting Auckland Transport (AT) in the coordination meeting with Kiwirail, they were made aware of the 2012-2013 BoL programme. Hence, a bridge under their responsibility (i.e. Westfield Rail Over Bridge) that was confirmed to be deficient is now under design and progressing towards strengthening prior to electrification.

Contributors

Ronnie Salunga



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

Value for Money Initiative: AN50 Traffic Bulletin Newspaper Update

Opportunity

For years the AMA have submitted a fairly large advertisement each week in the public notices section of the Saturday NZ Herald to inform the public of upcoming planned motorway closures. This weekly public notice could cost up to \$100,000 per annum and it seemed to not be very well known or read.

Solution

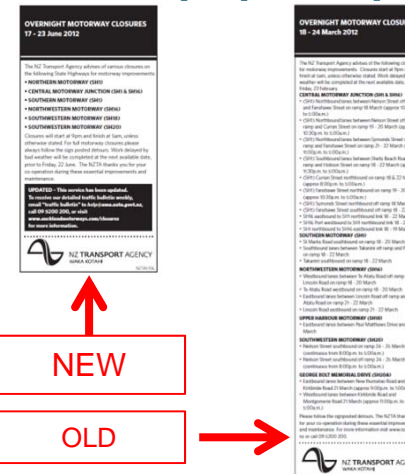
We investigated how well read the public notice was as well as our legal obligations to keep road users well informed. Our findings revealed that we could shorten our public notices list in the Herald (while still covering roads effected) with a short message at the bottom describing that there is more detailed information on our website or to call 09 5200 200, or subscribe to our weekly email with a full list of closures.

Estimated Costs & Benefits

- Once implemented – only 3 calls/emails received in total asking to be added to distribution list (confirming we were not reaching our target audience through the Herald).
- Original cost was averaged \$2050 per week now reduced to a consistent \$934 per week. Cost savings of \$58,500 per annum.

Contributors

Melissa Grainger, Paula Lewis, TTM 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: AN51 Waterview Connection relocation of Electrical Distribution Panels (EDP)

Opportunity

Relocate electrical panels from the low voltage switch rooms to the Portal Sump level in the northern and southern ventilation buildings

Solution

By relocating the distribution boards the Alliance will reduce the congestion of cables running through the ventilation building. This will make the installation of the boards easier, due to smaller cable sizes, routes and less bends, and will not require any additional fire protection or ventilation systems at the sump level.

The innovation will also lead to savings in containment size and will remove the number of cables having to travel between levels.

Estimated Costs & Benefits

Cost savings are expected to be around \$100,000

Contributors

Gary Eccles



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: AN52 Newmarket Viaduct – Hydraulic Core Drill

Opportunity

The core drills commercially available that were used on the NGA Newmarket Replacement Project relied on electric motors that struggled with the torque load on the larger cores. The three speed electric motors produced less torque at higher revs and were subject to jamming and motor burn out.

Solution

The electric motor was replaced with a variable speed hydraulic unit. The new unit is powered by an existing pump unit available from the truss.



Estimated Costs & Benefits

- It is more reliable and less susceptible to jamming resulting in greater productivity;
- The hydraulic motor provides constant torque across the speed range;
- The weight of the hydraulic unit is similar to the existing electric units; and
- The hydraulic unit is more versatile and can be used upside down as the motor will not be affected by the water used to cool the drill; hence, it can undertake the overhead drilling needed in some locations.

Contributors

NGA Newmarket Site Team (compiled by Vivianne Tadros)

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

Value for Money Initiative: AN53 Newmarket Viaduct – Crane Studies

Opportunity

The NGA Newmarket Viaduct Replacement Project requires extensive use of cranes. Numerous lifts on site are required that involve the relocation of heavy loads at height, of which many involve operations where the crane driver is unsighted.

Solution

A standard crane study pro-forma has been developed that provides site teams with critical information, which can be viewed "at a glance" when planning critical lifts. The information allows cranes to be setup accurately and any impact on above and below ground services plus other site constraints can be readily identified.


Estimated Costs & Benefits

- It insures that cranes are always operating in line with the safety essentials;
- Cranes can be accurately setup on site;
- Problems with boom clash, available clearances and maximum radius requirements can all be checked prior to commissioning a crane on site. Consequently, the correct crane for the job is always identified in advance.
- Design team have the opportunity to review and nominate any special requirements with special lifts; and
- This new tool is well received by the crane industry.

Contributors

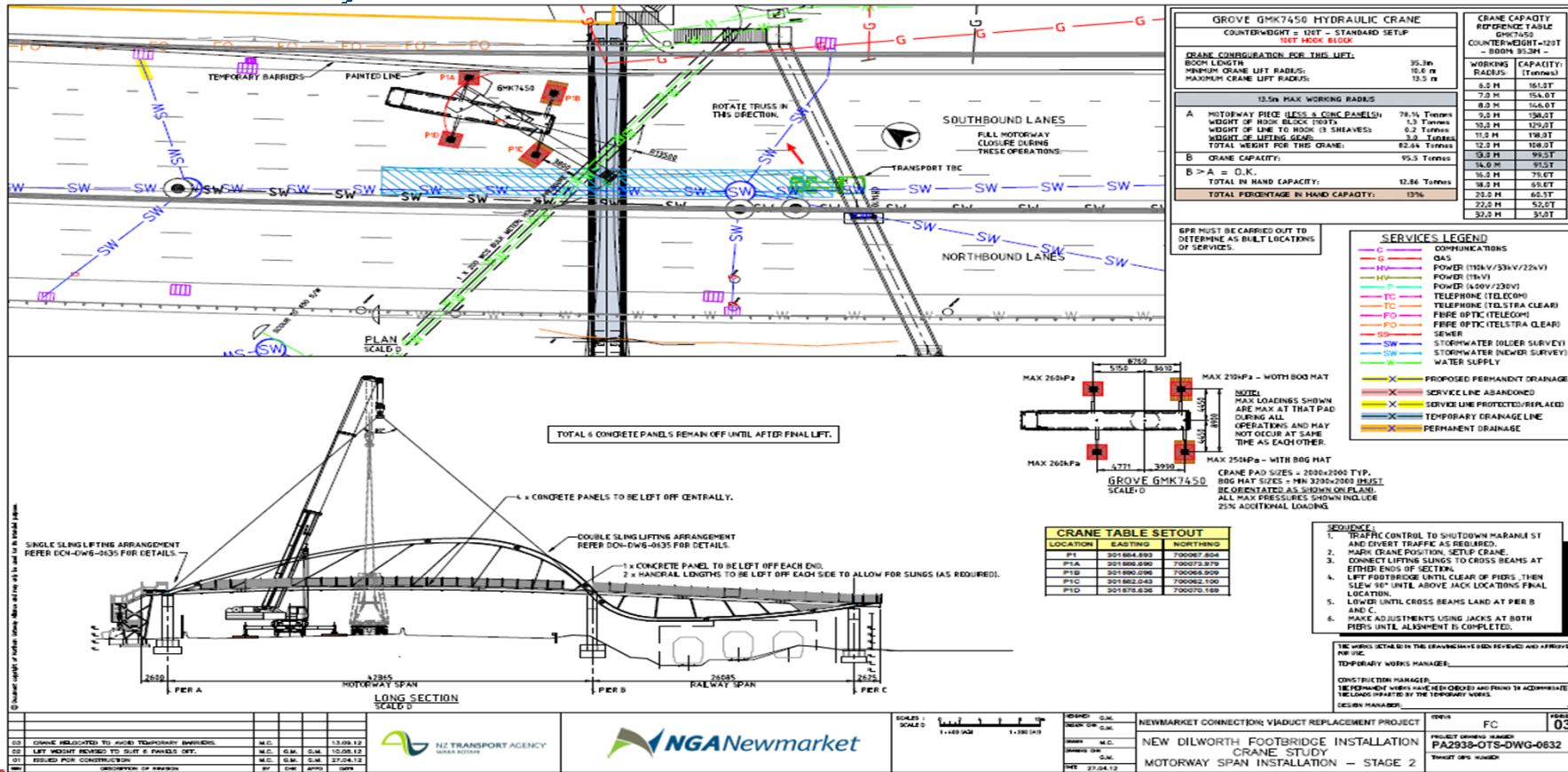
NGA Newmarket Design Team (compiled by Vivianne Tadros)

GMK6300 HYDRAULIC CRANE		CRANE CAPACITY REFERENCE TABLE	
COUNTERWEIGHT = 100T 125T HOOK BLOCK		GMK6300 COUNTERWEIGHT=100T - BOOM: 32.3M -	
RADIUS FOR THIS LIFT:		WORKING RADIUS:	CAPACITY: (Tonnes)
LIFT RADIUS:	32.3m	4.0 M	108.0T
LIFT RADIUS:	6.0 m	5.0 M	108.0T
LIFT RADIUS:	8.3 m	6.0 M	108.0T
8.3m MAX WORKING RADIUS		7.0 M	108.0T
HEAVIEST PIER SECTION (TOP):	79.4 Tonnes	8.0 M	101.0T
HOOK BLOCK (125T):	1.65 Tonnes	9.0 M	92.0T
LINE TO HOOK (5 SHEAVES):	0.5 Tonnes	10.0 M	82.5T
LIFTING GEAR:	1.2 Tonnes	11.0 M	74.5T
GHRT FOR THIS CRANE:	83.75 Tonnes	12.0 M	67.5T
CAPACITY:	98.3 Tonnes	13.0 M	61.5T
HAND CAPACITY:	13.65 Tonnes	14.0 M	56.5T
PERCENTAGE IN HAND CAPACITY:	15%	15.0 M	53.5T
		16.0 M	50.5T
		18.0 M	44.0T
		28.0 M	24.5T



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

Value for Money Initiative: Newmarket Viaduct – Crane Studies



Value for Money Initiative: AN54 Redesigning the Waterview Connection 'muck bin' spoil building

Opportunity

With 800,000m³ of spoil to be processed for the Waterview Connection tunnel, at a rate of 6,500 m³ a day, the WCA team faced a number of challenges trying to find the best way to keep up with the demanding productivity requirements and ensure there was no down time for the Tunnel boring machine (TBM).

Solution

The redesigned spoil building introduces innovations to increase safety, reduce costs, and increase plant efficiency to ensure productivity levels of one truck every five minutes will be able to be met.

New spoil delivery and loading techniques have all but eliminated the risk of down time for the TBM, which would have cost the project \$400,00 a day, by maximising the available storage space and improving truck loading efficiency.

The new design is also a safer and more efficient layout with two fixed loading positions on weigh bridges to ensure trucks are road compliant and provide more space for loader movements.

Finally with local stakeholders in mind the entire plant facility was able to be angled 15m further away from local residents to reduce the impact on those neighbours closest to the project.

Estimated Costs & Benefits

Efficiency savings to overall layout of building, safety improvements for loading and access, and relocating the building further away from local stakeholders will all allow the full potential of the TBM to be realised.

Overall cost saving on the redesigned system will be \$350,000.



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

Contributors

Daniel Patten, Kenji Yamashita, Brent Whiting- Well Connected Alliance

Value for Money Initiative: AN55 Electronic Audit Sheet

Opportunity

During each audit that gets done by the TMC Team / auditor a site rating form needs to be filled in and send off to the contractor. This involves paper work on that night and following up the next day with copying, scanning and sending off, which is often very time consuming.

Solution

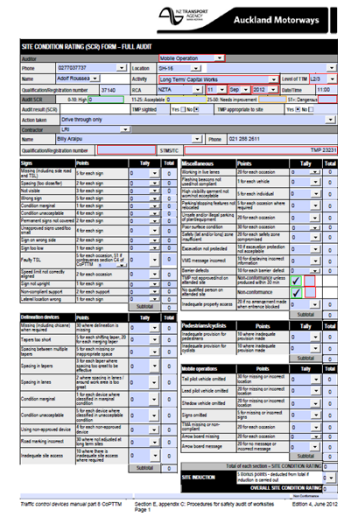
The electronic audit sheets allows the team / auditor to fill in the site rating form form on site on their iPad. By having drop down boxes the sheet can be filled in very quickly. It can then be reviewed together with the STMS on site and send off straight away to the supervisor.

Estimated Costs & Benefits

Reduced time on filling in the paperwork the next day, printing and scanning it as it has all been done on the night.

Contributors

Auckland Motorway Alliance - TMC 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: WBOP19 - TEL- increasing efficiency by using customer insight

Opportunity

The annual TEL Customer Survey provides insight into awareness, interest and support for the TEL, including the effectiveness of the project comms. From the 2012 results interest in the TEL remained high (over 80%) and 45% of those interested wanted more information. This suggested the existing comms medium was inefficient (low reach) and a cut-through issue was identified.

Solution

Historically project updates in the BOP have been printed and inserted into a free local newspaper because of its wide reach. However the TEL inserts weren't getting cut-through. The solution identified was to purchase a centre page spread in the free newspaper to increase visibility, impact and recall.

Estimated Costs & Benefits

There are direct benefits to both NZTA and the customer. For the customer we listened to what they had to say and now deliver communications in a more engaging format. For NZTA the benefits include annual print cost savings of 18k and an environmental impact reduction by reducing the print run from 192,000 to 1,000 hard copies.

Contributors

Kylie Ruegg



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

Value for Money Initiative: WBOP20 Collaborating with a TLA on reseals

Opportunity

- Reduce the admin costs associated with the tendering process
- Let a contract with a greater value which would attract more competitive tenders.
- Improve the relationship with a local Territorial Local Authority.
- Test the water with a view to collaborating on future projects.

Solution

- OPUS, the incumbent consultant for network management was tasked with creating a Heads of Agreement acceptable to both parties.
- The 2012/13 reseals contract was written with the TLAs resealing work included as a separable portion.

Estimated Costs & Benefits

- No financial benefits were realised for the NZTA, however, the tendering process was successful with two bids received.
- The relationship with the TLA has been strengthened.
- It has been proven that collaboration with this TLA is possible and future opportunities are being investigated.

Contributors

- OPUS Whakatane, Whakatane DC, Dilip Datta NZTA, Nigel D'Ath NZTA



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: WBOP21 Ultra Thin Asphalt

Opportunity

The Western Bay of Plenty PSMC Contract KPMs have directed Inroads to resurface some existing dense graded asphalt. New macro texture requirements are not easily achieved with M/10 mixes and the application P/23 and P/11 mixes would come at considerable cost to NZTA.

Solution

Inroads developed a new ultra thin asphalt mix using high performance polymer modified binders. This new asphalt achieves all the performance criteria sought by the new standards.

Estimated Costs & Benefits

The ultra thin asphalt meets the performance criteria sought by the new standards at no additional cost to the NZTA. Also with the asphalt able to be laid thinner, this offers cost savings as well as allowing overlays to be used where conventional alternatives would require inlay treatment.

Contributors

Inroads, Russell Brandon NZTA



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: WBOP22 Modified Bitumen Penetration

Opportunity

Prior to the Western Bay of Plenty 2011/12 sealing season, Inroads post sealing quality assurance found that sites were stripping or flushing due to bitumen that was too hard or too soft.

Solution

A trial was put in place to modify the penetration grade to approximately 100, blending a mix of 80/100 and 130/150 to reduce the stripping and failure rates on the network.

Estimated Costs & Benefits

At this stage, having been through a summer curing and a winter cold snap, the stripping and flushing has virtually been eliminated from sites sealed with the modified bitumen grade, getting better value for money out of chip seals.

Contributors

Inroads, Russell Brandon NZTA



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: WBOP23 VEIM –Video Enhanced Inspection Module

Opportunity

Identifying and marking reactive maintenance repairs on some parts of the Western bay of Plenty state highway network is difficult due to high traffic volumes.

Solution

Significant advancement in the quality and affordability of digital imaging has led Inroads to embark on a replacement system for the laptop inspection module.



Estimated Costs & Benefits

The new system in the inspection vehicles with it's high definition camera, touch screen pads allows for allows for easier and more efficient identification of faults on the network.

Contributors

Inroads, , Russell Brandon NZTA

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