

AsiaPacific

SPRING 2017

# INFRASTRUCTURE



## SHOWING THE WAY TO TOMORROW

SHOULD ALL PUBLIC  
PROJECTS BE PPPS?

BEST CONSTRUCTION  
ACHIEVEMENTS  
APPLAUDED



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# What does a PPP for Dunedin Hospital mean?

*The recent announcement that a public-private partnership (PPP) is to be considered for the new Dunedin Hospital created some media attention, Hamish Glenn notes*

## **With that has remerged the confusion with privatisation and some very selective referencing of PPP performance.**

It seems like a good opportunity to again clarify what a PPP is and what one might mean for a hospital or other public asset.

A PPP is a one way a public agency buys or “procures” infrastructure.

All new major public assets these days must be considered as a PPP.

They are one of the tools in the toolkit and, like alliancing, design and build or traditional contracting, must demonstrate greatest net value to taxpayers before getting the go ahead.

A PPP is a long-term contract to design, build, finance and maintain a public asset, potentially with operation of the asset included.

There is no operational (i.e. clinical services) component to the Dunedin Hospital, so this project will just be evaluated as a ‘DBFM’.

This will still mean the project is procured in a radically different way to, for example, the Canterbury hospital.

Under the more traditional Canterbury model, the government (represented by the Ministry of Health and Canterbury DHB) have paid a designer to design the hospital, paid a builder to build it and, once complete, will contract maintenance companies to keep it in good condition.

## **Problem areas**

This standard type of approach works well most of the time, but problems can arise when projects are especially large and complex.

Sometimes the designer and builder won’t agree.

Costs will go up and timeframes slip.

Other times, the client or the builder might cut back on quality to save money, increasing maintenance costs down the track.

Often, a government agency won’t have money available and so will defer a new build or cut back on maintenance with the result being a shoddy or rundown asset.

Interestingly, in spite of this whole process being managed by public agencies, it is very seldom

that the public will ever be aware of any of these deficiencies.

Project overruns will only hit the headlines when they reach a level which horrifies.

Even then, there is no guarantee anyone will find out.

Overruns are normally the result of some variation or other issue which seems quite understandable, even when it is the result of poor planning and procurement.

It will be even less common for the public to become aware that cost minimisation on construction has led to far greater expenditure on asset maintenance.

Indeed, it is only when buildings start falling apart within a few years that such an issue attracts attention.

Shoddy assets will be blamed on anything from bureaucrats

in 20 years’ time, it is up to them whether they want to lower their initial investment and spend more later, or the opposite.

The public-sector client simply wants, expects and can enforce the outcomes which it contracts.

It’s not the taxpayer who picks up the tab, more often it’s the private partner.

The public sector, in this case the Southern District Health Board, will have just one contract to sign and its formal relationship will be with one party (a private partner representing a consortium of different companies) for the life of the agreement.

Whether a PPP or not, doctors and nurses will continue working for the DHB – it’s just the building and its maintenance which is being procured.

rebuilding the asset and starting over.

This arrangement can be attractive to governments because there is no large upfront capital cost to deal with, meaning public money can be used elsewhere, and if the hospital building has problems it’s the private partner who is liable, not the taxpayer.

## **Proven performance**

Enabling private sector innovation and managing whole-of-life risks effectively is what PPPs are designed to achieve.

It’s the reason why multiple studies from Australia to Canada and even the UK (where a number of flawed PPPs were contracted) have shown that, when procured properly, PPPs do deliver value. They don’t always.

Private sector debt costs more than public sector debt and PPP contracts are expensive to oversee.

The benefits of taking a whole-of-life approach (which are usually the result of efficiencies from bundling design, construction and maintenance) plus the price, timing and quality certainty of a PPP have to exceed this additional cost.

Government officials are diligently looking at whether this is the case for Dunedin Hospital.

They may determine that a PPP is unlikely to deliver this value, for any number of reasons, and so a more conventional approach may be preferred.

Alternatively, the decision may be taken to proceed with a PPP, but the feedback or proposals from tendering parties be such that a PPP does not add value.

Or PPP project tenders may deliver a better 30-year hospital than a 30-year hospital conventionally procured, in which case a PPP will be proceeded with.

As yet, it is not clear what the decision will be, but it is right and proper that they are asking the question.

*Hamish Glenn is Senior Policy Advisor at the New Zealand Council for Infrastructure Development (NZCID)*

## **“Contracting a single party to finance, design, construct and maintain an asset over a long term – 30 or so years – forces a whole-of-life approach to infrastructure which disincentivises corner-cutting”**

for bumbling, politicians for not funding, local providers for lacking competence or just bad luck.

## **Little transparency**

The point here is that there is actually very little transparency in the delivery of most conventionally procured public assets and even less accountability.

The result is that it is the taxpayer who pays, either in higher long-term charges or sub-standard public services.

PPPs are designed to get around these issues.

Contracting a single party to finance, design, construct and maintain an asset over a long term – 30 or so years – forces a whole-of-life approach to infrastructure which disincentivises corner-cutting.

Or more accurately, a well-designed PPP transfers the risk of corner-cutting to the party who cuts the corners.

Because it’s the same party who will be managing the asset

## **Important difference**

It is also important to note the difference between “procured” and “privatised”.

A PPP remains at all times a public asset.

Ownership sits with the crown (or a council, if it is the one buying the asset), the asset remains on the government’s balance sheet and no public service or asset is privatised.

In return for delivering and maintaining the hospital to the required standard, the private partner is paid a fixed amount every month until the contract is complete.

If the hospital isn’t meeting the contracted expectations, the private partner will be paid less until performance is back up to scratch.

Once complete, responsibility for maintaining the asset transfers to government.

At this point, the government will choose between recontracting the same facilities maintenance company to keep the building up to scratch, hiring a new one, or

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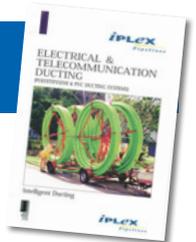
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# Guided bearings point the way to maintenance-free structures

CONSTRUCTION



**Supporting the fluctuating loads carried by conveyors, trucks and machinery imposes demands on the structures supporting them, which must function reliably across a spectrum of shock, impacts and widely varying thermal loads in situations varying from remote facilities to busy port and coal loaders**

One solution to the issues of cost-efficiently achieving reliable load-carrying capacity is provided by Hercules Engineering through its range of Herculon Type D Bearings (HLD/SG, HLD/FF & HLD/FX), which are widely proven on applications ranging from steel and concrete beam and pipeline engineering structures through to materials handling and processing facilities.

Compared with more sophisticated and expensive heavy alternatives, such as pot bearings and roller bearings, HLD bearings offer benefits such as lower initial cost, easier installation and no maintenance for periods of 30 years or more, says Hercules Engineering Manager David Booty.

Available in standard configurations supporting 100-600 kN (60 tonnes) each, the bearings can also be custom-engineered to configurations that best suit installations and site conditions.

Recent pipeline support structures, for example, were used in the refurbishment of existing river crossings, using high-performance combinations of engineered thermoplastics and stainless steel facing surfaces that provide the necessary slip performance but don't break down in the way that earlier types of bearings deteriorate.

**Joint problems**

The problem with many older joints – which are intended to prevent pipelines buckling or cracking as they are subject to shock and vibration or repeatedly heat and cool over many seasons – is that many older types of grease bearings have exceeded their lifespan, corroded, lost their flexibility and bound rigid.

The new bearings, by contrast, were engineered to minimise maintenance and optimise service life by flexibly accommodating the thermal issues and the vertical and horizontal stresses imposed by the shuddering and vibration of varying loads.

Such performance and no-maintenance advantages were

built into HLD/SGU bearings designed recently for conveyor overpasses to serve new heavy-duty resource and bulk handling developments.

These bearings were engineered from mild steel enclosing a sandwich of Teflon on mirror-finish stainless steel bonded to a special grade rubber substratum.

“These particular bearings were designed with built-in restraint mechanisms to ensure flexibility and excellent sliding characteristics in load carrying and thermal performance, but to prevent extreme movement that would compromise the bearing's long-

**The new bearings were engineered to minimise maintenance and optimise service life by flexibly accommodating the thermal issues and the vertical and horizontal stresses imposed by the shuddering and vibration of varying loads**

term performance,” Booty says.

The bearings contained built-in guidance and uplift restraint that:

- prevented excessive movement in the horizontal plane, while still allowing sufficient flexibility to tolerate side loads and the deflection needed to tolerate varying loads without breaking or buckling
- prevented uplift beyond specified limits in the vertical plane, providing restraint when the structure on which they are mounted is subjected to extreme seismic and wind conditions, for example.

Herculon type D sliding bearings – incorporating polymers proven globally for outstanding durability without lubrication or maintenance – were developed to fulfil the need for low-friction bearings on corbels and columns where

continuous slip joints were not appropriate.

Herculon HLD Bearings are part of a comprehensive range of Hercules composite slip joints and structural bearings incorporating engineered high-performance combinations of engineered thermoplastics and stainless steel facing surfaces.

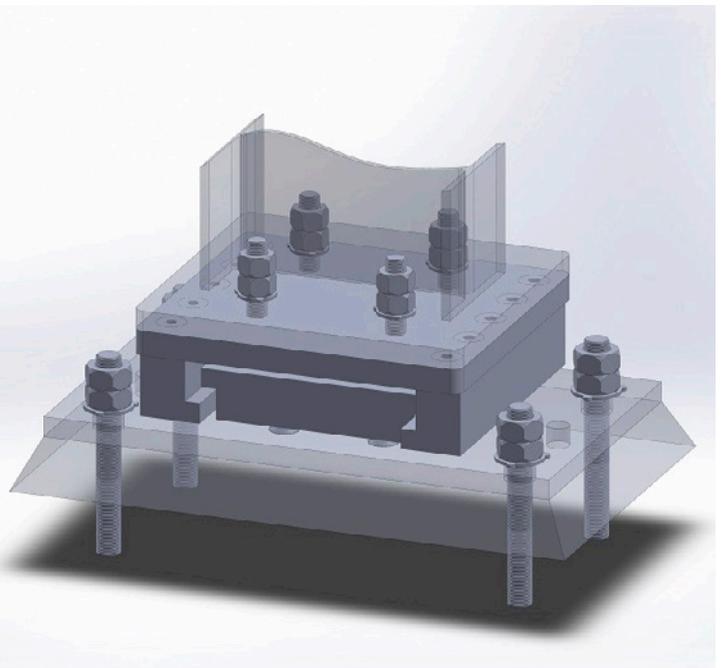
**No-maintenance performance**

Type D Herculon Bearings (HLD/SG) are designed to accept a lateral load of 30 per cent of the vertical rated load, which can be up to 600 kN per bearing in stock sizes, with higher capacity

- maximum temperature 80 deg C (with higher temperatures accommodated by thermally insulating bearings or using high-temperature materials, both as recommended by Hercules).

Hercules Engineering has provided cost-efficient slip joints and bearings to help protect and extend the longevity of landmark buildings and major industrial structures in Australasia, the Asia-Pacific and Africa.

The company has provided long-lasting product for use in structures as diverse as the Sydney Opera House, the Hang Seng



available custom-engineered for specific applications.

They are removable and replaceable, to optimise no-maintenance performance in access infrastructure and high output plant such as mineral processing and oil, gas and energy infrastructure and conveyors in applications extending from ports to power plants.

Performance characteristics include:

- outstanding stick-slip performance, to provide smooth, easy movement under load
- friction co-efficient 0.05 – 0.08 depending on stress
- expansion capacity up to ± 40mm for standard bearings. (Larger movements can be accommodated upon request)
- maximum contact stress 10-12 MPa
- maximum rotation up to 0.02 radians

bank in Hong Kong, Australia's New Parliament House in Canberra and the world's largest copper mine, Kansanshi, in Zambia.

Hercules has just released a new technical brochure which includes recommended slip joint solutions for optimum cost-efficiency and durability for buildings ranging from hospitals and shopping centres, carparks, transport terminals, office towers and warehouses through to factories, storage tanks, silos, boilers, smaller bridges (to 60 tonnes) and industrial and resources plants.

Included is advice for technologies required for different types of structures located across areas of widely differing climatic and geographic diversity, ranging from the arid Australian Outback to Africa, Melbourne to Brunei, tropical and maritime.

# Smart transport demands equally smart responses

INFRASTRUCTURE



**New Zealand is poised on the brink of an exciting new transport era, Ministry of Transport Deputy Chief Executive Andrew Jackson believes**

The future of transport in New Zealand is sustainable and smart, he told the Avantedge New Zealand Transport & Infrastructure Summit.

“Data based, customer-centric and intelligent vehicles will change the transport environment beyond recognition over the next 20 years,” Jackson maintains.

“They will completely transform travel and commuting patterns while still maintaining the current focus on cost, comfort and convenience.”

He cites as an example of future benefits the cost of travel in Wellington city, where the convenience and comfort of commuting by private car in 2016 meant 70 per cent of Wellington commuters were willing to pay a daily \$14 premium over and above the cost of public transport.

However, the relative costs will be reversed by 2035, as the forecast price of using fleets of autonomous, electric vehicles for the daily commute will reduce to \$1.50 each way, a fraction of the cost of traditional forms of public transport.

“Given these figures, we expect to see a much greater number of private fleets transporting people around cities,” Jackson predicts.

**Revised role**

This will also change the government’s transport role, and it may no longer need to continue the current approach of providing funding for private transport and regulating for carbon from passenger transport.

“Instead, the focus of government will be managing demand on the network to ensure lower prices do not clog up the network.

“Government will provide both physical and virtual infrastructure, and it will need to consider its role in achieving health outcomes as the temptation to be driven increases.”

The decrease in costs of EVs and their low running costs means that these autonomous fleets will be electric.

“Traditionally we have had separate regulators for different modes of travel. But all are moving towards autonomous control.

“This in turn begs the question of how we will build the capability to regulate this new technology,”

Jackson believes.

“Will we need a single cross-agency capability to regulate intelligent vehicles cross land, sea and air to support?”

There is also the question of who should deliver the virtual infrastructure to support the new mobility services.

This is often referred to as Mobility as a Service (MaaS) and there is often confusion about what this means.

Jackson thinks there are five different levels of MaaS.

The first two levels relate to the interface with the customer - information of available transport choices and common payment platforms.

“The next three relate to the transport system itself: coordination of the various transport services (will the bus timetable connect with the rail timetable?), management of the services in the form of pricing and finally the integration of the services delivered by all of the different providers.

“Will there, for example, be “one algorithm to rule them all?” Jackson asks.

**Investment emphasis**

Transport also currently comes at a significant cost of lives.

The experts expect AV fleets could see a 90 per cent reduction in the number of fatalities.

Some 1.3m people died last year in car accidents, close to the size of the population of Auckland!

Even if the outcome is only half as good as some hope, this still suggests that this is a future worth working towards.

This would not mean we would forget about transport health issues in this potential future world, Jackson believes.

“Very cheap travel could further reduce the amount of exercise we take each day,” he notes.

The average New Zealander only walks eight minutes a day to get to places – an AV EV fleet world could see this decrease further, with consequential harm.

Denmark is trying to overcome this problem trialing one-kilometre car exclusion zones around schools so that the pupils have to walk at least two kilometres each day.

“As we think about the future

**“Will we need a single regulator for intelligent vehicles across land, sea and air?”**

should our goal be reducing congestion or improving access?

“If access is our goal we should consider whether we can join up our approaches on land use, transport and telecommunications better to enable us to reach people, goods, services and opportunities?” Jackson asks.

These vexing questions aside, his faith in the future of smart, sustainable transport is further strengthened by the success of experiments such as an agent-based simulation of current transport patterns in Lisbon that reviewed real trips on a detailed transport model.

The three-mode configuration comprising the metro, shared taxis and taxibuses showed no congestion even at peak time – in fact, vehicles per kilometre was 37 per cent lower than at present.

Vehicle emissions were also significantly lower, some 34 per cent lower than currently due to the reduced number of vehicles per kilometre, with even better figures predicted medium and long term thanks to faster fleet turnaround.

“The two-mode configuration results were also very good in terms of reduction of emissions and congestion,” Jackson adds.

The study also found that demand-responsive transport generates much more equitable levels of accessibility across the city.

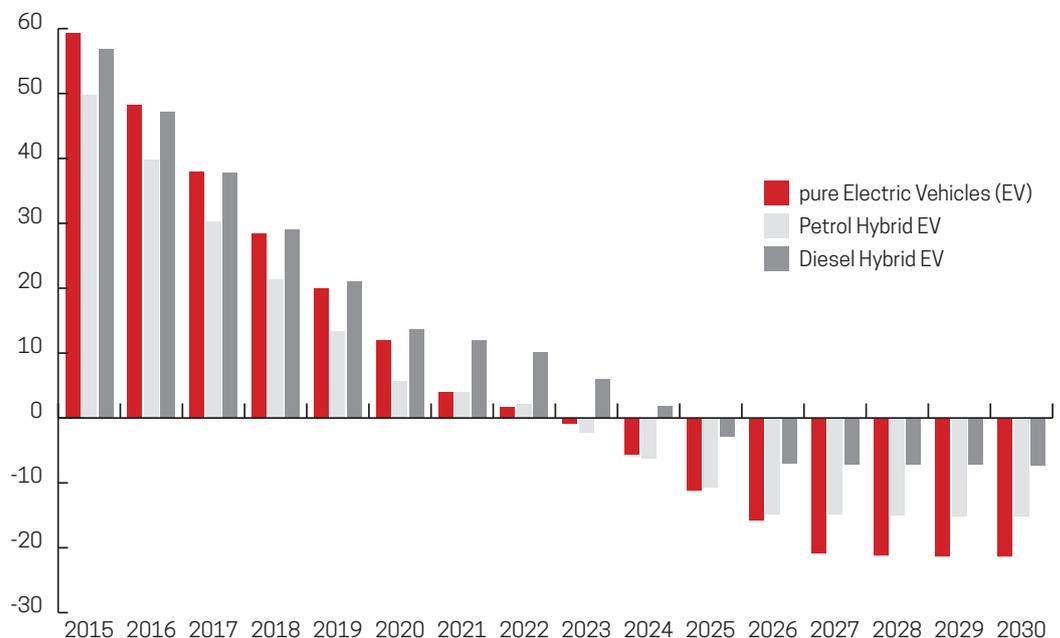
Retaining some private car trips reduces the overall transport system efficiency but facilitates public acceptance and transition into a system mostly based on shared rides.

Peak-hour vehicles per kilometre dropped from 98 per cent to 63 per cent when private car numbers fell from 60 per cent of the vehicle fleet to zero.

CO2 emissions were similarly slashed from 97 per cent to 66 per cent in the same scenario, while the percentage of car parking spaces released rose from 38 per cent to 97 per cent.

“The future of transport in New Zealand can therefore be sustainable and smart - our challenge is to prepare the groundwork to make that happen,” Jackson concludes.

**New electric vehicle four year ownership compared with internal combustion engine**





# Rebuilding Christchurch for the 21st century and beyond

## It's been a steady path to recovery for the Garden City, with both challenges and opportunities and exciting plans for the future

"What shapes a city in the 21<sup>st</sup> century?" Christchurch City Council Infrastructure, Transport and Environment Committee Chair Pauline Cotter asked Avertedge's New Zealand Transport & Infrastructure Summit.

"There is a variety of factors, including climate change, rapid urbanisation, public health concerns and financial recession," Cotter believes. "Disruption is effectively the new normal."

Christchurch certainly experienced more than its fair share of disruption following the 2010 and 2011 earthquakes, but has been busily redefining itself as

an Accessible City that features an eclectic blend and careful balance of green infrastructure, technology and trials and community innovation.

"The call to action for change after the earthquakes included interpreting transport as part of city building by putting people at the centre, innovating and developing streetscapes for both people and traffic," she says.

The Accessible City concept called for:

- streets with multiple main bus routes to be prioritised for buses, with other vehicles encouraged onto 'distributor' streets
- improved pedestrian facilities across the central city, and particularly in the core, on main streets, within the

frame and within the Te Papa Ōtākaro/Avon River Precinct

- prioritised cycle routes connected to the wider Christchurch cycle network to provide good access to the central city and the core, with other streets providing for cyclists where possible
- encouraging vehicles travelling into the central city and the core onto distributor streets that lead off the avenues
- retaining most of the existing one-way streets to ensure vehicles can access the central city easily
- upgrading the avenues to improve travel around the central city
- instituting an overall one-network approach to minimise mode conflicts and provide

more enjoyable journeys for different types of users.

This would create a more cycle-friendly and walkable city by creating shared spaces for cycling and walking and putting traffic-calming measures including lower speed limits in place; a cultural shift that as *The Press* newspaper noted in April meant "commuters may have to divorce their cars".

However, consultation had shown that many people were unhappy with the current vehicular relationships, and that they wanted more travel choices.

The plan was about offering mutually beneficial outcomes by providing compelling transport alternatives, not leaving commuters with postnuptial heartbreak.



Christchurch Convention and Exhibition Centre



Typical central city street – before



Typical slow Core street – after

## Green growth

A key element in the city's rejuvenation plan was using green infrastructure to combat hazards via initiatives such as the Woolston Urban Forest. This will transform a 2.7-hectare urban area into a forested wetland reserve with native trees and plants that will become home to the bellbird, kereru, fantail and eventually tui, kakariki and kaka.

Part of the \$9 million Bells Creek flood mitigation scheme to reduce the frequency and severity of flooding in the area and benefit at least 119 properties at risk of flooding, the forest will be dominated by kahikatea, totara and matai trees.

The Accessible City project is also seizing other opportunities by repairing streets as well as:

- installing swales and rain gardens
- improving central city streetscapes and the public realm such as the Avon river
- creating a city of trees
- enabling efficient ground source heating.

## “The call to action for change after the earthquakes included interpreting transport as part of city building by putting people at the centre, innovating and developing streetscapes for both people and traffic”

### Technology trials

Technology hasn't been forgotten with such innovations as a three-month trial of the “smart bins” fitted with sensors that can detect when the bins are nearing capacity and send an alert to maintenance contractors that they need emptying.

The solar-powered bins stop seagulls, wind and pests from accessing the waste and they also have a built-in compactor that crushes the rubbish, giving them a

capacity six times greater than a standard waste bin.

The city also is gearing up for a pilot with bin sensors that will detect volume, heat and tilt, which make pickup more efficient because contractors will know specifically which bins need to be emptied and which ones get the most use.

“We've also initiated New Zealand's first autonomous vehicle trial at Christchurch International Airport, with the electric-powered Smart Shuttle that can carry up to 15 people,” Cotter adds.

Other developments include:

- Bluetooth sensors on disabled car parks, which pair with a portable chip given to those who have passes to use them
- three eight-metre-tall transitional wayfinding towers to help people find the places they want to visit in a city that lost many of its landmark buildings in the earthquakes
- transitional projects – a series of works to enhance the central city while longer-term projects come to fruition by transforming vacant spaces into such community events and attractions as a sonic arts festival, pop-up concerts and temporary markets
- expressions of interest for a shared 100 per cent battery electric, zero tailpipe emissions, compact car fleet (Shared Fleet) service for Christchurch

organisations and residents

- smart sensors that can gather data in real-time on how cities are functioning and are part of Land Information New Zealand's (LinZ) Smart City coalition
- a sensor network with several different applications, including monitoring air quality, with the information to be fed into the central SmartView electronic system available to all residents
- Wi-Fi sensors to monitor pedestrian flow in the central business district.

### Community innovation

“We also developed and introduced numerous community-based initiatives including Park-ing day, which gives local residents the chance to transform a small spot in the city from a parking space to an active public space for the day and be part of an annual global event,” Cotter adds.

RAD or Recycle A Dunger bikes is a not-for-profit community bike shed in central Christchurch, a workshop space where anyone can build or repair a bicycle for themselves and/or help restore bikes to give away.

Similar projects include Frocks on Bikes, which as the name suggests encourages women to cycle, as well as Go cycle, a new initiative designed to help people overcome barriers to cycling as a mode of transport.

The council's encouragement of cycling as a major form of urban

transport has also led to the Spark bike share programme, a two-year trial of a system that links key sites within the Christchurch CBD, allowing people to move easily between businesses and local attractions. A spinoff of the pilot brought two smart bikes over from Germany to be tested with the public transport card.

"Metrocard holders use their cards to catch the bus into the central city and then use it to hire a bicycle to get around," Cotter explains.

Elsewhere, the Super Street Arcade that is the world's first giant, outdoor arcade game system has proved extremely popular with both residents and visitors.

Super Street Arcade takes gaming to a new level with an oversized joystick that needs two or three people to work the controller and a 5m-wide screen mounted on a nearby building.

"It encourages participants to get active as they move the giant joystick and jump on the oversized buttons to play one of the unique classic-style retro games," Cotter says.

Progress is equally visible in areas such as the two-way streetscape enhancements in Lichfield Street and 'Copenhagen-style' cycle lanes, separated cycleways, not mention a number of anchor projects including the 21<sup>st</sup> Knowledge Centre and the Metro Sports facility.

"The Knowledge Centre is Christchurch's new central library, a five-story building that will be the largest facility of its kind in the South Island when it opens in 2018," Cotter notes.

"At 9,850 square metres it will be more than a third larger than the original library, which was badly damaged by the 2010 earthquake."

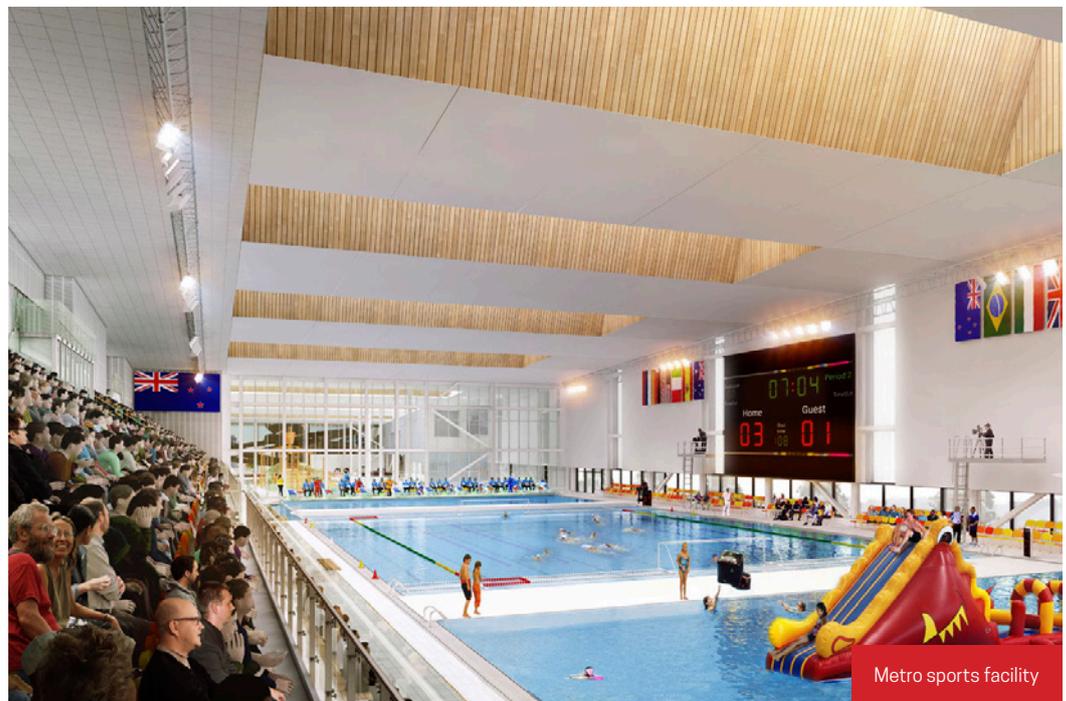
A light-filled central atrium will lead people up through the library, enabling connectivity between various levels that include an innovation zone with 3D and laser printers, music and video editing studios, a 200-seat arena, children and family areas, a dedicated reading room, café, and even two large outdoor terraces.

"The Knowledge Centre is one of the Christchurch Central Recovery Plan's anchor projects, and the only anchor project over which Christchurch City Council has complete control," Cotter notes.

Equally ambitious and impressive is the 34,000-square-metre Metro sports facility that will be the largest aquatic and indoor



Christchurch's new central library



Metro sports facility

recreation and leisure venue of its kind in New Zealand when it opens in early 2020.

The new facility's features will include:

- a 10-lane, 50m swimming pool and a separate diving pool, with 1000 spectator seats
- a large leisure pool
- five hydrosides
- a learn to swim pool
- an aquatic sensory facility
- a birthday party room
- a warm water pool
- spa pools/saunas/steam rooms
- multipurpose indoor courts with capacity for nine netball courts
- 2500 retractable seats in the show court

- a gym/weights facility
- group fitness rooms
- health and wellness facilities
- a movement centre
- a high-performance sports centre
- Sports House – a shared administration area for regional sport
- VIP and media areas
- a café
- and a childcare facility.

Given these impressive developments an observer would be forgiven for asking what's next for Christchurch – will it be a market town as before or a mini city, feature cheaper residential

suburbs or offer better access to knowledge and workers?

"The latest December 2016 statistics show Christchurch's population exceeding 400,000 people by 2023, so the city's future development will certainly require serious thought," Cotter admits.

In the meantime, the council aims to let the dust settle, celebrate the wins to date and build and expand on the successes.

"We'll continue to monitor and evaluate, embrace technology and innovate, look to the future and prepare to be nimble," Cotter promises.

# Meeting tomorrow's transport and infrastructure needs today

**New Zealand's biggest city is preparing for unprecedented transport spend to match its booming growth, according to Auckland Deputy Mayor Bill Cashmore**

Implementation of the Auckland Transport Alignment Project will show the benefits of collaboration with central government, he believes.

"The Future Urban Land Supply Strategy, Supporting Growth Plan, and Unitary Plan give us the full picture of how we will grow," explains Cashmore, who was addressing the Avertedge New Zealand Transport & Infrastructure Summit.

"However, funding constraints are pushing us to consider new ways of delivering growth infrastructure."

## **Auckland transport council funding diagram**

"Our transport demand is higher than we realised when preparing the 2015 Long Term Plan," he admits.

"The net result is we have a transport capex shortfall of between \$4 and \$7bn."

The council is equally frustrated when it comes to transport planning, although the Auckland Transport Alignment Project has agreed the projects and the Future Urban Land Supply Strategy and Auckland Unitary Plan have indicated where the infrastructure needs to be developed.

"There is uncertainty behind delivering our plans. To effect real change, we will need Aucklanders to change the way they travel.

"We may also be relying on technology that doesn't exist yet, or hasn't been proven, Cashmore adds.

"We are seeking funding from government and the private sector, but funding limitations and political will determine what we can achieve."

## **Auckland Transport Alignment Plan: key milestones, goals and priorities**

Given the funding, the council has an ambitious programme of key



milestones, goals and priorities set by the Auckland Transport Alignment Project (ATAP) in a series of 2016 reports.

The initial foundation report in February 2016 outlined the challenges, the interim report in June that year tested the options and the final report outlining the strategic approach and indicative package in September 2016 advised maximising new opportunities to influence travel demand, targeting investment to the most significant challenges and making better use of existing networks.

Essentially the ATAP recommended that the government and Auckland Council implement the strategic approach by:

- reflecting the strategic approach in statutory documents
- considering options for addressing the funding gap
- laying the groundwork for smarter transport pricing
- ensuring supportive investment processes
- taking steps to maintain ongoing alignment
- completing work on priority actions as soon as possible.

The indicative investment package's early priorities for completion in the first decade includes:

- the Northwestern Busway (Westgate to Te Atatu section)
- addressing bottlenecks on the Western Ring Route (SH20

## **"We are seeking funding from government, but political will determines what we can achieve"**

Dominion Rd to Queenstown Rd) and Southern Motorway (Papakura to Drury)

- new or upgraded arterial roads to enable greenfield growth in priority areas
- protecting routes and acquiring land for greenfield networks
- completing the SH16 to SH18 connection
- Early Rail Development Plan priorities
- upgrading eastern airport access (SH20B)
- investments to enable smarter pricing
- increasing investment in Intelligent Network Management
- progressing advance works on medium-term priorities.

The transport problem is further compounded by the city's ongoing growth. "An average week sees 825 new residents arrive, 472 new jobs created, 278 new dwellings required and 52 additional students enroll in our various educational institutions," Cashmore reveals.

Technology is on an equally impressive expansion curve.

"Auckland has high market potential and competitive position for companies in augmented and virtual reality, finance, big data, robotics, and health IT," he maintains.

"Auckland's tech sector contributes \$8bn GDP and employs 48 per cent of the New Zealand tech workforce, while investment is high thanks to trade partnerships."

These partnerships include a recent delegation to Shanghai, Suzhou, and Singapore.

"This primarily involved learning and connecting with companies that have successfully implemented the types of projects we're considering," Cashmore says.

Funding responsibility for nationally or regionally significant projects may give the council more spending headroom, he believes.

"Public-private partnerships are not well used in NZ but have potential," Cashmore says, while the City Rail Link is a partnership between council and central government that could be replicated in future if there is the political will.

Growth is ultimately a challenge and an opportunity, he says, but delivery demands innovation and partnerships.

"We welcome 800 new Aucklanders every week and have a \$3 billion capex every year, so it's essential that we begin planning and developing tomorrow's transport needs today."

# New Zealand's hidden liability

*While some politicians argue that water is bountiful in this country, in that it regularly falls out of the sky, the reality is that in many parts of New Zealand we are reaching the limits of resource capacity*

**The current model of regulating the use of water through the RMA has arguably reached its limit, and it would seem that appropriate pricing signals for using water needs to be added to the public policy framework.**

The time has come for business, farmers, city folk and others who have had comparatively free and unconstrained access to water for industry, agriculture or domestic use to start paying the true cost of the resource.

Importantly we need a pricing regime that will lead to the sustainable use of water by all, and which includes the cost of mitigating the impact of water use on the physical environment.

We need to start rationing by price.

Safe, clean drinking water and its disposal as waste water are fundamental to public health.

It has been the basis of modern civilisation, and critical to the growth of cities around the globe.

In New Zealand, the provision of safe drinking water and the disposal of waste water is a core service of local government.

But, with notable exceptions, local government is failing to discharge this core public health responsibility.

And arguably so are our central government institutions.

## Serious failings

A recent Insight programme on Radio NZ identified a litany of issues with drinking water safety in communities as diverse as Punakaiki on the West Coast to the much publicised failures in Havelock North.

In the latter case we are familiar with the fact that 5500 people in Havelock North were made ill by campylobacter in the council water supply, with 55 people hospitalised.

However, four years of boil water

notices in places on the West Coast, including Punakaiki where over 500,000 tourists visit each year, is less well known but equally serious.

The New Zealand Ministry of Health Annual Drinking Water Survey 2015-2016 published in April 2017 noted that of the registered network drinking water supplies that served populations of more than 100 people, barely 80 per cent of consumers received drinking water that met all the standards (bacteriological, protozoal, chemical, water safety).

Nearly a million people in New Zealand receive water below required drinking water standards.

And very significantly three per cent of total water consumers are periodically exposed to substandard treatment of bacteria, the most important of the criteria.

More than 600,000 people received water that failed standards for gastroenteritis-causing protozoa such as giardia or cryptosporidium.

Contrast these compliance levels for public drinking water with the UK, where over 99 per cent of water routinely meets these standards.

New Zealand is playing Russian roulette with our public health and our international reputation.

I don't have the full answers to the contrasting compliance levels between New Zealand and the UK, but I have long suspected that governance of the water supply and waste disposal systems is a contributing factor.

## Big backlog

What I am aware of is that local government in New Zealand has a huge backlog of investment in its water and waste water treatment networks.



## “New Zealand needs to rationalise its delivery of its water supply and disposal networks, modelled on Watercare”

Part of the reason is that, apart from an occasional public health breakdown, water and waste water is largely an asset class outside the day-to-day thinking of our community and therefore our politicians.

Notwithstanding the overwhelming public evidence of the need for substantial investment, it is largely an asset which is ‘out of sight’.

It is a not sexy asset when compared with readily visible investment in roads, public transport or community facilities such as libraries, as important as they all are.

Being a long-life asset, investment in the water network is easy to defer.

And being largely funded through

rates, the pressure from ratepayers ensures that this asset class almost always suffers when it comes to council Annual and Long Term Plans (LTPs).

Much of the underinvestment in water systems in New Zealand is found outside our major cities.

Typically New Zealand has large geographically-spread district councils, typically with one provincial city, but with many standalone water and waste water systems across numerous small towns and townships.

These networks are expensive to build and maintain.

Taking Northland local government as an example, councils such as the Far North District and Kaipara struggle to maintain barely adequate investment in ageing infrastructure with comparatively high debt, high rates and a constrained rating base.

The Long Term Plan for the Far North District Council states that ‘the cost of operating and/or improving the infrastructure may exceed the community’s ability to pay’ and ‘the ability of the infrastructure to meet the demand



Nearly a million people in New Zealand receive water below required drinking water standards

for water may cause difficulty, and hardship in the community’.

Kaipara has yet to have a full stocktake of its assets in water and waste water. Much of its infrastructure is old.

This is not a criticism of either of these councils.

### Government guidance

A good look at their respective LTP’s and Thirty Year Infrastructure Plans clearly outlines a compelling narrative that we need a step change in the delivery of our water and waste water networks, and that significant investment from central government will be necessary to lift our compliance levels for water to recognised international levels.

I am confident that the issues of Northland are typical for many other parts of New Zealand.

Minister Tolley recently launched a ministerial review into drinking, storm and waste water.

The review refers to system-wide performance problems and says its findings would point the way forward.

The Auditor General has indicat-

ed that water supplies, including drinking water, are a focus of its office this year.

And we await the second investigation of the inquiry into the Havelock North water crisis.

One can only hope that these investigations, reviews and inquiries will lead to some action by the central government.

### Fundamental reform

My view is that we need a fundamental reform of the governance of water supply and waste water in New Zealand.

The current model of direct local government stewardship is not working.

We already have the model in New Zealand of an efficient and effective governance model, notably Watercare in Auckland.

Its scale and delivery model is of an international size and performance.

While the CCO model is generally unpopular amongst local government, in Auckland the model delivers results.

A critical factor, and why Auckland consumption of water per

head is the lowest in New Zealand, is the use of volumetric charging as the funding model.

Appropriate pricing drives consumer behaviour.

In the UK, with its high compliance standards, water and waste water networks are managed by public and private entities of scale.

Scotland has one publicly-owned water company for the whole of its five million people.

New Zealand needs to rationalise its delivery of its water supply and disposal networks, modelled on Watercare.

### Regulator required

I believe this country only needs two or three similar organisations, publicly owned, with an effective central government regulator.

The regulator needs to be separate from the Ministry of Health.

Ownership of the assets could be a mixture of central government, local government and Iwi.

Governance would be by appointed boards, subject to the rigours of company law including health and safety regimes.

Change in our water and waste

water would be a huge but necessary challenge.

Local government will resist change as it will be seen as a loss of a significant asset class from their balance sheet.

But local government is a steward of assets, not strictly an owner.

It should be prepared to look at the wider interest of our nation’s public health, and look to more effective delivery models.

And we already have a successful model for over one-third of New Zealand’s population.

Do we have the ability to act? I hope so.

We need to turn our water and waste water infrastructure into a genuine community asset, not the hidden liability it is today.

*Leigh Auton is a former Local Government Commissioner and a Director of Auton & Associates with 35 years’ local government experience, a chairman/director/trustee on several boards and provides consulting advice to public and private sector companies*

# How the world could be powered

*The latest roadmap to a 100 per cent renewable energy future from Stanford's Mark Z. Jacobson and 26 colleagues is the most specific global vision yet*



**The findings outline infrastructure changes that 139 countries can make to be entirely powered by wind, water, and sunlight by 2050 after electrification of all energy sectors.**

Such a transition could mean:

- less worldwide energy consumption due to the efficiency of clean, renewable electricity
- a net increase of over 24 million long-term jobs
- an annual decrease in 4-7 million air pollution deaths per year
- stabilization of energy prices
- and annual savings of over \$20 trillion in health and climate costs.

The challenge of moving the world toward a low-carbon future in time to avoid exacerbating global warming and to create energy self-sufficient countries is one of the greatest of our time.

The roadmaps developed by Jacobson's group provide one possible endpoint.

Their assessment includes:

- the raw renewable energy resources available to each of 139 countries
- the number of wind, water, and solar energy generators needed to be 80 per cent renewable by 2030 and 100 per cent by 2050
- how much land and rooftop area these power sources would require (only around 1 per cent of total available, with most of this open space between wind turbines that can be used for multiple purposes)
- and how this approach would reduce energy demand and cost compared with a business-as-usual scenario.

"Both individuals and governments can lead this change," says Jacobson, director of Stanford University's Atmosphere and Energy Program and co-founder of the Solutions Project, a US non-profit educating the public and policy-

makers about a transition to 100 per cent clean, renewable energy.

"Policymakers don't usually want to commit to doing something unless there is some reasonable science that can show it is possible, and that is what we are trying to do."

There are other scenarios, he admits.

"We are not saying that there is only one way we can do this, but having a scenario gives people direction."

## **Comprehensive analysis**

The analyses specifically examined each country's electricity, transportation, heating/cooling, industrial, and agriculture/forestry/fishing sectors.

Of the 139 countries - selected because they were countries for which data were publicly available from the International Energy

Agency and collectively emit over 99 per cent of all carbon dioxide worldwide - the places the study showed that had a greater share of land per population such as the US, China and the EU are projected to have the easiest time making the transition to 100 per cent wind, water, and solar.

Another learning was that the most difficult places to transition may be highly populated, very small countries surrounded by lots of ocean, such as Singapore, which may require an investment in offshore solar to convert fully.

As a result of a transition, the roadmaps predict a number of collateral benefits.

For example, by eliminating oil, gas, and uranium use, the energy associated with mining, transporting and refining these fuels is also eliminated, reducing international

# led by renewable energy by 2050



power demand by around 13 per cent.

Because electricity is more efficient than burning fossil fuels, demand should go down another 23 per cent.

The changes in infrastructure would also mean that countries wouldn't need to depend on one another for fossil fuels, reducing the frequency of international conflict over energy.

Finally, communities currently living in energy deserts would have access to abundant clean, renewable power.

"Aside from eliminating emissions and avoiding 1.5°C global warming and beginning the process of letting carbon dioxide drain from the earth's atmosphere, transitioning eliminates 4-7 million air pollution deaths each year and

**"The overall cost to society in terms of energy, health, and climate of the proposed system is one-fourth of that of the current fossil fuel system"**

creates over 24 million long-term, full-time jobs by these plans," Jacobson says.

"What is different between this study and other studies that have proposed solutions is that we are

trying to examine not only the climate benefits of reducing carbon but also the air pollution benefits, job benefits, and cost benefits."

The *Joule* paper is an expansion of 2015 roadmaps to transition each of the 50 US states to 100 per cent clean, renewable energy and an analysis of whether the electric grid can stay stable upon such a transition.

Not only does this new study cover nearly the entire world, there are also improved calculations on the availability of rooftop solar energy, renewable energy resources, and jobs created versus lost.

## World view

The 100 per cent clean, renewable energy goal has been criticized by some for focusing only on wind, water, and solar energy and excluding nuclear power, "clean coal," and biofuels.

However, the researchers intentionally exclude nuclear power because of its 10-19 years between planning and operation, its high cost, and the acknowledged meltdown, weapons proliferation, and waste risks.

"Clean coal" and biofuels are neglected because they both cause heavy air pollution, which Jacobson and coworkers are trying to eliminate, and emit over 50x more carbon per unit of energy than wind, water, or solar power.

The 100 per cent wind, water, solar studies have also been questioned for depending on some technologies such as underground heat storage in rocks, which exists only in a few places, and the proposed use of electric and hydrogen fuel cell aircraft, which exist only in small planes at this time.

Jacobson counters that underground heat storage is not required but certainly a viable option since it is similar to district heating, which provides 60 per cent of Denmark's heat.

He also says that space shuttles and rockets have been propelled with hydrogen, and aircraft companies are now investing in electric airplanes.

Wind, water, and solar can also face daily and seasonal fluctua-

tion, making it possible that they could miss large demands for energy, but the new study refers to a new paper that suggests these stability concerns can be addressed in several ways.

These analyses have also been criticized for the massive investment it would take to move a country to the desired goal.

## Costs cut

Jacobson says that the overall cost to society (the energy, health, and climate cost) of the proposed system is one-fourth of that of the current fossil fuel system.

In terms of upfront costs, most of these would be needed in any case to replace existing energy, and the rest is an investment that far more than pays itself off over time by nearly eliminating health and climate costs.

"It appears we can achieve the enormous social benefits of a zero-emission energy system at essentially no extra cost," says co-author Mark Delucchi, a research scientist at the Institute of Transportation Studies, University of California, Berkeley.

"Our findings suggest that the benefits are so great that we should accelerate the transition to wind, water, and solar, as fast as possible, by retiring fossil-fuel systems early wherever we can."

"This paper helps push forward a conversation within and between the scientific, policy, and business communities about how to envision and plan for a decarbonized economy," writes Mark Dyson of Rocky Mountain Institute, in an accompanying preview of the paper.

"The scientific community's growing body of work on global low-carbon energy transition pathways provides robust evidence that such a transition can be accomplished, and a growing understanding of the specific levers that need to be pulled to do so.

"Jacobson et al.'s present study provides sharper focus on one scenario, and refines a set of priorities for near-term action to enable it."

**Read the full *Joule* paper [here](#).**

# Civil Defence review aims for better emergency response

*Water New Zealand has joined forces with the Engineering Leadership Forum (ELF) to develop a submission to the government's civil defence review, John Pfahlert explains*

**The review will provide advice to the Minister of Civil Defence (MCDEM) on the most appropriate operational and legislative mechanisms to support effective responses to natural disasters and other emergencies in New Zealand.**

The purpose is to ensure that New Zealand's emergency response framework is world leading, and well placed to meet future challenges.

In light of recent events it is appropriate to see how we can further enhance and strengthen the current system.

## **Surge capability**

In disasters, territorial authorities need support that integrates into existing business processes, operational frameworks and organisation culture without causing disruption and dysfunctionality.

ELF recommended the creation of properly trained teams of experts to be deployed by the Ministry of Civil Defence and Emergency Management (MCDEM) to assist local authorities and lifeline utilities, and to take over regional controller roles in significant emergencies.

This is what we have called surge capability.

The surge capacity should come from civil defence and emergency management leaders.

They should be properly trained, including in 'judgement and decision-making'.

However, there are no schools that currently teach that in New Zealand.

## **Training**

Our submission suggested that there needed to be a system of centralised civil defence training re-established in New Zealand.

MCDEM should reopen the civil defence training school that once existed in New Zealand.

The surge capacity needs leadership training for situations which are overwhelming.

The problem with the modern training is that it doesn't deal with situations where resources

and capability to respond are overwhelmed, and don't teach understanding of judgement with limited information.

Since the 2010/11 earthquakes, a new and comprehensive Controller's Training Programme has been established and run out of Massey University.

This is a three-stage programme commencing with six- to-eight-week course of self-directed study supported with an online series of videos, exercises, resources and networking forums with the training cohort.

This is followed by a week-long residential component of lectures, presentations and exercises, and is followed up with a personal development plan and learning journal.

While this is an excellent course, there are concerns from smaller councils about the cost and time

**"The Ministry of Civil Defence and Emergency Management should be tasked and funded to deliver a national civil defence and emergency management (CDEM) training programme for both CDEM professionals and prospective volunteers"**

commitment required from their staff with CDEM functions.

MCDEM should be tasked and funded to deliver a national civil defence and emergency management (CDEM) training programme for both CDEM professionals and prospective volunteers.

CDEM leaders, specifically MCDEM, need to be operationally focused, and engaged in training and capability building, establishing minimal requirements for councils and utilities for compliance



with the act, and implementing compliance audits.

## **Risk reduction**

The CDEM system is wholly focused on the improvement of emergency preparedness and response. In our view, risk reduction initiatives can substantially reduce the impact of natural events on communities and should be an important and mandated part of CDEM processes.

The act requires utilities to be resilient, but there is no systematic assessment of utility resilience, nor of the resilience of utility systems.

Furthermore, one of the most serious deficiencies in the current CDEM system is the lack of incentives and process to enable lifeline utilities to be more resilient and to improve the resilience of their networks.

Utilities should be encouraged to deal with these issues as building resilient systems can involve quite different programmes than building more capacity or the replacement of aging assets, and interdependency issues between utilities can significantly threaten emergency responses.

The establishment of agreed service targets after disaster would provide a basis for planning the improvements required.

The engineering profession would like to see a rational and measured approach to the defence of communities from natural disaster and other emergencies and detailed consideration of a wider range of risk reduction programmes.

## **Governance**

The placement of MCDEM within the Department of Prime Minister and Cabinet diminishes the status

of the director.

It is considered MCDEM would be better placed within a 'practicing' ministry.

The 'maximum autonomy' status of the director should be reinstated with direct and unequivocal reporting to the minister.

The appointment of the director should reflect the decision-making powers implied by this – it is a practicing role, not an oversight or policy role.

The act has a number of provisions for setting expectations, monitoring progress and giving direction – the CDEM Groups have been unwilling to exercise these and the provisions and the accountabilities need to be made more explicit.

The requirements on lifeline utilities need to be reinforced and the notion of 'best endeavours' disposed of – it is not a condition under the act – neither is the notion of 'force majeure'.

MCDEM needs to take a more proactive role in monitoring this, and to do so it needs a utility specialist within its capabilities.

The role and accountability of government ministries under the act should be strengthened and made more explicit.

The monitoring role of MCDEM everywhere needs to be strengthened and MCDEM made more accountable.

*John Pfahlert is Chief Executive of Water New Zealand, a national not-for-profit sector organisation comprising approximately 1500 corporate and individual members in New Zealand and overseas that focuses on the sustainable management and promotion of the water environment encompassing the 3 waters – fresh, waste and storm waters*

# Australian supermarkets phasing out plastic bags



*Two Australian supermarket chains have stolen a march on their New Zealand counterparts by voluntarily reducing the use of plastic bags*

## Woolworths and Coles have both agreed to voluntarily phase out the use of single-use plastic bags over the next 12 months.

The decision has been welcomed by Greenpeace Australia Pacific, which noted that South Australia, Tasmania, the Northern Territory and ACT all have bans on single-use plastic bags.

Queensland introduced a ban in July, while NSW and Victoria are yet to implement a policy on bags.

Western Australia has stated it hopes to bring in a ban on bags in the next 18 months.

They will join a number of jurisdictions that have already banned plastic shopping bags, including South Australia in 2009, the ACT and NT in 2011 and Tasmania in 2013.

"This ban will stop billions of bags from being used each year in Australia, tens of millions of which can make their way into our

contrasts sharply with the local scene, where both governments and retailers have been reluctant to begin reducing plastic bag usage.

## Going Green

The Green Party has been particularly vocal in pushing for change, citing WasteMINZ's recent *Wasted Opportunity* report, which examined the potential impacts of adjustments to the waste levy – a per tonne charge set by the government.

The report concluded that a higher rate would have a host of economic and environmental benefits for New Zealand.

The party's environment spokesperson Denise Roche says the report confirms that National has squandered potentially up to 9000 green jobs, \$500 million in economic benefits, and a cleaner environment for New Zealand.

create up to 9000 jobs and an estimated \$500 million in economic benefits per year.

"Disappointingly, another report by the Ministry for Environment fails to endorse measures which would deal with the waste crisis.

"Rather than backing what industry experts and the community are saying – National is delaying action through proposing more investigation."

New Zealanders know that National isn't delivering real leadership, Roche claims. "Ninety-three per cent of Kiwis believe that waste and recycling is an important issue and only 29 per cent believe that the government does a good job."

She says the Green Party will bring real leadership to this sector by phasing in zero-waste targets, increasing the waste levy, and use the product stewardship scheme to reduce waste.

Canstar Blue spokesperson Emma Quantrill.

"Across the regions, generations and sexes, the response was pretty consistent so people are definitely thinking about the environment and the impact they have on it.

"It has been estimated that we manage to use in excess of 1.6 billion non-biodegradable plastic bags every year.

"With a population of roughly 4.5 million people that works out at around 35 for every man woman and child in the country.

"These bags are then either dumped on the streets, taken to landfill or head out into our oceans where they cause irreparable damage to our marine life."

The problems associated with single-use plastic bags have been identified as a world issue, but unlike New Zealand many countries have already taken measures to either ban or attached levies to plastic bags.

Although there has been resistance to banning or charging for single-use plastic bags in New Zealand, there are a number of measures in place encouraging us to reduce or replace our use of plastic bags.

One initiative launched in 2015 has a number of soft plastic packaging recycle bins placed outside supermarkets and stores in major centres across the country.

Collectively this has resulted in over five tonnes of plastics (including bags) being collected every week.

"It is obviously a delicate balance between trying to satisfy the needs of consumers and protecting the environment we live in, but as awareness grows, the gap between the two is narrowing and our results show that there are a lot of people who 'want to do their bit,'" Quantrill concludes.

More recently, New World has begun polling its customers as to whether they are willing to play five cents per bag, 10 cents per bag or continue paying nothing.

Proceeds from any bag charges instituted as a result of the poll would go to environmental or community causes.

## Countries that have already taken action include but are not limited to:

Country	Action	Introduced	Results
Ireland	Tax	March 2002	Over 90 per cent reduction
Denmark	Tax on retailers	2003	66 per cent reduction
Wales	Charge applied	Oct 2011	Up to 96 per cent reduction
Scotland	Charge applied	Oct 2014	80 per cent reduction reported in first year
England	Levy	Oct 2015	85 per cent reduction reported in first year

Source: [bigfatbags.co.uk](http://bigfatbags.co.uk)

waterways and eventually end inside marine life and our food," says Greenpeace campaigner Samantha Wockner.

Greenpeace Australia Pacific is calling on the state governments of NSW and Victoria to follow the lead set by Woolworths and Coles.

"The overwhelming majority of Australians support a ban on single-use plastic bags – which are only used for minutes on average, but then take up to a thousand years to decompose," Wockner says.

"There is no reason for the paralysis currently infecting some state and federal governments on this issue. It's time for us to ban the bag at every level," she concludes.

The Australian initiative

"The amount of waste going to landfill has climbed by nearly 30 per cent through their term in government from around 2.5 million tons in 2009 to nearly 3.3 million today, with only 28 per cent of it being recycled," Roche observes.

"WasteMINZ's report highlights what we need to do: increase the charge on waste, diversify the types of rubbish we can charge it on, do more monitoring and better investment of the income levy.

"These policies will have plenty of economic and environmental benefits.

"The most obvious environmental benefits include reduced greenhouse gas emissions and cleaner rivers through reduced leachate levels."

Making these changes will also

"New Zealanders deserve a government that will embrace green jobs and a clean environment."

## Survey support

Roche is backed by a recent Canstar Blue survey, which revealed that for some the environment is more important than plastic when it comes to shopping bags.

The survey of 2,500 New Zealanders showed that 44 per cent of people said they thought shops should offer paper bags and 28 per cent of people thought shops should charge a levy on plastic bags, in order to reduce the impact on our environment.

This is not a new debate for New Zealand but continues to rouse a passionate reaction, says

# Excellence Awards live up to their name

*The winners of this year's LGNZ Excellence Awards reflect the excellent – and often largely unsung – work being done by local councils the length and breadth of the country*

**The Waikato District Alliance, for example, won the Chorus EXCELLENCE Award for Best Practice in Infrastructure for speeding up the time it takes to get contractors onto roading work.**

The alliance is the country's largest roading alliance, set up by Waikato District Council in conjunction with Downer NZ, and was created to deliver and improve asset management, renewal and management services to the community.

The alliance allows a much quicker response than is possible from a traditional council-contractor relationship.

This was highlighted by the response to the collapse of a culvert on Otonga Valley Road in November 2016.

In that incident the culvert suffered catastrophic failure early in the morning, leaving 28 residents on the no-exit road without access.

Through the alliance an engineer was able to visit the site that day and escalate the response.

Resources available to the alliance enabled transportation to be provided to school students sitting national exams.

A bridge deck and crane were taken to the site speedily and the road was returned to service within 20 hours of the collapse.

Response times averaged six days before the alliance was set up, a day over the agreed performance target. Within three months, the average response time was reduced to less than two days.

LGNZ President Lawrence Yule says responding to extreme events is going to become even more important given natural hazards and increasing climate change impacts, and the alliance shows the council is planning for its future.

"This is an excellent example of how councils can be prepared to respond to the risks posed by extreme events and hazards," Yule says.

Judges praised the Waikato District Alliance as a brilliant project that has already seen some very good results delivered.

"The speed of response has been impressive, they have embedded training and mentorship into the programme, and they have introduced performance benchmarks and are holding people to those benchmarks, which is what an alliance is supposed to do.

"The project could be replicated by other councils."

## **Creative city**

The judges also praised Napier City Council's City Vision: Small City Big Ideas project, which took the Creative New Zealand EXCELLENCE Award for Best Creative Place category.

City Vision: Small City Big Ideas sets the vision and strategic framework for the council's new way of working and is focused on assisting and showcasing entrepreneurial spirit in Napier's City Centre, Ahuriri and Waterfront districts.

The project creates an overarching strategy that sets a direction for new development and business ideas following six principles:

- Putting people first

## *Worthy winners*

### *The LGNZ EXCELLENCE Awards 2017 winners are:*

#### **Fulton Hogan EXCELLENCE Award for Community Engagement**

##### **Hutt City Council – Transformation Taita**

- Aiming to create a brighter future for all young people while building a stronger community, Transformation Taita offers access to facilities, resources and activities to those who need it most.

#### **Highly commended**

##### **Queenstown Lakes District Council – QLDC**

**Winter Morning Road Reports** - Throughout winter, seven days a week, QLDC provides early morning reports on road conditions throughout the district to thousands of people across multiple communications channels.

##### **Waikato Regional Council – Healthy Rivers: Plan for Change/Wai Ora: He Rautaki Whakapaipai**

Healthy Rivers Wai Ora is a courageous collaborative approach to improving water quality, empowering communities to own the problems - and solutions - in arguably New Zealand's most important catchment area.

#### **Chorus EXCELLENCE Award for Best Practice in Infrastructure Management**

##### **Waikato District Council – Waikato District Alliance**

The alliance is the largest purely roading group in the country, with an integrated team of council staff, contractors and suppliers working together to improve asset management, and renewal and maintenance services to the community – dramatically improving response times.

#### **Crown Fibre Holdings EXCELLENCE Award for Best Practice Contribution to Local Economic Development**

##### **West Coast Regional Council – Untamed Natural Wilderness**

The West Coast's exciting new brand has dramatically boosted tourism in the region, and is an ideal antidote to the decline in other major economic sectors that was damaging the social fabric of local communities.

#### **Creative New Zealand EXCELLENCE Award Best Creative Place**

##### **Napier City Council – City Vision: Small City, Big Ideas**

This overarching strategy for projects in the City Centre, Ahuriri and the Waterfront areas is guiding Napier to an integrated future where opportunities are seized and the city is both beautiful and memorable.

#### **Air New Zealand EXCELLENCE Award for Environmental Impact**

##### **Palmerston North City Council – Green Corridors**

**Palmerston North** - More than 150,000 native trees have so far been planted as part of this project to connect the Tararua Ranges to the Manawatu River through a corridor of native plants alongside streams and tributaries, improving water quality and bringing birdlife back to the city.

#### **Highly commended**

##### **Rotorua Lakes Council – Rotorua Mountain Biking Strategy**

The strategy to establish Rotorua as a globally recognised mountain bike destination has seen visits to the Whakarewarewa Mountain Bike Park increase from 55,000 in 2005 to 250,000 in 2016, with resulting job growth coming from increased investment in retail and support businesses.

##### **Selwyn District Council – Izone Business**

**Park Development** - The Izone Business Park is New Zealand's largest fully consented and development-ready industrial park with 68 new businesses employing 1,200 people. Another 800 jobs are forecast as development work is completed by land purchasers.

#### **MartinJenkins Judges' Choice Award for Outstanding Value and Service Delivery**

##### **Rotorua Lakes Council – Rotorua Mountain Biking Strategy**

The strategy to establish Rotorua as a globally recognised mountain bike destination has seen visits to the Whakarewarewa Mountain Bike Park increase from 55,000 in 2005 to 250,000 in 2016, with resulting job growth coming from increased investment in retail and support businesses.

- Open for business
- A port and coastal city
- Our people, our stories
- Ecological excellence
- Pedal power

The principles lie at the heart of a new approach to city-making.

They underpin any future decisions made on projects and will guide the council in how it will operate in future – its priorities, its relationships with the community and stakeholders, and its internal working environment.

The principle of being “open for business” has already created a marked change in the way the council engages with the public, building community confidence in risk-taking and driving innovation.

The council is now demonstrating open-mindedness and a willingness to engage and facilitate – and the community and businesses are responding with ideas, the pop-up Magnet Café being one example that may not have gained council support in the past.

A range of other examples, including a parklet, children’s play space, ping pong parlour and a night fiesta have proved successful.

LGNZ President Lawrence Yule believes City Vision: Small City Big Ideas shows an innovative approach to creating a vibrant and

liveable city.

“Having been a finalist in the Creative Place category in 2016, and now winning the award, Napier is showing it is leading the way in place-making in New Zealand,” Yule says.

Awards judges former Wellington Mayor Kerry Prendergast, Chair of EQC Sir Maarten Wevers and The New Zealand Initiative’s Executive Director Dr Oliver Hartwich agreed, saying the City Vision framework is an innovative programme that has the potential to transform the city in the long-term.

“It is aspirational and collectively these projects have the potential to change the nature of the city.

“The council has involved a reference group and an expert urban designer, and are showing they are open to new ideas and to having new things in different places.”

### Green corridor

They were similarly impressed by Palmerston North’s Green Corridor project, which won the Air New Zealand EXCELLENCE Award for Environmental Impact.

The environmental gains that can be made over the long term and through the dedication of many have reaped well-deserved rewards for Palmerston North City Council.

The 16-year project partnered

## “The council has involved a reference group and an expert urban designer, and are showing they are open to new ideas and to having new things in different places”

the council with the community to establish green corridors of native plants from the Tararua Ranges through to Palmerston North City and the Manawatū River.

The project began in 2001 when residents were concerned at the loss of biodiversity in Palmerston North, with only 1 per cent of forest cover remaining and native birds a rare sight.

Since then 150,000 native trees have been planted along the Turitea and Kahuterawa streams and gullies in the suburb of Aokautere/ Summerhill.

There has been a significant increase in native bird numbers in the Turitea Reserve, headwaters of the Green Corridors project, and water quality has improved in both streams.

Turitea Stream is now being used

as an incubator for eels through a collaborative project with local iwi, Rangitāne o Manawatū.

LGNZ President Lawrence Yule says the Green Corridors Palmerston North project is an excellent example of council and community action.

“You can see from the photos the excellent results of this project,” Yule says. “This project provides a wonderful example of what can be achieved by taking a long-term approach to environmental restoration.”

Judges said this was a project initiated by a community concerned about biodiversity loss.

“Sixteen years on it is still going and the impact is there to see as a result of the efforts of many people planting thousands of trees.

“This project has had wide community involvement, from the very young to older residents, and shows the benefits that can be gained over time.”

Now in their fourth year, the EXCELLENCE Awards recognise and celebrate the key leadership role that local government plays in communities around the country.

Winners were announced at a gala dinner in Auckland attended by more than 650 delegates from local and central government, and stakeholders.

## Christchurch – city of choice?

**Christchurch has a golden opportunity to become New Zealand’s number one city of choice as the rebuild takes effect, outgoing Canterbury Employers’ Chamber of Commerce Chief Executive Peter Townsend claims.**

Townsend says Christchurch is back and running after 11,000 aftershocks, 53 of them over five on the Richter scale.

Currently \$83 million is being spent in rebuilding the city every week, and by the end of this calendar year 75 per cent of the housing stock will have been repaired and rebuilt.

A total of 70 per cent of the commercial building repairs and rebuilds will also have been completed, he says.

The cost of the structural side of the rebuild so far is \$33 billion, but there is still a massive amount to do.

The total cost of the whole rebuild is still estimated at somewhere between \$40 and \$50 billion.

EQC insurance proceeds have accounted for around \$11 billion dollars of insurance monies injected into the rebuild with other private insurance contributing another \$20 billion

“There is nowhere in the world where around \$30 billion dollars of insurance proceeds have been applied to the rebuild of a city of 400,000 people,” Townsend notes.

“The government have injected around \$8.5 billion into land, infrastructure and amenities.”

### Fast facts

- Townsend makes other factual points about Christchurch and Canterbury as it becomes a “city of choice”:
- a total of 1100 commercial buildings in the city were lost in the earthquakes but they might be replaced by just 400 buildings
- by the end of 2020 Christchurch is going to have as much hotel accommodation as it

had before the earthquakes

- Christchurch will be the safest city in New Zealand because all the “shonky” stuff has gone
- the city will be the most energy efficient city in New Zealand because it has rebuilt to a new code of double glazed windows, better insulation, heat pumps under the floors to heat the concrete pads and it all results in much cheaper electricity.
- a total of 25,000 Christchurch houses were destroyed or had in excess of 100,000 of damage in the earthquakes
- there is no other city better equipped in primary, secondary and tertiary education
- Canterbury is regarded as having one of the top six health systems in the world
- Christchurch is going to be the most accessible city in the country as its traffic infrastructure is taking off with the southern motorway, the northern arterial route and the west diversion

- Christchurch is the only city in the world with under a million people that has a daily Airbus 380 service
- The city is a target for medical specialists and doctors wanting to live and work in Christchurch as fears over Brexit, Trump and lone-wolf terrorism make the city seem a safe bolthole for people to live and bring up their children
- Canterbury is not all about dairy – the province anteburgh grows 68 per cent of the world’s radish seeds and 34 per cent of the world’s carrot seeds
- finally, the rebuild of the ChristChurch Cathedral over the next seven to 10 years must be a tourist attraction. “Why not, instead of fencing it off and wrapped in white plastic, put glass panelling around the outside,” Townsend asks. “Why not put a couple of grandstands in the square so people can look into the rebuild?”

# Why tendering is like sitting an exam – and how to get top marks

*Hands up – who enjoyed sitting exams in their younger days, asks Kerrie McEwen*

**Chances are that if you broke into a nervous sweat just at the thought of having to endure an exam, you probably don't enjoy responding to tenders in your working life.**

But believe it or not, some people's hands would have shot up straight away with a feeling of excitement and anticipation bubbling at their fingertips.

And yes, there are people like that out there that really did like sitting exams – I'm one of them! No surprise then that I'm a professional tender writer.

The thing about tendering is that it's quite like sitting an exam.

There's a time limit; specific questions to be considered and answered (and marked); something important at stake at the end of the process.

Without adequate preparation it can also be stressful, which can often have a bearing on the quality of the final submission.

Having the right solution is important in securing good marks, and so is having the right strategy – a plan for how you will spend your allotted time (whether it's three hours, or three weeks).

So how else do you get top marks?

## **1. Think about the evaluator**

Just as you would with an exam paper, read the whole of the RFP – from start to finish – before you start preparing your response.

(You might be surprised at what you'll find on page 123 that could help in how you approach the questions on page 23.)

If there's a marking sheet, use it as a checklist when organising your response.

This will help to align your content with the evaluator's marking framework.

Make it easy for them, especially if you think they'll have a lot of submissions to mark.

If weightings vary according to the RFT sections, use your time and resources wisely.

If the deadline is looming and you've already got a compliant proposal, spend the time you have left on those areas that will



**“You need to really demonstrate that you understand your client's needs: what's critical for success on this project, and what risks will need to be managed”**

attract the most marks – or where you can have the highest proportional impact.

Answer each and every question directly.

Don't waffle or provide a generic response that doesn't address this particular contract opportunity.

And consider that evaluators come in all shapes and sizes when it comes to information processing.

It's best to cover all bases by having balance in your response between headlines, written content, and diagrams or visuals.

## **2. Show your working to demonstrate your understanding**

Using the classroom as an analogy, maths teachers are always saying “don't just give the answer, show your working” – the idea being that the ‘working’ provides evidence of your understanding of the concept, even if you've made an error in your arithmetic.

The same idea applies in tendering.

Let's take the example of writing the Methodology section of a tender response.

If time is short (and page limits are an issue), you'll of course be

tempted to just have a bare bones Methodology description which outlines what you'll do to meet the Contract Specifications.

That approach might get you a pass mark, but in a competitive tender, being ‘good’ is not ‘good enough’.

To achieve top marks and put your submission in the lead, you need to really demonstrate that you understand your client's needs: what's critical for success on this project, and what risks will need to be managed.

Consider your solution and responses in this context and you're well on the way to the top of the class.

Go a step further and be specific about what this will mean for your client (and their stakeholders).

This means you need to not only describe the ‘how’ but also the ‘why’, such as the benefits of your solution for your client.

## **3. Check your answers**

Just like in an exam, review your response before you submit it.

Firstly, it sounds obvious, but check for errors such as typos by doing a thorough proofread – it's surprising what can slip through when we rely just on the computer spellcheck alone!

Secondly, use the ‘yes, but so what?’ question to test the robustness of your solution and client focus in your submission.

An independent reviewer can add a lot of value at this stage, but be wary of leaving this process until the closing stages of the bid.

## **4. Revisit your marks**

If a client debrief is available take this as an opportunity to learn where you might have done better in the marking – even if you've been named as preferred bidder.

It's extremely rare to be awarded a 100 per cent score, so there's always room for improvement on the next one.

Have a pre-prepared list of questions to make the most of the debrief, and capture this information for use on future bids.

Following these tips will greatly increase the chances of higher Non-Price Attribute scores. Good luck with your upcoming tenders!

*Kerrie McEwen is a senior consultant with Plan A – Tender Specialists and part of a 15-strong team which provides bid management, strategy, tender response writing and review for clients across New Zealand and internationally*

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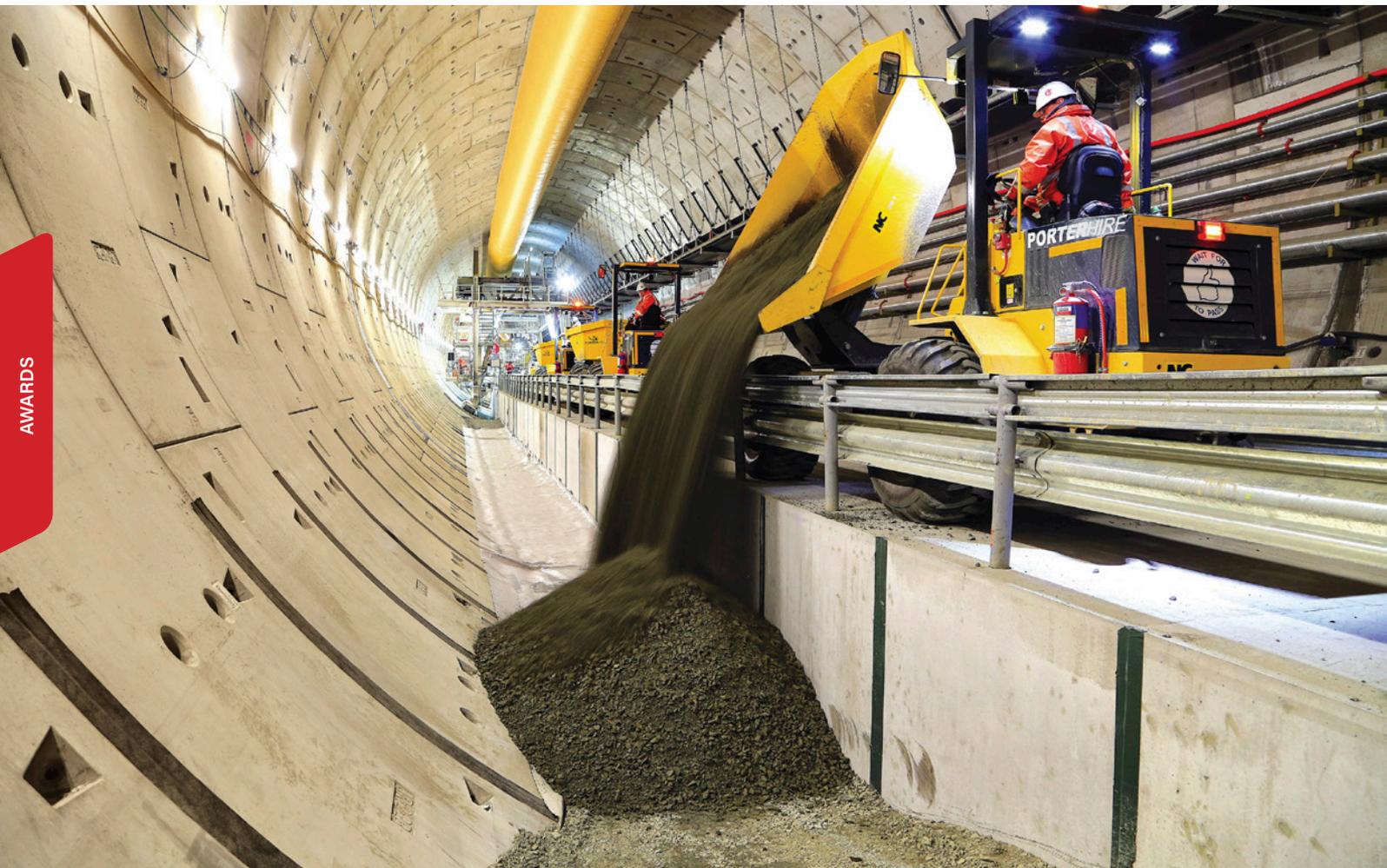
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# Waterview Connection takes top construction award

*Auckland's Waterview Connection project took out the major prize at this year's Civil Contractors New Zealand's (CCNZ) National Awards*



AWARDS

## *CCNZ Hirepool Construction Excellence Awards 2017 winners*

### **Category 1A: Projects with a value of less than \$5 million by companies with an annual turnover of less than \$10 million:**

Placing	Project	Company	Location
WINNER	Jackson Street Wastewater Renewal	Construction Contracts, Naenae	Wellington
HIGHLY COMMENDED	Beachville Road Eastern Seawall Reinstatement	Seipp Construction	Christchurch

### **Category 1B: Projects with a value of less than \$5 million by companies with an annual turnover of greater than \$10 million:**

Placing	Project	Company	Location
WINNER	Aniwhenua Dam Head Wall Remediation Works	Waiotahi Contractors	Whakatane
HIGHLY COMMENDED	Le Roy's Lookout	Downer NZ	Auckland

### **Category 2: Projects between a value of \$5 million and \$20 million**

Placing	Project	Company	Location
WINNER	SH3 Vickers to City Upgrade	Fulton Hogan	New Plymouth

**The awards programme is comprised of three groups: the CCNZ Hirepool Construction Excellence Awards; the CCNZ Z People Awards and the CCNZ Connexis Company Awards.**

Waterview Connection was up against the Mackays to Peka Peka Expressway north of Wellington and the Stronger Christchurch Infrastructure Rebuild (SCIRT) in the Hirepool Construction Excellence Awards category for projects worth more than \$100 million.

Of the Waterview project, undertaken by the Well-Connected Alliance, the judges said: "It is arguably the most complex infrastructure project undertaken in New Zealand.

"It is an outstanding example of what can be achieved when a diverse group of constructors, designers and the client work together collaboratively to achieve a single goal, being the delivery of exceptional facilities for the public."

The project, for the NZ Transport Agency, delivered two of the nation's longest road tunnels at 2.4 kilometres each and a complex motorway-to-motorway interchange at Great North Road, five kilometres of pedestrian/cycleway paths, skate parks, BMX track, sports fields and an environmental upgrade of the Oakley Creek.

**Excellent efforts**

Other Hirepool Construction Excellence category winners included earthworks for the Mackays to Peka Peka Expressway, upgrade of SH3 in New Plymouth, dam remediation works in Whakatane, wastewater remediation works in Wellington and maintenance of Dunedin city traffic signals.

The Connexis Company Awards recognise employers that help staff to gain nationally recognised qualifications to create strong career pathways.

Connexis is the infrastructure ITO and

provides civil employers with the tools for attracting and training civil construction staff.

The winners over the four **Connexis Company Awards** categories were Construction Contracts in Lower Hutt, ICB Retaining & Construction in Auckland, Fulton Hogan Canterbury and the Fulton Hogan HEB Joint Venture.

The **Z People Awards** celebrate great leadership in the civil construction sector.

Two Christchurch men were joint winners in the **Emerging Leader Award**: Harley Haywood, 27, Managing Director, Utilities Construction and Sean Wilson, 26, Project Manager, Isaac Construction.

**The Training Development Award**

to recognise individuals who have developed a career path went to Liam Woodmass, 27, a Ngaruawahia-based Renewals Engineer, at Downer NZ.

General Manager of Commercial at Z, Nic Williams, said Z was really happy to have been involved with recognising leaders in the civil contracting industry.

"These leaders are succeeding in taking ownership of their development.

"If this year's group of nominees is anything to go by, the civil construction industry has a very bright future ahead."

CCNZ CEO Peter Silcock said the judges had told him that their job to choose all the winners was particularly difficult this year as the standard was so high.

"There's been so many new complex and vital infrastructure projects up and down the country that show the professionalism in our industry.

"Every one of the awards entries connect people together and/or connect them to services.

"CCNZ is very proud of our members and the integral part they play in their communities and all these projects demonstrate their level of commitment and dedication to creating a better New Zealand."

*CCNZ Connexis Company Awards Winners*

**Up to \$10 million turnover category**

WINNER	Construction Contracts (CCL), Lower Hutt
RUNNER-UP	Johnstone Construction, Auckland

**Turnover of between \$10 million and \$25 million category**

WINNER	ICB Retaining and Construction, Auckland
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**Turnover of more than \$25 million category**

WINNER	Fulton Hogan Canterbury, Christchurch
RUNNER-UP	Higgins Contractors, Palmerston North

**Projects category**

WINNER	Fulton Hogan HEB Joint Venture, Waikato Expressway Huntly section
RUNNER-UP	Fulton Hogan Alexandra, Shotover Bridge Gas Pipeline Project

**CCNZ Z People Awards Winners**

**Emerging Leader Category**

JOINT WINNERS	Harley Haywood, 27, Managing Director, Utilities Construction NZ, Christchurch Sean Wilson, 26, Project Manager, Isaac Construction, Christchurch
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**Training Development Category**

WINNER	Liam Woodmass, 27, Renewals Engineer, Downer NZ, Ngaruawahia
RUNNER-UP	James Dawson, 30, Cadet Quality Surveyor / Junior Project Manager, Johnstone Construction, Auckland

AWARDS

**Category 3: Projects with a value between \$20 million and \$100 million**

Placing	Project	Company	Location
WINNER	McKays to Peka Peka Expressway (M2PP) earthworks	Goodman Contractors	Kapiti

**Category 4: Projects with a value greater than \$100 million**

Placing	Project	Company	Location
WINNER	Waterview Connection	Well-Connected Alliance	Auckland

**Category 5, Excellence in the maintenance and management of assets**

Placing	Project	Company	Location
WINNER	Dunedin City Council traffic signals	Downer NZ	Dunedin

# Dammed if you do, dammed if you don't

*Water – we all need it, we all want it,  
but we simply can't agree on how best to  
manage it, says Vicki Morrison-Shaw*

WATER

## **How do we ensure it is safe? Should we fluoridate it? Who owns it? Should we pay for it? Should we store it?**

These are some of the issues which have been impacting our collective conscious of late and have resulted in a couple of recent developments in those areas.

### **How do we ensure it is safe?**

The provision of safe drinking water is something most of us – particularly the urban dwellers amongst us – tend to take for granted.

Just how wrong that assumption can be was thrown into stark relief with the widespread outbreak of gastroenteritis in Havelock North in August 2016.

The government inquiry that followed was tasked with looking at the causes of the outbreak, the roles the various agencies played, and what actions are needed to ensure safety going forward.

The inquiry issued Stage 1 of its report in May, which raised serious questions about the state of drinking water management in New Zealand.

The inquiry found that the organisations involved in providing the drinking water in the area – the regional and district councils and drinking water assessors – had not met the standards of care expected of them and that these failures had contributed to the outbreak.

It was also noted that there was a lack of oversight and collaboration between the various agencies which had muddied the waters.

Stage 2 of the inquiry focused on what lessons can be learned from the outbreak and what changes need to be made to ensure the provision of safe and secure drinking water – not just in Havelock North – but in New Zealand as a whole.

The hearings for Stage 2 concluded in July and a report is due shortly.

Given the boil water notices issued for parts of Dunedin recently, the permanent notices in place for other parts of the country such as Buller, and the Ministry of Health's latest drinking water quality report showing 600,000 people received water that failed relevant standards, the inquiry's Stage 2 report

will no doubt be of relevance to all who operate in this sphere as well as the wider public.

### **Should we fluoridate it?**

Earlier this year the long-standing debate about whether councils should fluoridate drinking water looked as though it may be resolved with the introduction of a bill giving District Health Boards the power to direct councils to fluoridate water.

The bill had been introduced following a finding by the Court of Appeal in *New Health New Zealand Inc v South Taranaki District Council* [2016] NZCA 462 which confirmed that fluoridation of water was not "medical treatment" and therefore not something that infringed peoples' human rights to refuse medical treatment.

While fluoridation was not medical treatment it was recognised as being a health (and in particular a tooth decay) issue, which is why the bill proposed transferring the responsibility to District Health Boards.

Before making a decision on whether to fluoridate water

District Health Boards would be required to:

- consider evidence regarding the effectiveness of adding fluoride to drinking water;
- weigh the benefits against the financial costs; and
- consult with councils about the quantum of the costs and any timing issues.

Opponents remain concerned that District Health Boards do not necessarily have the skills needed to make the decision, and that the absence of a requirement to consult shuts the community out of decision-making.

The bill proceeded through its first few stages but then stalled as electioneering campaigns ramped up.

Now, with the bill's main proponent Peter Dunn resigning from Parliament, it is unlikely that this bill will see the light of day before the end of the year – if at all.

While this will make those who oppose fluoridation happy, for those like the Ministry of Health who consider it is an important way to reduce tooth decay it is likely to be disappointing.



this year when the government passed legislation making the Whanganui River a “legal person” in its own right.

This means that the river has all the rights, powers and duties that other legal persons - such as companies - have.

The river is to be managed by a board which will be able to take and defend actions in its name.

This move recognises the inherent value and importance of the river to mana whenua, the crown and the community, but ensures existing rights, power and interests are maintained.

Exactly how the legal status will affect future applications (e.g. for water takes), liabilities for events (such as floods), and enforcement actions (against polluters) is yet to be seen.

### Should we pay for it?

There has been a great furore in the media of late about water pricing or to use the dreaded “t” word, tax.

The debate was ignited by the release of Labour’s proposed water policy which included imposing a “royalty” on the commercial consumption of water to assist with keeping water clean.

While the idea of water pricing is not new per se – indeed National had previously committed to investigating pricing as part of its ongoing freshwater reforms – this is the first time a definitive statement has been made that a tax or royalty would be imposed.

Despite being definitive on the requirement for a tax or royalty little was provided in the way of details.

The royalty is to apply to bottled water and irrigation, but it is not clear if it is to apply to all commercial uses.

There is also uncertainty regarding what exceptions, if any, will apply, and perhaps most importantly what level the royalty will be.

Such uncertainty has understandably caused concern with water users large and small.

Costs of production have been predicted to rise – with suggestions that the price of fruit and vegetables may in some instances even treble.

While supporters of the tax have called such claims scaremongering and pointed to royalties being payable on other natural resources such as minerals, oil and gas, others have pointed out, that unlike those resources, water is a renewable resource, and a critical input for most productive uses.

Reactions from other political

parties range from proposals for similar royalty or pricing schemes (Greens, NZ First and TOP would impose a tax or royalty on water bottling and charges on other water use) or further investigation (National).

Whoever forms the next government, it is clear that water pricing in some form will be on the agenda.

The key, as Water NZ CEO John Pfahlert noted in a recent media article, is that “there is a consistent approach to any policy on water and water pricing and not a knee-jerk response”.

## “Focusing on rights and interests rather than ownership enables acknowledgement of overlapping claims so a conversation can begin around how best to accommodate these”

### Should we store it?

Most would agree that getting smarter about the way we use water, and storing it so that it is not wasted, makes sense.

Indeed, water tanks for household and domestic purposes are commonplace in rural areas.

So is the answer, or part of the answer, that bigger water users just need bigger water storage?

Conceptually yes, but the difficulties of actually getting consent for such storage are not to be underestimated – even where local authorities are on board.

This was well illustrated in the recent Ruataniwha dam proposal.

The Hawkes Bay Regional Investment Company, which was the investment arm of the Hawkes Bay Regional Council, sought and obtained resource consents to create a dam across the Makaroro River (Runataniwha Dam).

The proposal would result in 22 hectares of the Ruahine Forest Park being inundated in a reservoir for water storage purposes behind the proposed dam.

The forest park land was owned by the crown and classified as “conservation park”, which provided it with special protection under the Conservation Act.

The company therefore proposed a land swap whereby they would gift the crown a 149-hectare block (Smedley block) which had similar conservation values.

In return the crown would revoke the conservation park status of the 22 ha Forest Park land and transfer it to the company.

The Director General of Conservation, who had delegated power to make the decision, agreed and revoked the conservation park status of the land.

This decision was then challenged by the Royal Forest and Bird Society and other groups who alleged that the decision was unlawful.

The Director-General’s decision was upheld in the High Court but overturned on appeal by a majority in the Court of Appeal.

That decision was then appealed to the Supreme Court.

The key issues considered by the Supreme Court were whether:

- it was lawful to revoke the conservation park status in order to allow it to be exchanged as stewardship land;
- revocation decisions can be taken on the basis that the exchange will enhance the conservation values of land managed by the Department of Conservation and promote the purposes of the act.

In a 3:2 split decision the majority of the Supreme Court found that:

- the revocation was only justified on the basis of the proposed exchange;
- there was no assessment of whether the 22-hectare block still merited protection;
- and that asking whether the swap resulted in a net conservation benefit was applying the wrong test.

The court therefore overturned the Director General’s decision effectively halting the Ruataniwha dam proposal in its tracks.

While the differing opinions of the members of the superior courts is likely to provide fertile ground for a future law change, such changes could only be achieved once the new government is confirmed.

This may well be too late for the Ruataniwha dam proposal but will be important in the future should further similar proposals involve or affect crown land.

*Vicki Morrison-Shaw is a senior associate with Atkins Holm Majurey, New Zealand’s leading specialist environmental law firm*

### Who owns it?

The debate around who owns the water has been heating up.

Views range from no-one owns it; to the “crown” owns it; to individual or groups with specific interests (such as mana whenua) own the water in different areas.

Given we all rely on water to a greater or lesser extent it is no surprise that there are strongly held and opposing views on the topic.

The ownership debate is complex and requires consideration of treaty rights, as well as those rights arising from statute and common law.

It is a matter that will require consultation, time, and ultimately legislation to resolve.

In the meantime, instead of focusing on ownership, perhaps the more relevant question is one of rights and interests in water.

Focusing on rights and interests rather than ownership enables acknowledgement of overlapping claims so a conversation can begin around how best to accommodate these.

An innovative approach to the “ownership” issue occurred earlier

# How English language ability affects vehicle accident risk

*Our workplaces and road signs may have signage in clear English but that doesn't mean they're always understood by every driver on the road, Darren Cottingham warns*

Imagine you are driving through Iceland, where it's a different language with a number of additional letters not used in our Roman alphabet.

How much Icelandic do you know?

Would you know, for example, what STANS VEGGJALD means when written on a warning sign with no other clues?

These are the same issues that two segments of our population have with our English signs: those who have low literacy and those who are new learners of English (some new migrants, seasonal workers and tourists).

More than 20 per cent of our population have serious, restricting literacy issues and around 40 per cent have significant literacy issues according to an OECD study.

This was backed up by research from agricultural training organisation, AgITO.

Chances are, you work with someone with English language literacy issues.

For these people, passing a driving theory test is challenging and it's more difficult to give them ongoing training if that training includes written tasks or information.

## Non-native speakers a particular concern

We also have to consider people who are not native English speakers.

Citizens of 24 countries, 18 of which drive on the right and only seven of which speak English as a primary language (Australia, the UK, Hong Kong, the US, Canada, South Africa and Ireland), can simply present their home country's driver licence and receive a New Zealand licence in return without having to take a theory or practical test.

Some of these countries that drive on the right (the US, Greece, Belgium, South Korea and Portugal) have fatality statistics worse

**More than 20 per cent of our population have serious, restricting literacy issues and around 40 per cent have significant literacy issues according to an OECD study**

than New Zealand according to figures from the World Health Organisation in 2013. South Africa, which does drive on the left, has

the highest fatality rate at over 25 deaths per 100,000 drivers per year compared to around 6.9 for New Zealand.

According to Statistics New Zealand in 2013 over 96 per cent of New Zealanders self-reported that they spoke English.

However, for a significant number English was their second language, and while they can speak it they can't necessarily read or write it.

Almost 90,000 people reported they spoke no English at all.

## Consequences of not being able to read road signs

New Zealand has many road signs which must be read in English to

understand what they mean and there are serious consequences for not understanding them:

- **Road closed** – drivers could end up stuck on a snowy ridge, risking their own lives and those who have to rescue them.
- **Accident** – this sign is put up by police and tells drivers they must slow to 20km/h to reduce the risk to emergency workers. The accident could be around a blind bend with spilled fluids on the road. If a driver continues at a speed above 70km/h then they risk instant loss of their driver licence given that they are driving 50km/h over the limit.
- **Lane closed ahead** – not being able to read this makes the driver reliant on their forward observation of the actual road, which we know is usually poor for the majority of drivers.
- **Flooding** – it's very difficult to see standing water when it's dark. Driving into deep, flowing water means there's a risk of the car being swept away and at minimum serious damage.

And there are a great many more – turn left at any time with care, road works, keep left unless passing, plus variable message signs which describe the condition of the road ahead or the route to take for a detour.

## What can companies do to keep their drivers safe?

A vehicle is a place of work according to the Health and Safety at Work Act 2015, and vehicle accidents are one of, if not the, largest causes of workplace fatalities.

Companies are obligated to take measures to reduce their risks where practical.

Unfortunately, even though driving is one of those risks, most companies don't realise because New Zealand agencies don't keep accurate statistics about the purpose of journeys, i.e. was someone driving for work or recreation?

Question 5 of 7 



This motorway on-ramp has a speed limit of 50km/h even though it seems clear and open. Select the reasons why (you'll see the remainder of the video once you've answered the question)

- A. No reason, it's just to be annoying
- B. How far you can see ahead
- C. The sharpness of the curve
- D. Hidden queues

 4 correct  0 incorrect Submit answer

DT Driver Training's Fleet Driver Plan contains a mixture of video and text learning material with audio recordings of all questions and answers to support those with lower literacy



Variable signs give important messages about road conditions ahead - not being able to read the signs causes an inconvenience at best and danger at worst

### How many workplace fatalities are vehicle-related?

Worksafe is responsible for monitoring workplace accidents but does not track road accidents unless they meet the definition of 'notifiable'.

The purpose of a journey is not reported for fatal and injury road accidents and no accurate figures are available.

We know from Ministry of Transport figures that around 17 per cent of fatal road accidents and 18 per cent of deaths involve a heavy vehicle, therefore at least 17 per cent of road accidents are work-related.

We also know from Worksafe's notified fatalities that at least 50 per cent of notified accidents are vehicle-related, but there is little, if any, crossover between road accidents as that only adds up to 26 deaths between August 1 2016 and July 31 2017.

We also have to look to Australia to provide reasonably accurate figures.

Safe Work Australia reports that 39 per cent of on-road fatal crashes are work-related and around 65 per cent of all workplace fatalities are vehicle-related.

Therefore it's essential to provide ongoing driver training for any staff members that drive as part

### Citizens of 24 countries, 18 of which drive on the right and only seven of which speak English as a primary language, can simply present their home country's driver licence and receive a New Zealand licence in return without having to take a theory or practical test

of their job whether it's in a company vehicle or their own vehicle.

Even if staff members don't drive for their job, they probably drive to and from work.

Literacy need not be an issue for ongoing driver training.

DT Driver Training ([www.driver-training.co.nz](http://www.driver-training.co.nz)) has audio record-

ings of all questions in its online Fleet Driver Plan learning modules, plus a large number of videos.

Literacy Aotearoa ([www.literacy.org.nz](http://www.literacy.org.nz)) and regional literacy providers have resources for workplace literacy and often run Road Code courses for those who need to get a licence.

As well as an obligation to keep their drivers safe, employers should also be interested in reducing maintenance and fuel consumption costs, both of which can be improved by providing effective driver training. Online training is the most cost-effective option.

Given that the cost of providing online driver training is negligible and demonstrates an intent to reduce risk, it's an essential tool for any manager of health and safety, training or fleet vehicles to help a company comply with the Health and Safety at Work Act 2015.

*Darren Cottingham is Founder and Director of DT Driver Training, the largest provider of driver theory education in New Zealand*

#### Countries whose citizens can swap their native country's driver licence for a New Zealand licence without having to take a theory or practical test

Australia	France	Japan	South Korea
Austria	Germany	Luxembourg	Spain
Belgium	Greece	Netherlands	Sweden
Canada	Hong Kong	Norway	Switzerland
Denmark	Ireland	Portugal	United Kingdom
Finland	Italy	South Africa	United States of America

# New street lighting guidelines set to save councils millions

*Two game-changing documents will allow Australian and New Zealand councils to save millions of dollars on 'smart city' street lighting projects*

**The Institute of Public Works Engineering Australasia (IPWEA), the peak body that advises local, state and federal governments on best practice engineering, has released the long-awaited Model LED Public Lighting Specification and its companion, the Model Public Lighting Controls Specification.**

IPWEA CEO Robert Fuller says the Model Specifications will remove the uncertainty around street lighting procurement, which has resulted in impediments, inefficiencies and cost overruns from poorly drafted and often technically inconsistent specifications.

"These new specifications will be a 'game changer' for accelerating the rollout of LED lighting and smart controls across Australia and New Zealand, helping all parties successfully navigate the maze of new lighting

technology," Fuller says.

LED and smart controlled public lighting technologies have advanced greatly in recent times and provide many features and advantages for improving amenity, safety, environmental and financial outcomes for communities.

IPWEA modelling shows that if every street light in Australia and New Zealand were converted to LEDs, councils would slash \$120 million off their annual street lighting bills.

However, the features that provide these benefits also add complexity to the specification and procurement process, making the process difficult for all parties involved. Currently, only 10 per cent of Australia and New Zealand's street lights have been converted to LEDs.

Fuller adds: "Early LED specifications often resulted in

inefficient procurement processes that were costly for suppliers to respond to, raised the risks of inappropriate or poorly performing outcomes for buyers, and often resulted in less than fit-for-purpose outcomes.

"Overall, this inefficient process has impeded the timely uptake of LEDs and controls for public lighting despite the many demonstrated advantages they provide."

The Model Specifications provide an informative, structured template that is focused on the technical aspects for local governments, main road authorities and electricity distribution utilities, allowing them to prepare their own customised specifications within a structured public tender.

There has been exhaustive Australian and international input

into the specifications to ensure they reflect industry best practice.

"The peer review of the specifications has been so overwhelming positive that we have already had requests to trial these on projects in Europe," Fuller says.

The Model Specifications are part of the Street Lighting and Smart Controls Programme (SLSC) which has been funded by the Australian Federal Government, Department of the Environment and Energy, to improve energy, environmental, economic and social outcomes.

*The specifications - which have already been downloaded more than 1000 times since their release - can be downloaded from the SLSC website ([www.slsc.org.au](http://www.slsc.org.au) or [www.slsc.org.nz](http://www.slsc.org.nz)) and are being supported by free industry webinars.*

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# Solid-liquid separator provides environmentally friendly performance

A new clog-free automatic liquid-to-solid waste separator compact is ideal for dewatering applications ranging from food processing, food waste, grease trap and waste oil through to municipal wastewater sludge, livestock manure and agribusiness processes.

The compact KDS multi-disc roller separator features a unique self-cleaning dewatering and conveying system with oval plate separation and transfer structure that prevents clogging and permits automatic continuous operation that handles oily and fibrous material with ease.

Designed for efficiency, sustainability and conservation of resources in small-to-medium applications, the energy-efficient KDS separator consumes as little as 0.06kW hr of electricity and uses washwater, says CST Wastewater Solutions Managing Director Mike Bambridge.

"This simple-to-maintain separator offers a high throughput within a small body, with the smallest model being just under 350mm wide and weighing 50 kg," he notes.

## High efficiency

"The compact rotational oval plate structure achieves high transportation and separation

efficiencies, while the simplicity of the machine's overall structure offers low maintenance, achieving cost and H&S benefits through less handling being required to clear hazardous materials.

"The KDS separator uses a fraction of the power of a centrifuge and no water usage during operation, unlike a belt press or a screw press.

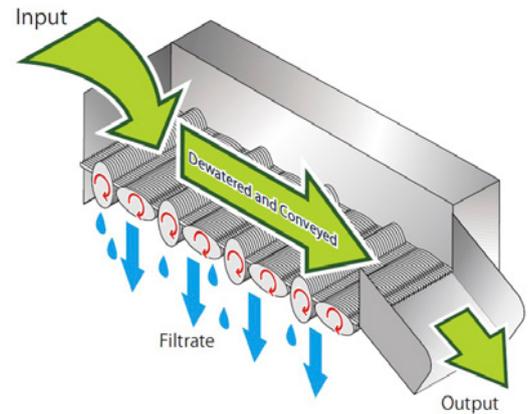
"For a relatively low investment cost, it offers a high-performance alternative to sludge drying beds and geobags, for example."

Used for thickening of dissolved air flotation sludge – a very common application throughout wastewater operations – it achieves solids capture of 97 per cent thickened sludge at a dryness of 17 per cent.

Waste-activated sludge dryness levels are typically 15-25 per cent.

Applications for which the separator is designed include:

- food processing waste, including snack-foods, kitchen and restaurant waste, raw wastewater (primary screening) and sludge



- sewage treatment, including raw wastewater (primary screening) and sludge to landfill
- abattoir, feedlots, and dairy farm wastewater and sludge - cattle manure cake dryness of 25-35 per cent is typically achieved
- pig farm raw manure and sludge, with cake dryness of 20-30 per cent
- barrel polishing water, water-based paint wastewater, grease trap waste, dyeing wastewater, waste oil, and plastic recycling
- seafood processing.

WATER

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# Find the gap

*Procurement performance by some agencies still running behind best practice*

## **Use of public money – it’s an emotive topic, particularly around election time.**

When the size of public investment is significant, as in the case of New Zealand’s infrastructure pipeline of \$125 billion, there is naturally a need to examine how efficient procurement processes are.

Front and centre of the recent Leading Capital Procurement Forum was the need to lift procurement performance by New Zealand’s public sector.

Findings on how to drive better outcomes through improved procurement of public infrastructure will be recommended to the Minister for Infrastructure.

Inputs to the forum included the results of Infrastructure New Zealand’s 2017 Procurement Survey – featuring feedback on 19 procuring agencies, based on views from senior industry leaders on the state of procurement performance.

## **NZ Transport Agency out in front again**

The survey showed positive results for the NZ Transport Agency, with Infrastructure NZ CEO Stephen Selwood commenting, “NZTA came out on top as the country’s top procurer of infrastructure services for the third year in succession.”

NZTA’s advanced understanding of appropriate risk allocation, and a focus on value rather than cost, were attributed as driving that result.

## **But a performance gap still exists for others**

Other agencies did not receive such a favourable scorecard from the industry.

“... with 20 District Health Boards, 78 councils, transport, education, housing and other public institutions all

procuring major capital assets independently, skills are too widely distributed and processes too fragmented”, Selwood notes.

While some procurers were seen as ‘above average’ by survey respondents (MoJ, Wellington Water, WCC, Department of Corrections, MoE, Transpower, Otakaro Ltd, Panuku Development Auckland, and NZ Treasury), others were firmly rated as ‘below average’.

Selwood adds, “A separate poll conducted at the release of the survey findings found a staggering 96 per cent believed we cannot continue to procure infrastructure the way we are.”

## **Specialised infrastructure procurement agency needed**

The infrastructure industry broadly agrees that consolidating public procurement expertise in an arm’s-length specialist agency is critical to meeting New Zealand’s investment programme, Selwood insists.

“Four out of five of the people most heavily involved in designing, building and providing infrastructure services to government and councils believe a specialist procurement agency would be “effective” or “highly effective” in lifting performance.”

Selwood points to specialised collaborative procurement bodies in NSW, Canada, and Scotland which assist project procurement.

“The UK has recently achieved a 15 per cent saving on infrastructure spending by focusing on best practice procurement and collaborative working.

“If we could achieve a much more modest 5-10 per cent improvement in delivering New Zealand’s \$125 billion capital intentions plan, we could secure \$6-12 billion of infrastructure value above and beyond what we’re planning.

## **The new NZQA Tender Evaluator qualification emphasises the importance of fit-for-purpose, cost-efficient processes that provide transparency on the scoring systems and weightings**

“That’s five or six Waterview Connections or enough to address the entire backlog of water supply and wastewater investment nationwide.”

## **Grassroots procurement also under the spotlight**

There’s significant opportunity to streamline procurement, but it’s not just at the mega-project level where improvements could be made.

Procurement and tendering expert Caroline Boot of Clever Buying and Plan A says, “In addition to improving strategic procurement capability, we also need to build capability from the ground up in order to make a real difference in procurement efficiency”.

Boot adds, “There’s a need to focus on the practical skills of procurement planning: RFT development, scoring systems and transparent evaluation.”

Procurement and tendering were under the spotlight at the inaugural GovProcure New Zealand 2017 conference in late August.

Boot presented at the conference and says, “Suppliers are frustrated at onerous conditions of contract; at having to respond to irrelevant RFT

questions; and at inefficient tender processes where multiple Notices to Tenderers (sometimes up to 20 or more) add to the cost of responding.”

Boot has seen hundreds of tender documents released by local authorities or central government agencies which have been hastily put together – evidenced by ‘cut and paste’ content, irrelevant recycled questions and weightings, or errors.

“There’s often a disconnect between the people planning a project or contract procurement from a strategic perspective, and those preparing the RFT documentation for release to market.

“It shouldn’t be a tick-box exercise – it’s an opportunity to derive value. Hopefully a wider uptake of the new NZQA Tender Evaluator qualification will start to make a difference in procurement capability.”

The new NZQA Tender Evaluator qualification emphasises the importance of fit-for-purpose, cost-efficient processes that provide transparency on the scoring systems and weightings.

Candidates who have already graduated with their NZ Certificate have commented that the process of achieving their qualification gave them excellent insight into how to streamline and improve procurement processes, as well as the opportunity to make a difference across their organisation.

Moreover, all the graduates to date have thoroughly endorsed the qualification as a means to create step-change in the effectiveness of procurement processes.

*For more information, contact [info@cleverbuying.com](mailto:info@cleverbuying.com) or phone Caroline Boot on (+64) 021 722 005.*

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