

NEW ZEALAND FUTURE ROADS CONFERENCE 2022: CLAUDELANDS HAMILTON

Day One

Ministerial Address: Hon Michael Wood

Current Challenges and Opportunities

- Big Investments, Big Challenges we need to get our focus right and need a unity of purpose.
- COP 27 is currently underway, and we need to tackle the challenge of climate change. Over 42% of emissions come from the transport task and is the fastest growing contributor. We need to turn this around sharply.
- Our roading network is the largest infrastructure asset in New Zealand. We need to turn our minds to how we manage this moving forward both urban and rural.
- We need to continue to look after the roads, they are critical to the movement of freight and people. Current GPS has invested 40% more than previous GPS 2010-2018 where the budget was frozen, so we have a significant catch-up job to do. We will continue to fund maintenance and stewardship as a core priority.
- We have to provide more genuine transport opportunity other than people just getting in their cars or trucks for BAU (Business as usual). That will still happen, but we need meaningful multi modal transport choices. Including freight hubs and coastal shipping. Roads will play a meaningful role in connecting our freight hubs.
- In our urban areas we need to prioritize safe walking, public transport and cycling. We need to embed low carbon communities. We are currently looking to do this in the new settlement about to be developed at Drury.
- Growing need for innovation. It is taking too long so we need to consider innovation as part of BAU moving forward.
- Auckland, Wellington and Christchurch need projects. Light rail, alternate harbour crossing (significant project with the alliance established to work on this). Mass rapid transit to decongest Wellington and enable densification of housing and moving people.
- NZ U-Grade programme well underway \$8.7b of investment across road, rail and walking. Penlink progressing well.
- Road to Zero. You can expect to see record investment as we seek to reduce to our DSI's (deaths and serious injuries) on the network. Our DSI's are higher than any other developed country.
- Our programme is ambitious. We need to look to improving our dollar spend. My challenge to everyone in the room is to think about how we get multiple outcomes from each dollar of spend.
- We will work with Waka Kotahi on funding bands. New projects, urban, rural etc. We are going to be looking really hard at projects that deliver multiple outcomes. We need to think about emissions reductions across the board. We see it as a core responsibility to put sufficient funding into the bucket to look after our core assets (maintenance). Our priorities will change but we will not neglect maintenance.
- Using composite materials for our carriageways is one of our innovation projects under R and D (research and development).
- Question from the floor is will the Government work with us on safe and appropriate speeds which isn't necessarily lowering the speed on all roads. Ministers' response is that lowering

the speed will reduce DSI's (Deaths and Serious Injuries). National base line will only apply to schools at this time. We need to look at the core evidence in the mega maps. This is the starting point not the end point. We are not yet looking at introducing a blanket protocol.

- Infrastructure strategy needs to be 25 years +. Will you work with us to achieve a more strategic approach to infrastructure planning and investment. Yes, but would need to get everyone to buy into this and work with the infrastructure commission. Rub is we live in a democratic system and that means commitments may change. Different Governments have different objectives.

LEADERS PANEL: HOW WE SEE THE PERFORMANCE OF THE INDUSTRY

Significant challenges have been placed on the industry in the past five years. Population growth and movement fanned by disasters. What are the opportunities and how do we capitalize on technology and social procurement.

- Climate is absolutely going to be the focus moving forward. Emissions, asset management, funding model, resilience and road to zero. We need to get the focus right on looking after what we currently have before we look to new things.
- Our biggest challenge is our people. Where are we going to get all the people to do what needs to be done and changing mindsets. Where is the human capital.
- We will never have enough money, so we need to think about a different way of doing business.
- Setting priorities, access to information, challenge the status quo. The health and wellbeing of all of us depends on transport. From movement to environmental/health outcomes. Expectations of immediacy are becoming louder. We need to use communication better to engage at grass roots.
- Population growth and heavy vehicles are placing a lot of pressure on the network which is creating challenges on roads that were never designed to take those kind of loads
- Auckland Council has over 7000k of network. Currently we can only fund 10k of rehabs per year. We design our roads for 10 years, but the reality is we are currently asking them to last for over 700 years. Money needs to go into the right place. If we put people in buses to take cars off the road, we achieve one objective in reducing emissions, but buses are heavier, and this is creating cracking and potholes...Growth also means more freight and HCV (Heavy Commercial Vehicles).
- We need to spend more time looking at the purpose and function of each road, so we move away from the one network road classification to a framework of driving prioritization and investment.
- We are going to have to make some hard trade-offs!
- Focus of putting off investment (because the numbers are scary) is transferring debt to our future generations. We need to fund properly today.
- In the US there is a trillion-dollar deficit in the network leading them to close roads and bridges etc. In Europe a user pays model is driving better investment decisions. Think of planes tickets. If you fly off peak its cheaper. If we used this model here, we could drive change. In Europe you have to pay to use the motorway – its accepted.
- The changes we are trying to impose on our communities have not been well articulated. If we want people to change and buy in, we need to sell the vision and people need to be

brought along on the journey with us. If we are going to ask people to pay to park for example, then they need to understand the big picture.

- It is no longer acceptable to build roads for single occupant vehicles.
- Do your asset management plans tell the story of the what and the why of what you are trying to achieve.
- Concrete and steel are high carbon emitters. We need to consider alternative sustainable materials. Construction methods are also high carbon emitters (think diesel trucks) so there is a lot of space for innovation in this space. Auckland transport will this year introduce a carbon reduction KPI for our network maintenance.
- Driver training can result in a 20-25% reduction in emissions. Material compaction is another example where if you do it right you can burn less emissions. In 10 years, fossil fuel vehicles will no longer be able to be imported – this will drive industry change.
- Bitumen is not a sustainable product, but we are not yet at a place where we have a viable and practicable alternative. Cost is still a barrier to entry.
- \$15m innovation fund has been introduced into the NLTP (National Land Transport Plan) to help start to break down those barriers.
- Is procurement actually enabling innovation and alternative solutions? Sometimes this means trading off risk, so we need to be careful about that. One recent example is we looked to wood instead of steel for the Penlink Bridge...
- We need to invest in our workforce.
- We discovered over \$100m in maintenance compliance costs via a recent audit as everyone needs to lawyer up on both sides with their documentation. This is bonkers so we need to standardize templates and create a library of documents that everyone can access. Need standardized methodologies and practices across the sector. We waste a lot of energy on bespoke design, we can drive savings through standardization.

WAKA KOTAHI KEYNOTE ADDRESS: NICOLE ROSE CEO – THE FUTURE IS NOW

- No matter what or how we move we will still need roads into the future. Our current network is now close to 99,000km.
- Everything needs to be planned, integrated, decarbonised and user centric
- Different approach needed for our metros/urban/provincial sectors. De carbonisation and micro mobility will occur in our cities whilst our rural areas need resilience
- Government Policy Statement is currently under development and will focus on the movement of freight, safety, climate change, public transport, mode choice, heavy rail, coastal shipping, resilience etc
- We always receive more applications than we have money for, and so hard trade-offs will need to be made
- Looking to introduce over 800 safety cameras over the next decade.
- Innovation and technology – VIM's and Digital Twins. So, we can see and report in real time. It puts real heat into the deliverability of the system.
- Ambitious 40% reduction target in our DSI's via Road to Zero. Concurrently we are investing in safer roads, more road policing, maintenance and planning. Higher focus on things such as mobile phone use in cars.
- Demographics. Where and how we grow is leading to more required investment in the transport task. Northland, Auckland and Waikato are the areas predicted to grow. This

impacts on the movement of freight and the need for transport investment. Our population is aging, and this will lead to a different kind of investment as we plan for cities of the future.

- We have a very small population, with very high aspirations. Everyone wants great first world infrastructure, but we are not willing or capable of paying for that. We are also not placed to deliver on many of these aspirations.
- Supply chain and labour issues are having an impact along with an historic underspend has resulted in some real issues on our network.
- FED (Fuel Excise Levies) and RUC (Road User Charges) are no longer sufficient to meet our funding task. Currently only about 60% of our funding task is sourced via this methodology. The balance being met by the Crown by way of a loan that needs to be paid back. We need to introduce a new funding model. This will not be popular and is one of the hard conversations coming. We all need to be part of the change that is coming.
- Managed retreat has to be a conversation especially in our rural communities. We are currently considering the upper South Island and asking if reinstating roads is the right conversation. Maybe it is coastal shipping?
- Bold courageous decision making is required.
- Kainga Ora is a problem for us as they are not considering the transport task. We need Councils to be more involved in planning. Recent planning changes for intensification needs to align to the transport task. We are brought in after the fact and that is the problem. We need to be at the front of the conversation. Developers are still encouraged to undertake green field developments and then complain that they don't have the transport linkages.

PLENARY SESSIONS

- Pavement: Concrete, Technical Standards, Sustainable Methods
- Procurement Models: A new direction for procurement
 - Pricing and consenting risk
 - Advice for Councils around putting out tenders
 - A move away from alliances and D&C
 - Bespoke v Standard
 - Contract models
 - Multi district maintenance procurement
 - Contract lengths
 - Quarries and how they meet the roading specs
 - NOC (National Operations Contract) update
 - Putting New Zealand's Emissions Reduction Plan into action
 - Electrifying asphalt plants and bitumen storage
 - Case Studies New Plymouth, Tauranga City, West Coast
 - Major Projects: What best practice might look like

WAKA KOTAHI: MAJOR PROJECTS ROADMAP

Mark Kinvig: National Manager Waka Kotahi

- Over a decade ago a \$160m funding gap was identified. The level of investment has not kept pace with preventative maintenance. This is recognized – it is going to take many years to rectify.

- We have flexible pavements that do not handle rain.
- We have added the length of NZ to the network in new roads or dual carriageways that's a lot more to maintain. We now have 99,000km + of roads
- Between 2018 and 2021 we have increased the surface road area by 7%
- Concurrently we have increased street lighting by 17%
- All of this needs to be maintained and funded. The funding model is broken and has not kept up with the size of the task
- We see the majority of growth occurring in the upper North Island with a 33% increase in HCV's
- Covid and workforce issues along with the supply chain challenges are all contributing to a challenging time
- We are looking to install 1000k of median barriers
- Cost of bitumen is up 100%
- We need to design for intended function not existing use

ROAD TO ZERO

- 2030 target is a 40% reduction in DSI's
- Five focus areas are infrastructure and speed, vehicle safety, work related road safety, road user choices and system management
- Around half the national DSI targets need to be achieved through infrastructure and speed management.
- Will require investment of around \$5b over ten years. \$500m each year. Will include median barriers, speed reviews, inspections and roundabouts.

NZ UPGRADE PROGRAMME

- \$8.7b Government Investment
- Rail, Walking and Cycling, Road and Public Transport Up-Grades
- 1,100 people employed to date
- \$2.1b of projects under construction
- Northland package includes:
 - SH1 Whangarei to Port Marsden Safety Improvements
 - Rail Link to Northport
 - Otiria to Whangarei Rail Line Upgrade
 - Northland Regional State Highway Upgrades

CLIMATE EMERGENCY RESPONSE FUND

- Reducing transport emissions by 41% by 2035
- \$1.5b funding package
- Progressing multiple initiatives
 - Mode Shift
 - Reducing VKT
 - Reducing emissions from public transport
 - Cleaner vehicles
 - Better transport options for everyone

WALKING AND CYCLING

- 700% increase in investment
- \$910m for walking and cycling in 2021-24 NLTP
- \$30m for 13 Councils to work with local communities. Streets for people.
- \$350m to roll out 150km of strategic cycle networks.

THE POTENTIAL OF LOW ELECTRIC VEHICLES (LEV's) IN GERMANY

- Could replace up to ¾ of German car trips
- This will reduce vehicle kilometres travelled by 50%
- Resulting in 44% less CO₂-e
- On average, for the trips substituted by LEV's, 88% of the emissions could be saved compared to cars.

FUTURE URBAN STREETS

- Provide access for cars to all neighbouring uses
- Be 30 KPH or have protected bike paths
- Prevent rat running by:
 - Prioritising pedestrian crossings at local intersections
 - Blocking through routes for cars
- Provide the space for bike paths by:
 - Removing on-street car parking, or
 - Removing flush medians and right-turns, or
 - Enabling one-way car travel only

INTERNATIONAL SPEAKER: THE UTILIZATION OF RECYCLED AGGREGATES IN ROAD CONSTRUCTION – A UK AND EUROPEAN PERSPECTIVE.

- Need uncontaminated sources and lots of it
- If you have to truck it more than 50m then it becomes unviable
- Design standards still have to be met
- Health and safety standards have to be met

DAY 2

ASPHALT: BITUMEN IN SUSTAINABLE CONSTRUCTION – LOOKING BLACK SEEING GREEN

This presentation focussed on how bitumen can make a contribution to a sustainable construction environment and how it can help the industry continue to meet the UN sustainable development goals. In Europe bitumen is the most recycled material in construction.

PANEL DISCUSSION: TRANSMISSION GULLY

The panel discussed the successes of the PPG approach to delivering on technically complex projects and lessons learnt. Take away message was that this project and Puhoi have largely benefitted from international expertise/technology and innovation which is now captured in the NZ market. The \$35m cost overrun was considered acceptable in light of other projects such as Auckland City Rail Link which is now \$2b over budget.

LET'S GET WELLINGTON MOVING

This presentation was around the \$7.4b joint initiative between Wellington City Council, Greater Wellington Regional Council and Waka Kotahi to make major investments in mass rapid transit, walking and cycling, public transport and SHW improvements to accommodate predicted population growth of 80,000 persons over the next 20 years whilst meeting climate change objectives and creating a liveable city.

PRACTICALITIES OF SPATIAL PLANNING REGULATIONS FROM THE PERSPECTIVE OF A ROADING ASSET OWNER

This session focussed on the Urban Development Act and the regulatory and planning landscape in the roading sector. RMA reform will impact the way we consent roading operations going forward.

FOCUS ON PROJECTS:

- Takitimu North Link
- Dunedin Retail Quarter (George Street) Up-Grade \$65m+
- Penlink: A new 7km two lane road with shared walking and cycling connecting Whangaparaoa. \$8.7b. In a NZ first the design incorporated 49m single concrete span beams.
- Hamilton Southern Links: Peacockes is a Greenfields suburb (720 ha, 7,500 homes by 2050) which requires a \$177m extension to Wairere Drive and new bridge over the Hamilton River + a new east/west arterial road upgrade package totalling \$50m. Central Government has underwritten \$300m of break in costs.
- Te Ahu A Turanga. The Manawatu Gorge roading project is \$620m of high technical complexity requiring 6 million m³ of earthworks alone.

ALLAN POLLARD: CEO CIVIL CONTRACTORS NZ

- A clear and consistent construction and maintenance pipeline is critical for innovation, training, plant and equipment, job security and workforce training.
- Opportunities for all contractors: large and small
- Responsibility for environmental social and community impacts
- Safety
- Changing driver behaviour and attitudes to our workers. Abuse of road workers is escalating. We are seeing guns and knives presented at our workers, rocks being thrown, vehicles

speeding through road works and aiming vehicles at our road workers. I talked to one young man who has been knocked out twice by being hit by thrown rocks.

- Decades of underinvestment in road maintenance. The infrastructure commission talks about compromising quality due to cost.
- Road safety is a function of road surface. If we are going to take safety seriously, we need to be concerned with a lack of investment in maintaining what we have
- We need a consistent work programme so we can have a consistent work force. We need to invest in upskill our staff. Again, the infrastructure commission has identified a serious shortfall in skilled construction staff. The looming workforce crisis is a particular focus of ours.
- We need to balance outcomes against productivity. Contractors are increasingly being asked to undertake more external roles such as community engagement with education around the why.
- Industry is concerned about the amount of money being spent on consultants and designers. Diverting funds from delivery. Standardization is critical.
- Procurement needs to be equitable. Large contractors are experienced at working at scale. We need to support a framework that enables all contractors to participate.

PANEL DISCUSSION: SUSTAINABLE ROADS – A MATERIALS-FIRST PLAN

For New Zealand to take a lead in sustainable roading, a co-ordinated approach will be required for design, construction, maintenance and materials-sourcing activities. Early planning should consider the sourcing of local materials. Consultants will need extensive local knowledge and design specs should match local geology and material availability.

Transport emissions is another concern. Contractors have commercial imperatives loaded on them in the procurement process. Often this sees them carting materials – aggregate, asphalt – over longer distances than required rather than using alternative localised supply.

I was invited to the VIP dinner with the Minister, CEOs of Waka Kotahi, Downer and Fulton Hogan. Higgins and Alan Pollard from Civil Contractors of NZ. Brilliant evening of debate. Relatively metro focused with a lot of debate centred on affordability, climate change and emissions reduction/mitigation. Recognition that the biggest challenge facing rural and provincial NZ is resilience and that meaningful change in transport choice and climate change mitigation will be driven by the metros. Brain storming session on how we can cut regulatory red tape, planning frustrations and speed up delivery.

NTA Representatives Geoff Devine and Calvin Thomas were in attendance also.