

# FUTURE FREIGHT SOLUTIONS

*An agenda for action*



New Zealand Business Council  
for Sustainable Development



April, 2011

**ABOUT THE PROJECT:**

The original intention for this project was to develop a comprehensive plan of action to achieve an efficient and sustainable freight transport sector by 2050. However, during our engagement with leading industry players, it became clear that short-term inefficiencies and capacity constraints in the sector had already given rise to a number of detailed studies on these issues.

All these studies from sector specialist groups, including the AA, Shippers Council, NZCID, NZIER and National Infrastructure Unit, confirmed the lack of a national consensus on an optimum long-term transport/freight logistics framework was compromising the quality and timeliness

of important infrastructure investments.

To provide better value to industry participants, this project was refocused to bring together the key discussion points that are exercising the private sector participants in the transport sector – mainly at a high level, rather than detailed action points.

It is hoped that this project will help facilitate wider industry/Government discussions leading to a better alignment of local and national government and private sector views on freight. No one organisation can fix these issues alone – it requires a dialogue to agree the major issues and a shared vision about how they can be fixed over time.

Some 45 companies and organisations participated in the Business Council's Future Freight project. The contributions of time from many executives and financial contributions from Toyota, KiwiRail and Ports of Tauranga have ensured the quality of research. This report is a summary of issues and possible solutions. A full technical report arising from this project is available at [www.nzbcscd.org.nz](http://www.nzbcscd.org.nz).



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*Bob Field*

*Chairman*

*New Zealand Business  
Council for Sustainable  
Development*

## INTRODUCTION: Why freight should matter for New Zealanders

While most of us probably only think about freight when we overtake a truck carrying a container, or wait while a freight train crosses in front of us at a road/rail intersection, for New Zealand and our standard of living, freight really does matter because of our isolation.

We enjoy middling first world incomes only because we can export successfully to countries far away and import products that others are better placed to produce.

To get our products to overseas markets and imports from overseas, we rely on supply chains, the longest on the planet. Our closest significant market or source is Australia, more than 2,000 kms away. Japan is 8,000 kms away, China 9,000 kms, the West Coast of the USA 10,500 kms, and Europe more than 18,000 kms.

Researchers tell us that the further you are from markets, the harder it is to achieve the same share of the market as producers based closer to those markets.

A manufacturer in London or Hong Kong has hundreds of millions of customers within 3,000 kms of its premises. In Auckland, the same 3,000 km radius will barely provide a market of 25 million customers.

We cannot do anything to physically reduce these distances, but if we are to export and import competitively, we need to have the best quality international supply chains – so that New Zealand firms can get their goods and services to offshore markets with speed, reliability, cost effectiveness and responsiveness. Without this ability to efficiently get their products to international markets, even the most productive New Zealand firms may not succeed globally.

At one time, trade (exports and imports in dollars) represented a much greater percentage of our Gross Domestic Product (GDP) but a decade of weak growth in the tradeable sector has left an imbalance in the economy. The current Government wants

this adverse trend to reverse. If we want to match Australian material living standards, we are going to need to grow about 2% each year faster than Australia for the next fifteen years or 1% faster each year for the next 30 years. We can only do that if our exports and imports grow even faster. Historically, for each 1% our economy has grown, our freight volumes have grown even faster. Just based on maintaining expected economic growth rates around current levels, we are advised that freight volumes will need to grow by about 70% – 75% over the next three decades. When told of these trends, 75% of New Zealanders expressed surprise, and more than 80% expect traffic congestion will get worse over that period (ShapeNZ, Dec. 2010). More than 70% of the public also expect that air and noise pollution will increase over the next 30 years as a consequence.

If we are serious about catching Australian levels of income, then freight volumes will need to grow by more than 100%. To achieve these growth rates, we need a better performing freight sector.

This report looks at the agenda to develop a shared view on how to improve the freight sector's productivity, and grow our incomes while doing a better job at preserving our quality of life. This, in effect, will be the cost equivalent of moving our producers closer to our key markets.

A number of challenges within the current supply chains are evident and were highlighted in discussions with stakeholders and reviews of international trends. They include:

- The need for a shared long-term vision;
- Inefficient landside access to ports;
- Rail not achieving its potential;
- Inadequate capital investment; and the
- Inability of supply chain participants to consistently co-ordinate to optimise efficiency.

A number of exciting opportunities now exist to lift the freight sector and supply chain productivity, including:

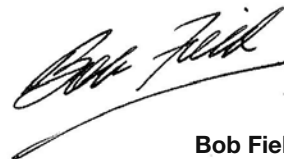
- Real-time management of traffic flows;
- Real-time reporting on freight movements;
- Time-specific charging for congestion, accident, noise and other externalities;
- New funding sources and mechanisms, including tolling, PPPs, a national motor fuel tax surcharge available to be allocated for regional roading;
- Hub and spoke networks, super-sized container ships, and deeper ports; and
- Substantial investments in rail to boost transit speeds and reliability.

These innovations, if introduced appropriately, could see New Zealand benefit as it did from initial introduction of refrigeration on ships, to enable the export of frozen meat, the advent of containerisation, the introduction of long haul jet aircraft for tourism, and the corporatisation of our ports and subsequent workforce reforms.

Many of our export markets are ahead of New Zealand in terms of sustainable supply chain management, which means there is a growing gap between the expectations of importers and exporters in terms of freight carbon emissions. The drive for export growth will mean Northern Hemisphere distributors and customers will be demanding higher standards of sustainable supply chain performance, and that will become an important driver for freight infrastructure. With the expected upward trend in fossil fuel prices, a lower carbon footprint will be synonymous with better cost efficiency in supply chains.

The potential improvements will, however require leadership from central and local government if they are to be realised. Any one innovation will face varied enthusiasm from private sector players, but the collective benefits across New Zealand can only be achieved from co-ordinated plans embraced by both business and government. Freight infrastructure will often last the life of 20 to 30, Parliaments. We, therefore, need to apply long term thinking to those issues backed by wide community and political buy-in for the policies.

This report has been the result of a collaborative effort by shippers, freight service providers, consultants, and others with the aim of making our supply chains more efficient and New Zealand richer. The report outlines the issues we currently face and identifies some solutions for discussion in developing a shared view on the future of freight in New Zealand.



**Bob Field**  
**Chairman**

**New Zealand Business Council for  
Sustainable Development**



*A shared agenda of freight and supply chain issues should be a key part of the Government's broader strategy...*

## An agenda for action to cope with growth and lift living standards

**New Zealand needs a shared view on the future of freight. Central and local government and the freight sector need to be aligned to:**

- Persuade the motorist, taxpayer, and ratepayer that efficient freight supply chains matter for New Zealand's future prosperity and quality of life;
- Move from the parochial, mode-centric (trucks, planes, ships, or trains) perspective to an efficient supply chain focus when planning freight and personal mobility investments;
- Ensure initially only one port in each of the North and South Islands is upgraded to achieve "big ship" capability, and support any port ownership and management changes needed to make this happen.
- Apply a widely supported and consistently used evaluation methodology for investments in personal and freight mobility;
- Ensure we take up new funding sources and mechanisms. These could include tolling, long-term bonds, and Public Private Partnerships (PPPs), for projects to recover their cost of capital, based on realistic assumptions;
- Ensure innovative approaches are taken to manage congestion, including time of use access charges for freight and high occupancy vehicle express lanes on an 'opt in' basis;
- Create a sector-controlled and shared freight movement information system providing real time information on freight flows to facilitate innovations that will boost sector productivity;
- Designate priority freight corridors and regional hubs across New Zealand for the next 30 years by means of a National Policy Statement so the network is deemed part of spatial and regional plans as a permitted activity;
- Provide provision for initial "concept" planning approvals, including the performance specifications required to minimise environmental effects, but allowing the final design to incorporate the best current approaches at the time of construction, provided it delivers effective management or amelioration of the environmental effects;
- Use prices more often to manage environmental externalities such as noise, carbon, or particulates where they are more cost effective than direct controls.

A shared agenda of freight and supply chain issues should be a key part of the Government's broader strategy to lift New Zealand's living standards. It would determine how transport and supply chain spending is to be aligned with long-term infrastructure development planning. Based on evidence from reports on freight in Ireland, Denmark, Queensland, Scotland and Melbourne, long-term planning for infrastructure (including a substantial transport component) will provide greater certainty for industry, help deliver investment confidence, increase growth, and improve social and cultural well-being.

In Australia, the Federal and State Governments are willing to take the lead in developing a national freight and ports plan to address an expected doubling of freight volumes. If we had a similar plan for New Zealand, it could be given expression through a National Policy Statement founded on a detailed review of the corridor and area demands, built around intra island, inter island, import and export supply chains. Such a study would be a desirable early priority for the new Productivity Commission.

# How big is the freight challenge?

## A BRIEFING ON NEW ZEALAND FREIGHT AND SUPPLY CHAIN ISSUES

### Meeting the challenges of strong freight volume growth expected across New Zealand

Across New Zealand, on current trends, freight volumes are expected to grow by about 70% - 75% between 2006/07 and 2031. Freight generated within the Waikato and Canterbury regions is expected to double (100% growth) over that period. Auckland is expected to see the volume of freight attracted to the region almost double by 2031. (Source - National Freight Demands Study 2008.)

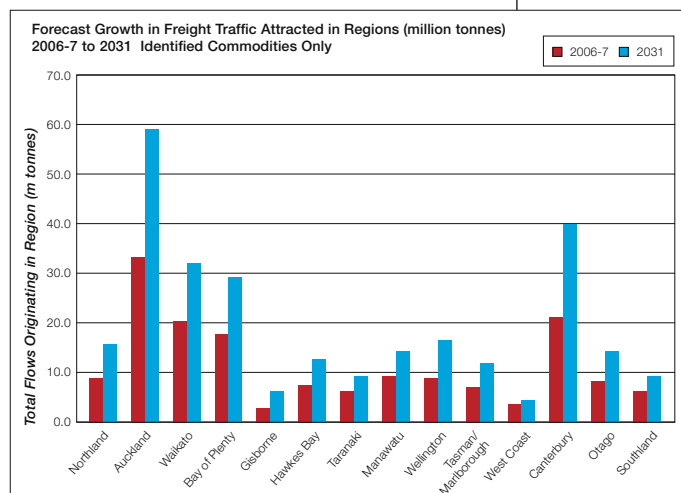
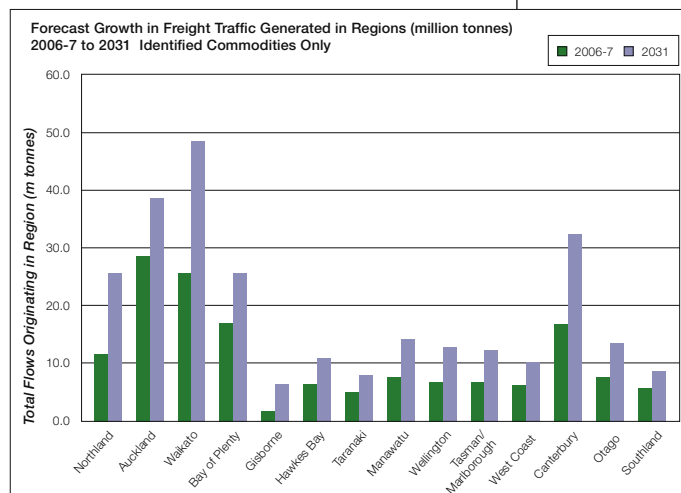
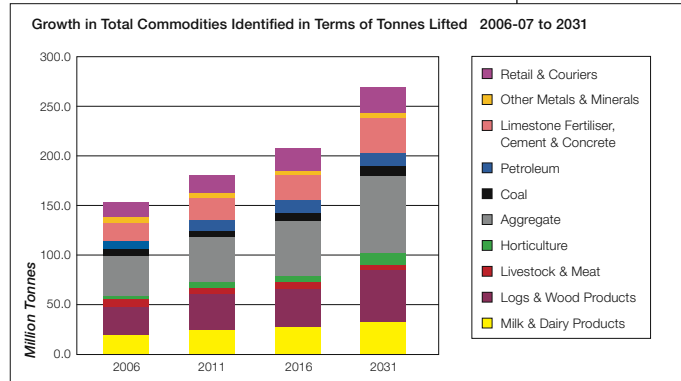
The freight volume growth on road and rail is expected to be concentrated in the “Golden Triangle” between Auckland, Hamilton, and Tauranga. Usually freight volumes grow faster than GDP growth. If we are serious about catching up with Australian income levels, then our GDP will need to grow 2% faster than Australia’s each year for 15 years, or 1% more per year for 30 years. If freight volumes grow faster than GDP growth, we are looking at freight volume growth of more than 100% on average across New Zealand over the next 30 years if we are to catch up with Australian income levels. Freight volume growth will be even faster in the Golden Triangle under that scenario.

To be prepared for this level of growth, we need central and local government and the private sector to share a view of the likely future for freight. We need to adopt a supply chain perspective on freight issues, rather than thinking about them from a mode (truck, train, ship, or plane), or parochial perspective. We need:

- Inclusion of priority freight corridors in regional spatial plans, as a broadly agreed basis upon which to locate freight and personal mobility investments; and
- Agreement on the need for port optimisation to avoid creating new “sunk” assets if five ports strive to become “big ship” ports, when only one port in each island can recover their cost of capital by doing so.

We need a plan – a freight and ports strategy to address likely congestion issues, particularly in the Golden Triangle, including:

- A network of freight priority lanes, linking Auckland, Hamilton and Tauranga, where access might be charged for at peak periods and is available for private motorists on an ‘opt in’ basis;



(National Freight Demands Study 2008)

*There is a reluctance to use prices, rather than just regulation, to manage social and environmental externalities like carbon, noise, congestion, and accidents.*

Meeting the challenges of strong freight volume growth expected across New Zealand	
<ul style="list-style-type: none"> <li>Development of regional hubs (places where freight changes mode or is moved into a different container) to move freight traffic away from the inner cities where possible (particularly in Auckland and Hamilton);</li> <li>Real time management of traffic flows on all major freight corridors.</li> </ul> <p>We need better information to help us realise the potential efficiency benefits from supply chain optimisation, in particular a sector controlled depository of real-time information of freight movements. That is now technically feasible, but is being held back by some mainly smaller scale road transport operators. They feel it threatens their existing business model. There is also a fear that a central Government-controlled option will be inefficient and used to control rather than support the sector.</p> <p>The developments in electronic Road User Charges (e-RUC) and Radio Frequency Identification Devices (RFID) based monitoring systems offer major potential benefits that will only be realised if the sector and the Crown find a way to co-operate more on information sharing.</p>	<p>Commitment to new funding methods, long life (20-40 years) bonds, road tolls and time of use, congestion charges and an increase in Road User Charges (RUC) or motor fuel levies, is needed to fund the freight related investments that can cover their cost of capital and to provide wider economic benefits.</p> <p>There is a reluctance to use prices, rather than just regulation, to manage social and environmental externalities like carbon, noise, congestion and accidents. By not including some of these costs in comparisons of investment options, one mode can be favoured over another to our overall detriment.</p> <p>The transport sector – mainly the passenger vehicle fleet – contributes around 20% of New Zealand’s greenhouse gas emissions. According to the Ministry for the Environment, the public transport passenger fleet and freight transport sector is responsible for nearly 60% of New Zealand’s transport emissions, which equates to nearly 12% of New Zealand’s total greenhouse gas emissions. Without effective action, freight transport emissions are forecast to increase rapidly by 2050 as volumes increase.</p>



**THINGS YOU NEED TO KNOW ABOUT FREIGHT AND SUPPLY CHAINS**

**Distance Matters A Snapshot of New Zealand Freight**

New Zealand's prosperity largely rests on its ability to trade. New Zealand is, however, located a long way from its suppliers and the markets it serves. Sydney is 2,000 kms away, Hong Kong 9,000 kms, Los Angeles 10,000 kms, and Europe 18,000 kms.

The NZIER estimates that for every 1% increase in the average distance between New Zealand and the country it exports to, exports decrease by 2.6% on average.

We can't change the physical distance to our export markets, but by managing our supply chains (the way our exports get to final customers, and how what we consume gets to our home or workplace), we can improve our competitiveness compared with suppliers located closer to the customer.

**The size of the freight sector.**

Total annual revenue of the transport, postal and warehousing sector is around \$18.5 billion (2007). In terms of value added, the sector accounted for about 4.7% of the New Zealand economy.

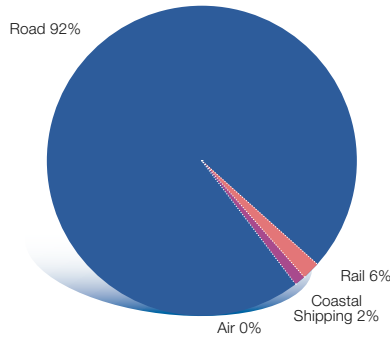
**Modes that matter**

Road is the dominant mode for freight in New Zealand, estimated to carry 92% of freight by tonnes and 70% of freight by tonne-kilometres and is forecast to remain the dominant mode in the foreseeable future. Only about 7% of land transport is considered genuinely contestable, that is it could be transported by either road or rail.

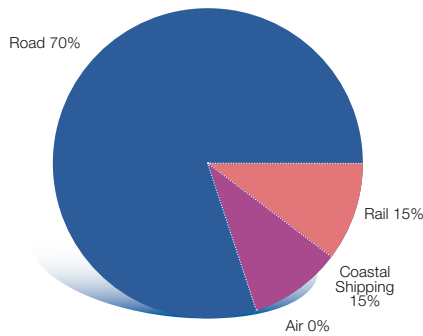
**What is the significance of ports?**

Around 99% by weight of New Zealand's international trade is handled by ports. Of this around 39% is containerised, representing slightly less than 1% of annual global container throughput. The efficiency, reliability and cost effectiveness of the international supply chain is particularly important for a country like New Zealand because not only is it geographically distant from its key trading partners, but its economic prosperity is highly dependent on the performance of its export sectors. Reliability and flexibility requires some excess capacity in the system to deal with inherent unpredictability of some freight movements. The ports of Auckland and Tauranga handle 60% of New Zealand's exports by value.

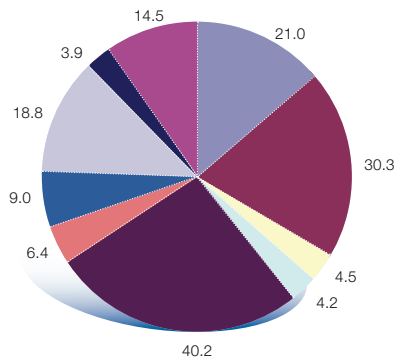
*The Current Freight Task by Mode (tonnes)*



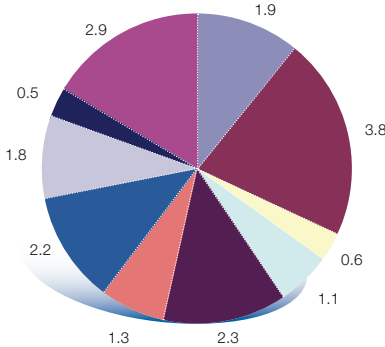
*The Current Freight Task by Mode (tonne-kms)*



*Tonnes Lifted (millions)*

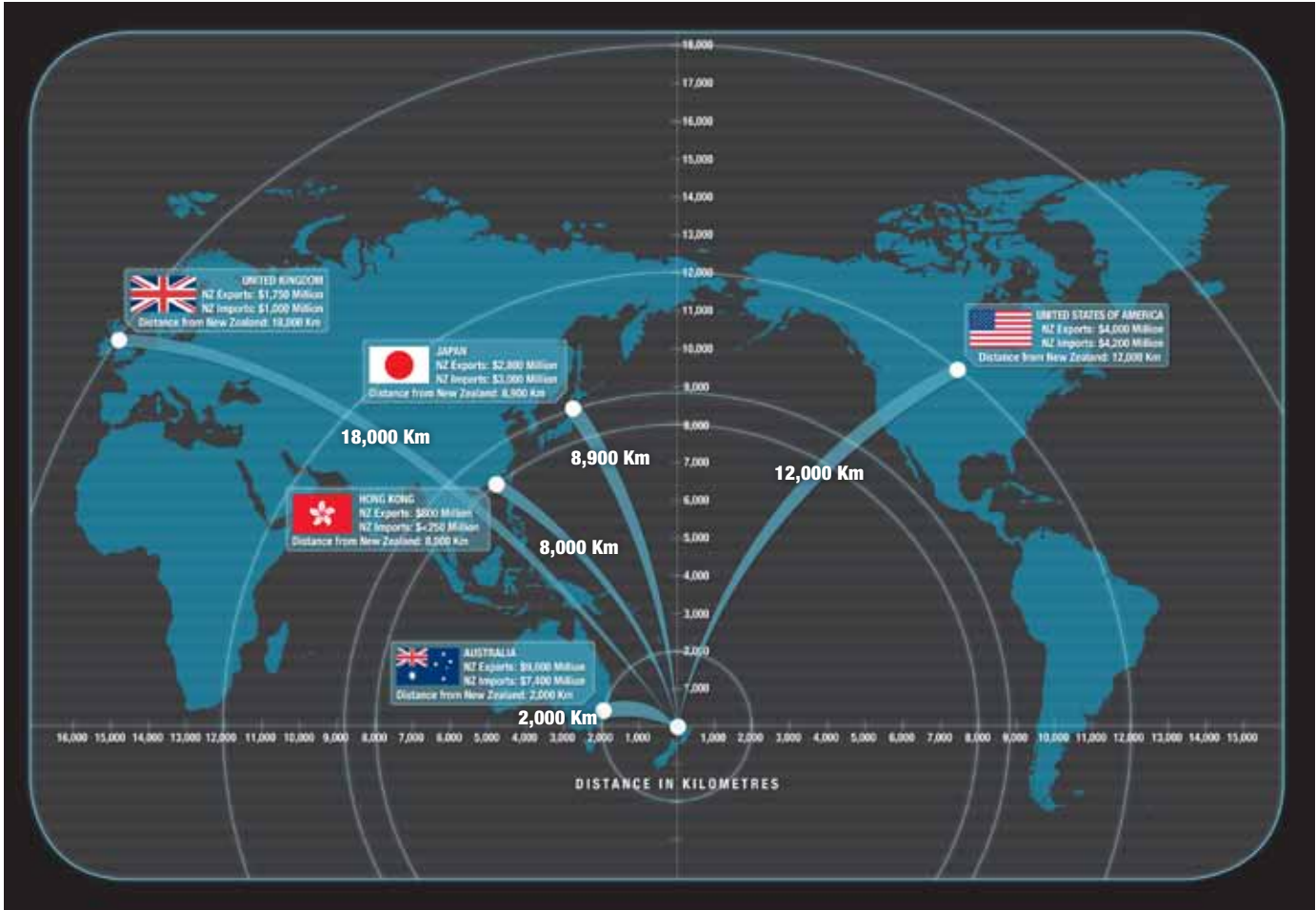


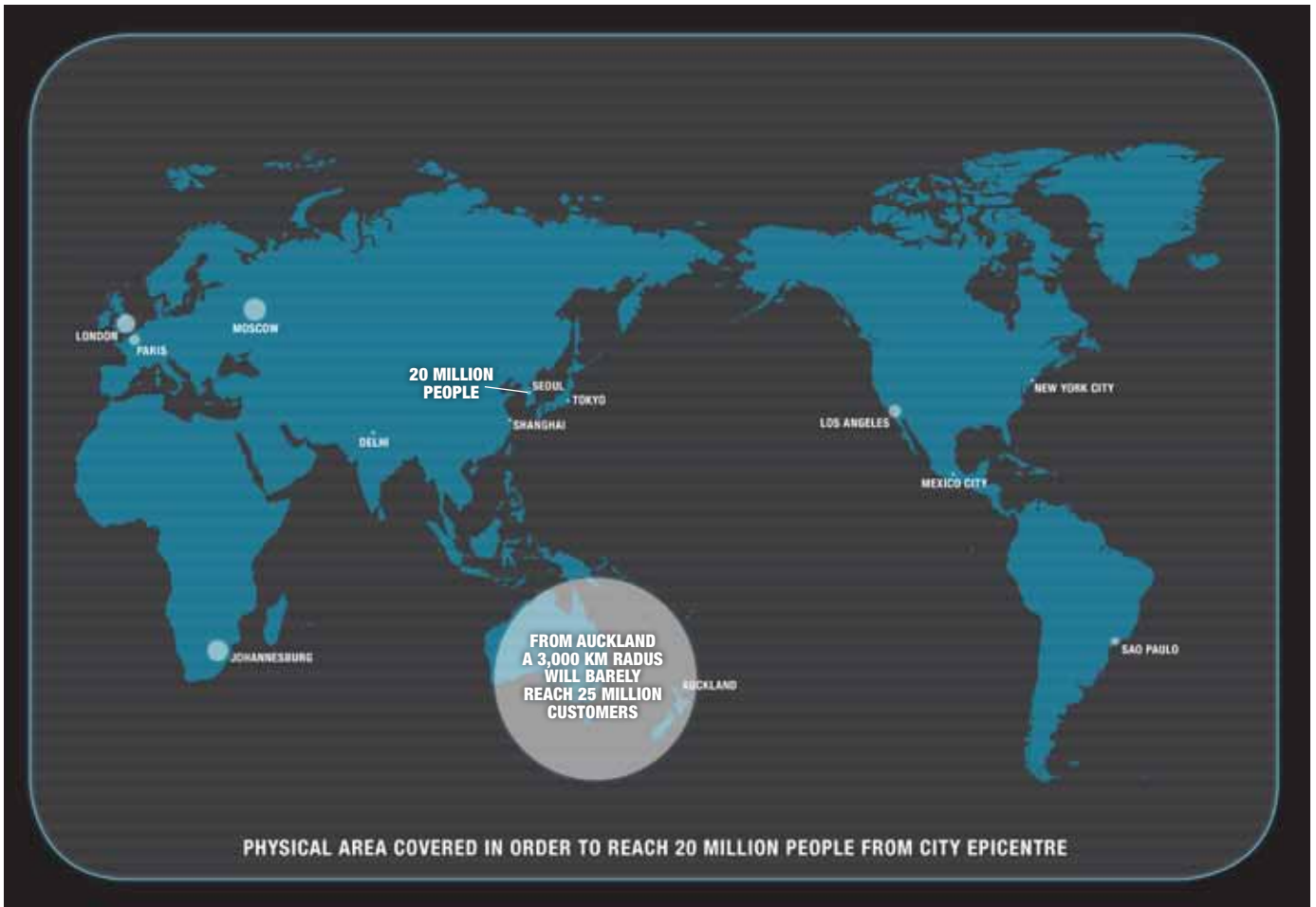
*Tonne-kms (billions)*



(National Freight Demands Study 2008)

- Milk & Dairy Products
- Logs & Wood Products
- Livestock & Meat
- Horticulture
- Aggregate
- Coal
- Petroleum
- Limestone Fertiliser, Cement & Concrete
- Other Metals & Minerals
- Retail & Couriers





*The efficiency, reliability and cost effectiveness of the international supply chain is particularly important for a country like New Zealand...*





**Distance Matters** **Thinking about supply chains**

Many ports are facing constraints from land availability close to the port and access to transport links. Auckland Airport handles 85% of New Zealand's international air freight trade by value.

These percentages point to the actual importance of addressing the efficiency of freight networks in the Golden Triangle.

New Zealand's size and distance from major markets is well recognised. For example, it takes over a month to get goods to Europe by sea and 15-20 days to get to the west coast of the US. In terms of air links, New Zealand's international connectedness does not compare well to other developed countries. As a consequence, New Zealand firms are not as well placed to participate in areas of the global economy where speed to market matters.

The OECD estimates New Zealand's distance to market adds a 10% penalty on GDP. This is substantial. Effectively "shortening" the logistics chain by reducing costs, and getting goods to market faster and more efficiently is important.

In addition, the value of each tonne that New Zealand exports is relatively low. At a little more than \$1,500 per tonne compared to \$3,200 per tonne in the US, there is ongoing debate that we need to think creatively about how to develop the supply chains of New Zealand firms in order to support the transition to a lower weight, higher value economy. Given the strength of our land-based export economy, this is a transition that will not happen quickly.

**New ways of thinking about freight and logistics**

Traditionally we have thought about the mode of carriage (rail, road, ship) and usually from a parochial viewpoint when considering freight. The traditional approach often missed the big picture. For example, if you fly across the USA, you may leave Los Angeles, fly to the hub in Chicago, Dallas, Miami, or New York, and then fly to a smaller centre such as Cincinnati, a spoke from the hub.

*"By thinking about the end to end supply chain ("from the paddock to the plate"), we make better decisions than just thinking about one segment of the journey in isolation."*

*(The Question of Bigger Ships, 2010)*

*"Improving the movement of freight across its end to end journey and understanding where pinch points exist is essential to maintaining and improving the UK's competitive position."*

*(UK Department of Transport 2008)*

It might be faster to fly from Los Angeles direct to Cincinnati, but the “hub and spoke network” keeps the price of airfares down, and allows for greater frequency.

You will travel on a large plane between Los Angeles and Chicago to give economies of scale, but a smaller aircraft will take you on to Cincinnati to provide the frequency required to service that city.

With freight, a high value perishable product, i.e. cut flowers or fresh seafood, might be able to pay for the direct flight, but often the “hub and spoke network” best combines frequency with lower costs for lower value commodities.

To match the requirements of both supplier and customer, supply chains are usually multi modal, combining trucks, trains and planes to provide the door to door service required. Each mode has its strengths: trucks provide flexibility and are the predominant movers of freight; whereas rail is ideally suited for bulk heavy loads such as coal, cement, timber and bulk liquids and aggregated freight. Some customers will value frequency and others the lowest possible cost. Supply chain management enables either preference to be matched with the options available. When heavy loads move off the road to rail, there is less damage to roads from heavy trucks and less congestion, noise pollution and accidents. Pricing these “externalities” helps ensure the best freight or supply chain solution for the shipper is also the best for society as a whole.

### Case study: Wiri inland port

The \$9 million rail link to Wiri inland port in South Auckland, which lies 25 kms south of the central city, has three associated sidings. They are anticipated to save 2.5 million kilometres of truck travel a year. This is the equivalent of 100,000 trips between South Auckland and the central city. Businesses located within 8 km of the Wiri hub are expected, on average, to cut carbon emissions from container transportation by 25%.

*(Ports of Auckland, 2010)*





*The Government has indicated it is open to new ways of charging and pricing for road use*

**Just In Time Manufacture**

At one time, a product was made, delivered to the store, and, if it did not sell, it was sold at a discount or returned to the supplier.

To reduce waste and the financing cost of holding inventories of goods yet to be sold, it is now more common for goods to be manufactured and delivered after the customer has specified their requirements and paid for the product.

We use this approach to purchase computers, cars and books. It requires highly efficient and reliable supply chains to keep the customer happy. It is also more profitable as it reduces waste and speeds up payment for the manufacturer.

The growth of e-commerce also increases the number of individual shipments, reduces their size and increases the value of responsiveness and flexibility.

**Tolling and Time of Use Charging for Roads is More Popular Than Many Think**

**Tolling and time of use charging are not new to most New Zealanders.**

- Many New Zealanders have used a toll road in Australia, the USA or Europe.
- 75.8% have paid a toll somewhere in the world and 63.9% thought it value for money.
- We had tolls on the Auckland Harbour Bridge for more than 30 years. It not only paid for the bridge, but much of Auckland’s motorway network.
- At Puhoi and in Tauranga, people and freight movers now voluntarily pay tolls, with a non-tolled alternative road available.
- When the Waterview motorway extension was being debated, more than 50% of the people polled by the New Zealand Transport Agency (NZTA) said a toll to pay for a new development was acceptable.

We are also familiar with time of use charges that vary with how busy the service is. We face this every day when we use a mobile phone, when we book a flight, a hotel or go to the movies. We expect to pay more at peak use period and to pay a lot less when things are not so busy. The retired grandmother knows she can have her hair permed on a Monday or Tuesday for half price, but if she wants it done just before her favourite granddaughter’s Saturday afternoon wedding, she will pay the full price on Saturday morning.

**Tolling and time of use charges are more acceptable when:**

- An alternative non-charged route is available;
- The money raised is used to improve services or bring forward developments that reduce travel times and delays;
- A high proportion of the revenue raised does not end up being absorbed by or wasted on collection costs, a criticism of the Puhoi tolling operation;
- The infrastructure funded by tolls will return to public ownership once the concession ends.

In Stockholm, one year after it introduced tolls which varied with time of use as a trial, a referendum approved the continuation of the tolling policy, after it was seen to reduce congestion by 25% and speed travel times in the inner city.

**Current Government to engage in debate on new forms of charging and pricing**

The Government considers there is a need for a public debate on the long-term issues of affordability and efficiency facing the transport system, and the potential benefits in the medium to long-term of moving to new forms of charging and pricing that replace, rather than add to, the existing system.

In the short term, the Government is committed to simplifying and improving the quality of the current Road User Charging system. For example, policies have been developed to allow the voluntary introduction of electronic distance measurement technology, which can be integrated with the purchase of RUC licences. In the long term, an efficient level of use is most likely to be achieved when users pay the full price for the costs they generate.

Use of the transport system should, ideally, be based on more accurate price signals to enable users to make informed decisions about which corridor delivers the best outcomes for the cost. Once this occurs, current infrastructure will be used more efficiently and, where additional investment is required, those investing will have a greater degree of confidence in the value generated by their investment.

*(National Infrastructure Plan, 2010)*

**What can we do to improve the efficiency of our supply chains?**

**We cannot perfectly predict the future, but some planning and market errors are easier to reverse than others**

**There are a number of ways we can improve the efficiency of our supply chains:**

- Increase the size of the ships, trains and trucks we use to help cut costs, and which may reduce frequency.
- Reduce congestion so we can achieve more deliveries and improve reliability, with the same carrying capacity.
- Schedule loadings and unloadings better so there is less waiting time when collections or deliveries occur.
- Increase the volume going through a facility (port or depot) so that the people and machinery, like cranes, are used more frequently and costs are reduced.
- Create regional hubs or “logistics cities” close to existing ports or rail lines so that transfers of containers or bulk cargoes can move away from city streets or residential areas.
- Use information better so that it is easier to co-ordinate freight flows with the capacity available to carry it, thereby avoiding movements of trucks, wagons, ships or planes without full loads, or to increase reliability and responsiveness.
- Carry information along with the container on what freight is being carried to and from where, so that low risk products can move faster through Customs clearance and customers can “track and trace” freight.
- Real-time information would also enable businesses to manage stock levels to more closely match sales, freeing up capital in the business.

If we invest in a new truck, railway engine or ship, and the demand does not arrive, we can shift that asset to another use quite easily without losing much of the asset’s value.

If we build a new road, rail track, or deepen a harbour to accommodate an expected increased demand that does not eventuate, the assets are “sunk” and have minimal value. In effect we have wasted our money.

Decisions to invest in infrastructure are specific to location so we must be very careful only to build new fixed assets where the future income to pay for them is highly likely. We cannot assume that if we build it, they will come. If an investment is more risky, we need a better return to justify the investment. We should, therefore, use a higher cost of capital to evaluate more risky investments and spend more time ensuring that we get the forecasts of future income and costs as accurate as possible.

Business often manages this risk by delaying the investment for as long as possible and only proceeding when the future is known with greater certainty.

It is also possible to under invest if we are so cautious that our investment is not designed to enable likely future capacity to be added.

**Information Technology is Creating Smarter Ways to Manage Supply Chains**

**Case Study: Fonterra**

Fonterra uses an in-house scheduling/tracking system using GPS road network spatial mapping. It involves live scheduling, dispatching and tracking of vehicles/loads. The run sheet is delivered electronically to an in-cab system. Units in trucks log location every 7.5 minutes and identify when trucks are at a farm. Tags identify the farm and flow metre logs the milk pickup quantity. The system is dynamic in that vehicles can be rerouted almost instantly, taking into account a range of factors to identify the optimal route. The system also takes into account various constraints such as the ability to turn out of driveways (tanker turn restrictions), bridge weight limits and scheduled pick-up time. This system has led to an ability to reduce or redeploy, schedule and dispatch staff, as well as reducing the number of vehicles on the road. Efficiencies of 20-50% are achieved in specific areas. This spatial platform is used for other purposes – like forecasting milk production based on climate and grass growth; and the possibility of using an approach to pick up scheduling which works from top of hill down to avoid hauling milk up hill.





## Problems and potential solutions

### Problem:

**Motorists vote, freight doesn't: politicians won't be able to give priority to fixing the problem unless we have a broad public understanding that freight and supply chains matter for them.**

Freight and supply chain issues only get priority when we hit a crisis, or they become an issue for motorists. Motorists, taxpayers, and ratepayers need to appreciate our mutual interest in more efficient freight movement and supply chains. We are at the end of the world's longest supply chains and are trade dependent for our first world standard of living and quality of life.

We cannot reduce these distances, but if we have the world's most efficient supply chains, then the impact of our isolation in part is reduced. By understanding the issues of how our products get from the paddock to the plate, or from the manufacturer to our homes, we can build a shared interest in more efficient supply chains.

Central, local and regional government, along with freight service providers all need to co-operate to plan, provide, fund, and manage efficient supply chains. We need a conversation about how we can make this happen. The different approaches used to evaluate road and rail investments are an issue. The fact that roading project selection is predominantly

a bottom up process from regions, while rail freight investments are planned by one national organisation, helps to encourage parochial decision making with a mode bias. The Roads of National Significance (RONS) process, in part, was an attempt to inject a more national perspective on roading priorities.

### Potential Solutions:

- We need a shared understanding that freight and supply chains matter if we aspire to higher living standards and a better quality of life.
- While freight movements are only a small share of road traffic, a serious programme to address road congestion issues is a way of creating a win-win outcome for both motorists and the shippers of goods.
- Motorists need to understand the link between how our exports and incomes grow and our quality of life can improve, and the link to higher in freight volumes.

Freight policy and supply chain issues are best addressed in a national context without either a mode or parochial bias.

The conversation on these issues envisaged in this report provide one way for these problems to be addressed.

## Problem:

**We let parochial and mode centric views stop us from developing the best supply chain and mobility solutions for New Zealand.**

We tend to make decisions about freight from a parochial or mode based perspective rather than asking if it will create the most efficient supply chain for New Zealand to benefit.

For example, when Fonterra decided to switch its exporting activity from the Port of Taranaki to the ports of Tauranga and Auckland, the debate that arose was about the cost of sending the product to Tauranga or Auckland, rather than New Plymouth. The more useful question was what difference in cost did it make to get the product to its final overseas destination? Concentrating container transported exports through fewer ports creates economies of scale that reduce the cost of delivery for producers. This provides us with better returns as a country.

Supply chains are usually multi modal involving trucks, trains, planes, and ships in combination. That, in turn, gives the best combination of cost, delivery time, and reliability to meet customer demand. Policy, therefore, needs to reflect the underlying attributes of each mode rather than be based on a view that trains are good and trucks and cars are bad, or vice versa. Policy needs to encourage the most effective supply chain based on full costing of the externalities created by emissions, congestion and noise.

## Potential Solutions:

Agree that the efficiency of our supply chains should be the basis by which we evaluate freight and mobility policy and investments that impact on freight supply chains.

Policy should, therefore, be unbiased with respect to the location of the investment or the mode used to provide an efficient supply chain. Users should be able to pick the combination to give them the best supply chain for their needs.

The newly created Productivity Commission should make a priority of looking at the potential productivity gains from having more efficient supply chains.

*If New Zealand's total freight task is expected to increase by 75% by 2031, we need a strategic framework for an optimal mix of rail, road, sea and air.*

*(Jim Harknett, Chief Risk Officer, Ports of Auckland, reported in Shipping Gazette, 2009)*



## Problem:

**We need an agreed and consistently applied way to select the best road, rail, public transport and port projects if we are to make the best investments in improving freight or personal mobility.**

New Zealand no longer has a widely accepted and used evaluation procedure for deciding how, when, and where to invest to improve personal and freight mobility. This means greater uncertainty about what will be built. It diverts attention from better project planning and delivery into more lobbying with the potential for low quality transport investments to be made.

In recent years, projects such as the commuter rail electrification upgrade in Auckland were funded despite failing to meet the usual investment benchmarks for return on capital.

Using the approach usually used to evaluate roading investments (the EEM) the rail upgrade would not have been funded as it only returned 88 cents in benefits for every dollar invested. When Wider Economic Benefits (WEB) were added the returns increased to \$1.09 for each \$1 invested. The Roads of National Significance (RONS) were approved without a full evaluation of likely return on the investment being made. (Subsequent to approval, the RONS portfolio has been evaluated and is expected to provide benefits in excess of those required to deliver an 8% benchmark rate of return on the basis of revised assumptions including the Wider Economic Benefits such as agglomeration). That analysis did not, however, answer the question of how the individual RONS projects compared with other investment opportunities available.

Applying Wider Economic Benefits to the evaluation of preferred projects is not evaluating projects on a like for like basis. It is like allowing one car in a race to have a supercharger installed while all other cars are restricted to standard models with no supercharger. Picking winners by changing the rules for a preferred option only helps us all to become poorer, if better performing alternatives under the same evaluation criteria were available.

## Potential Solutions:

We need to return to an evaluation framework that is universally applied, and where projects that do not meet the benchmarks on realistic assumptions do not proceed. If decision makers want to create new criteria, such as Wider Economic Benefit for investment evaluations, they should be applied to all similar projects.

The hurdle rates of return should reflect the riskiness of the specific investment. Prices for environmental externalities should be included, along with the embedded real options that are present if there is expected future growth. For example, the Auckland Harbour Bridge was built so strongly that the "clip ons" could be added without additional strengthening below the water line to accommodate future growth.

Wider economic benefits, including agglomeration effects (the benefits that come from business and people being able to work together easier), provided they do not involve double counting, should be included but on a consistent basis for all projects. For example if the benefits to society from a rail investment cannot provide a commercial return to KiwiRail, then the gap should be funded provided the overall return to society matches the other investment opportunities available.

The Crown may have reason to invest in a project that does not meet the standard criteria. If it does, it should be required to report on why it has done so for one project alone, or change the evaluation manual so that the criteria applies for all other project opportunities.



## Problem:

### **Delays between consenting and construction mean we get far from the best freight and mobility solutions.**

The delays between planning transport improvements and project completion means we build what was consented 10 years ago, rather than the best answer for today. We also pick the most easily consented solution, not necessarily the best one, and we often fail to realise the total across-network benefits available.

The Government has taken actions to speed up the approval process for consents under the Resource Management Act (RMA), and to grant non RMA consents such as the Historic Places Act and other consents in parallel to avoid delays. Other problems, however, remain:

- The “right of way” designations for transport corridors and related hubs should be a part of the spatial plans rather than being re-litigated as part of each approval of a project with huge potential for delay from several objectors. Doing it well and doing it once should be the approach.
- The requirement to obtain consent many years ahead of construction for what will actually be built means that, what is constructed can be several generations behind current best practice by the time the project is actually built.

At present, there is some suggestion that fear of consenting delays is helping to create a culture of “work arounds” where:

- Projects are planned not on the basis of what will provide the most economical solution but what promoters feel will be the easiest to consent (an Auckland cross harbour tunnel rather than a much lower cost bridge with the same capacity);
- Over specifying or greenplating to get consent, but which is not economically viable when built 10 years later, so features are dropped or the projects does not proceed (Waterview connection).

### **Potential Solutions:**

The “right of way” designations for a corridor and related hub should be part of a national spatial planning process so that all stakeholders know the planned route well in advance, and can align other activities and investments to best use the planned corridor. With the corridor already designated, the actual allocation of use between road, train track, or cycleway, can come later as better information on likely demand becomes available.

The New Zealand Council for Infrastructure Development (NZCID) has suggested that an outline or concept planning approach be used: the outline of a solution is provided, but with the requirements for minimising environmental affects specified in great detail up front. This would allow the best solution to be built that complies with the affects-management requirements, using the best contemporary solutions. This approach ensures the management of environmental effects is robust, but encourages innovation in designing the solution to deliver a better outcome and improve productivity.



## Case Study: Two Cities

### Auckland's Western Ring Route

- 1983** The first section of the Western Ring Route - Mangere Bridge - was constructed.
- 1984** The motorway between Queenstown Road in Auckland City and Coronation Road in Manukau City was completed.
- 1987** 4.1km Papatoetoe Bypass was constructed and further sections were added progressively to link the motorway to the airport.
- 1997** Mangere extension opening.
- 2009** 4km Mount Roskill extension approved, funded and finally completed.
- 2011** SH1-SH2 connection through Manukau City.
- 2015** The Waterview connection, the final link, will be completed.

### Sydney's Orbital Network

- 1987 to** Nine toll roads constructed around circumference of Sydney making up 110km
- 2007** Sydney Orbital Network.

The improved mobility and connectivity provided by the Orbital network has been estimated by Ernst & Young in 2008 to have generated a net present value of \$22.7 billion over and above the cost of construction. This was approximately 15% greater than the sum of the initial valuations for each of the projects undertaken prior to construction.

The application of user pay funding has enabled limited public funds to be invested in other NSW state priorities including expansion of the public transport services.

Source NZCID

## Problem:

**There is now a substantial funding gap between the cost of projects that more than cover their cost of capital and what can be paid for from the traditional sources of RUC, petrol tax, other taxes and rates.**

Although there is no shortage of freight and personal mobility projects that will achieve a positive return to society, there is not enough financing available to fund them all from existing sources. We need to use new sources of funding and innovative approaches if we are to fund developments where the evaluation has shown we should be prepared to pay for them by demonstrating a positive return.

Ten years ago, for almost any motorway or public transport upgrade that reduced congestion, the voters and ratepayers were prepared to pay for them from increased taxes, rates, or in motor fuel duties. Road projects are becoming more expensive as standards improve, and cheap route options are no longer available. Rail through KiwiRail can fund projects that provide a commercial return but not necessarily those investments that may be good for society but for which customers will not pay.

Against the background of the recession, there is now less appetite from the public to pay more than from the traditional government sources. Tolling and time of use charges have

an increasing level of acceptance, and should be tapped provided they contribute to an overall improvement in mobility for both people and freight. Tolls appear acceptable, particularly to fund road improvements where an alternative route is available, and time of use charges to access express lanes at peak periods now have majority support, according to recent ShapeNZ polling. New Zealanders are 51.7% in favour versus 2.4% opposed to paying to use a new road or motorway provided the road is built faster than currently planned and an alternative free route is available.

With a PPP, the Government or council decides what should be built, and a private developer then finances the facility and charges users a fee (toll) until the concession ends. In Australia, these concessions normally operate for 25 – 30 years. Public acceptability increases when it is known that the facility will revert to public ownership once it has been paid for. Council or Government guaranteed long life bonds with 20-40 year terms could make these investments attractive for funds with long-term liabilities such as insurance companies or the ACC. This would also spread the cost of improvements over the generations that will benefit from them.

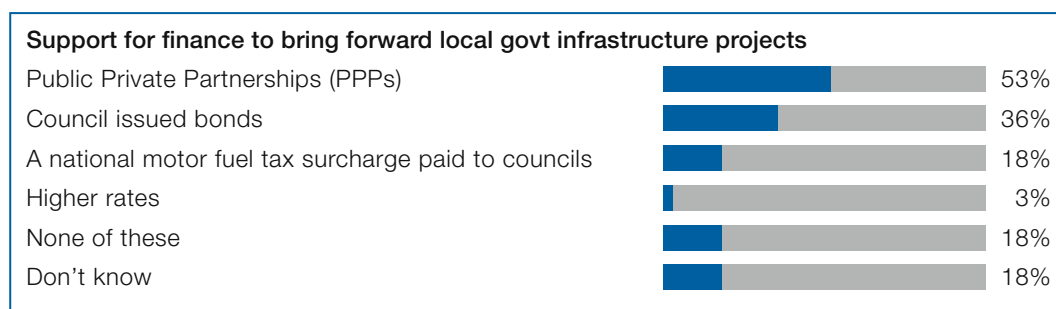
With modern technology, it is possible to measure for time of use of a particular road,

so electronic direct charging for road use is now possible. Other options could include a national motor fuel surcharge or an increase that would be distributed to regions in proportion to their sales of motor fuel. Councils could use the new and additional national funding for infrastructure development or to reduce rates according to local priorities. There is evidence that councils are not currently able to invest to upgrade local roads which are logically part of the network that needs upgrading because of their inability to fund such upgrades from current rates levels.

As new local roads are funded from rates, mode choices for freight complicate the viability of road

funding. If a new rail line is built, it is paid for by KiwiRail and its customers which may avoid the need for a new local road. If a new local road is built instead, it will be ratepayer funded. The inability to pay by one party may prevent the better option from going ahead. Local councils maintain they are underfunded for road damage from heavy truck movements on city streets, taking cargo to a port, as users do not pay the full costs. If the same goods move by train, the users and the Government, as owner of KiwiRail, pay for the rail track and its maintenance but not necessarily those who benefit locally from reduced congestion.

*Which of the following would you support to raise finance to bring forward local government infrastructure projects?*



Source ShapeNZ polling December 2010

### Potential Solutions:

**We need to fill the funding gap and move away from “pay as you go” if we are going to get the mobility we need.**

Agree that long-term bonds, concessions for PPPs funded by tolls and time of use charges should be used to fill the funding gap. A national motor fuel levy increase allocated to regions in proportion to their expenditure or motor fuel sales should also be considered to fund more freight and personal mobility improvements, or reduce local rates.

The tolled Northern Highway north of Auckland



*“There is a lack of reliable data and knowledge about the nature and extent of the regional freight issues. Good decision-making requires good data; more information is required to help policy development.”*

*(ARC Freight Strategy 2006)*

*“By providing a readily accessible form of data available to the different parties with interests in the sector, it assists in negotiations among these groups. It also provides the means by which the effects of policy and other changes can be monitored.”*

*(National Freight Demands Study 2008)*

## Problem:

**We are not using low cost real time freight movement information that could be available. Doing this will require public and private sector co-operation.**

The freight sector cannot access the real-time freight movement information that could be captured to drive efficiencies from innovation.

The sector is anecdote rich and data poor, given its relative importance to the economy. The technology and systems now exist to provide real time information on freight and vehicle movements at modest cost, but this is not happening to the level it could, or already occurs elsewhere in the world. Freight suppliers are highly fragmented, so relying on individuals to behave in the interests of New Zealand is unlikely to occur without government led co-ordination.

Better information flows represent one of the least costly ways to encourage innovation that could cut costs and promote supply chain efficiencies. Most shippers or service suppliers know a great deal about their own customers, or freight, but most of that is tightly held and so there is limited overall understanding of freight trends. For example, because there is a distinct difference between the composition of our exports compared with our imports, many containers are moved around New Zealand for re-export from another port, or leave empty. Similarly, with fore-knowledge, it is possible to mix loads to stay within weight restrictions. For example, Fletcher Building moves heavy wall panels in trucks and fills the space left with much lighter pink batts. This keeps the total load within the limits, but uses all the space.

If you know what is being shifted to where, it would be possible to sell the space in the empty containers and create new revenue streams or businesses, reducing the number of truck movements to shift the same load. With general take up of RFIDs, the contents of any shipment can be communicated each time a load moves past a receptor. Opportunities to fill back loads could be identified if such information were generally available across the sector.

The other benefit from having more freight movement information available sooner, is to enable public and private sector forecasters to plan better and more closely match facilities with the likely level of future freight demand. By matching the transfer of goods with the transfer of information, it is easier to achieve efficiencies in the movement between modes for freight forwarders, customs and biosecurity services.

### Potential Solutions:

Agree that a sector controlled and accessible electronic depository of real-time freight movement information be created with government backing to share information on all significant freight movements in New Zealand, to help spur innovation and productivity improvements and make forecasting easier. To work, the solution needs private sector incentives to share information while preserving commercial confidentiality. The benefits of better information sharing are unlikely to be equally valued by every participant, so Government is likely to need to be involved in bringing about a co-ordinated take up of the opportunity.

### Case Study: Container scanning system

Dubai Customs has launched a first-of-its-kind container scanning system at Jebel Ali Port, which is capable of radioactive scanning of mobile trucks and containers. It can scan 150 trucks per hour while moving at a speed of 8-15km (around one truck per 24 seconds).

*In fact, the most efficient supply chains worldwide leverage real-time information and ensure real collaboration between partners, whether this is within a closed-loop, across the industry, or indeed across the entire economy. Impartial industry wide Information and Communications Technology (ICT) solutions will enhance the industry’s ability to deliver predictable and reliable flows of goods and people.*

*(Australian Logistics Center (ALC) Press Release, 7 January 2010)*



## Problem:

**The current port ownership and management structure is stopping us from realising the potential supply chain efficiencies from servicing and accommodating bigger ships for container traffic.**

Most of our exports and imports either leave from a port or come in through one. Therefore, our ports' efficiency is one key driver for the efficiency of our export and import supply chains. If we do not change how our ports are owned and operated, we face the risk of not achieving the potential economies of scale that can reduce costs to keep competitive. We may also make "sunk investments" to create more deep water ports than we need in the short term if we do not co-ordinate our investment decisions well.

Following the Global Financial Crisis (GFC), there is an oversupply of shipping capacity and shipping companies are rationalising (merging companies, retiring older ships, and moving to larger ships to cut costs). As a consequence, it is likely that much larger ships, 5-7,000 TEU (Twenty Foot Container Equivalent Units) vessels will be introduced replacing smaller vessels that carry smaller numbers of containers 3-4,000 TEUs but with greater visit frequency.

These larger ships require deeper dredging of ports and increased capital spending at the ports and on the supporting infrastructure.

This is required because more containers need to arrive and leave in a short period of time for the bigger ships to be in port as little time as possible. In its economic evaluation of "big ship" scenarios, NZIER "conservatively" estimated the investment required for the deep port upgrades at two ports as \$1 billion. While this figure is contested within the industry, the investment needed is substantial.

A Shippers' Council report suggests that in the next five years, only one port in each of the North and South Islands will need a deep ship upgrade and a second port will not be needed for another five years in each island.

The Ports of Tauranga, Auckland, Lyttelton, and Otago are preparing plans for deep port upgrades. The best interests of New Zealand are not going to be served if all ports invest in upgrades immediately if there is only demand to support one big ships port upgrade in each island that can cover the cost of capital on the new capital invested over the next five years.

If more than one port in each island invests prematurely in big ships infrastructure, then the major beneficiary will be the shipping companies who will play off one big ship port against the other to cut rates. This will mean no port will recover the full cost of capital on its deep port investment and New Zealand will be poorer.

*Given that so much of New Zealand's prosperity is due to its comparative advantage in commodity exports, it should facilitate maritime trade to the greatest possible extent with the goal of reducing inbound and outbound shipping costs to meet the standards set by the OECD's most efficient members, whose costs are some 25% lower. Although the ports are corporatised, many have strong local authority shareholding, with mixed agendas. Ownership changes and consolidation around fewer port companies are likely to be integral to enhancing efficiency in this sector.*

*(OECD Economic Surveys New Zealand, Volume 2009/4, April 2009)*



### The Government's current view on ports:

The National Infrastructure Unit reviewed the ports as part of its work in developing the National Infrastructure Plan. It took the view that overall the evidence to hand suggests that the port sector is functioning reasonably well:

- There is no apparent congestion.
- The diversity of ports provides shipping companies/importers/exporters with range and choice.
- Competition between ports ensures sufficient market pressure for them to:
  - operate efficiently;
  - forecast future trends as best they can; and
  - rationalise and invest where appropriate.

At a systems level, distributed decision-making is likely to result in greater sector resilience because it increases the probability that at least some ports will get it right.

The NZIER Freight Futures Report published in September 2010 and commissioned by the Ministry of Transport, came to a similar conclusion strongly influenced by demand side factors, including the expected glut of shipping capacity following the GFC.

Consequently, the Government does not see a need to take a larger role in this sector at this time.

The NZIER report is not accepted by some in the sector.

### Potential Solutions:

If all these ports were in private ownership, the most likely outcome would be that the ports of Auckland and Tauranga would merge, as would the ports of Lyttelton and Otago, and one deep water port would be developed initially in each island. In the past, such mergers have been stopped by council owners putting parochial concerns ahead of what is best for New Zealand.

NZIER has suggested that one way to minimise parochial influences, but encourage the best commercial performance of ports, would be to split the management of port operations under contract from the public ownership of ports. This would enable councils to retain ownership of the ports, but contract out the management of them to an operating company. In Australia, the Brisbane port had three different stevedoring companies managing berths at the container terminal in 2009; the New South Wales Premier announced that a third container terminal operator would start at the Sydney port in 2012. Landlord ports with multiple stevedoring operators appear to be a model for increasing the pressure to improve productivity at ports, while ensuring publically owned regional monopolies are not simply replaced by private sector controlled ones.

### National Ports Strategy from the Australian Federal Government:

The four key outcomes of the Australian National Port Strategy are:

- Better long-term planning on the waterfront – operators will be required to publish 30 year master plans detailing the expected growth in trade, as well as the facilities that will be required to handle that growth;
- Better planning around ports – planning authorities will be asked to implement “buffer” strategies to prevent urban encroachment, not only on the ports within their jurisdictions, but also the road and rail corridors into and out of them;
- A streamlined environmental approval process – so as to prevent unnecessary delay in the delivery of new port facilities;
- Greater focus on port performance – with a system for measuring and comparing their performances.



## Problem:

**We have been reluctant to make polluters pay, and so we are stuck with regulatory controls that are often less effective at changing behaviour.**

In the past, we have tried to manage environmental externalities like noise, greenhouse gases, safety and congestion by restrictions, curfews and bans, often at high cost, but with low levels of compliance.

There are estimates that for New Zealand, given its geographical remoteness, the introduction of bigger ships could reduce the carbon footprint of shipping exports and imports by approximately 31%. To make these things happen we need user pays for polluters to provide an incentive to reduce pollution and emissions.

## Potential Solutions:

Changes in the technology available now make it possible to use prices more precisely to manage these issues.

GPS systems combined with sensors on vehicles make it possible to directly monitor vehicle noise. We can have insurance premiums that relate directly to risk factors such as the driver in the vehicle, the speed or location of the vehicle, or even the driving style of who is behind the wheel.

Some externalities are a greater nuisance at some time of the day rather than others, so time of use charging might make sense. We have begun to charge for putting carbon into the atmosphere by way of a levy on petrol and diesel. In future it might be feasible to measure a vehicle's actual emissions. If we were to charge for these directly, it could speed up adoption of better engines and driving styles and co-ordination to reduce emissions. It could also be fairer if vehicle insurance and ACC levies were more closely linked with actual risk factors.

If we were to go in this direction, the best managed truck fleets would benefit from reduced costs and the fleets' safety and environmental impact improvements would be encouraged. Directly charging for the use of roads at even a modest level, say \$1 a time, could provide more revenue for freight and personal mobility improvements. The current motor fuel levies, with the improving energy efficiency of vehicles is eroding the revenue base from this traditional source.

Requiring new vehicles joining the fleet to have higher emission standards is a cost effective way of improving air quality by reducing particulate pollution, as we import vehicles from countries with already higher, and improving, emissions standards. As we import a large number of older, used, vehicles, there may be a case for a surrender "bounty" scheme for the most polluting vehicles that still have 10 or more years' operating life, with the grant being able to be used to purchase a newer and less polluting, truck, van or vehicle.



## Problem:

**With expected freight volume growth, we need to get serious about congestion: a growing problem for shippers and motorists.**

Traffic congestion is an issue for motorists and freight shippers alike. As freight volumes and vehicle numbers increase it will become a bigger problem. Recent surveys (IBM Commuter Pain Survey 2010) highlight the increasing stress that congestion is causing. We cannot have efficient supply chains if we allow congestion to slow freight movement, increase costs and reduce delivery reliability. If we do not upgrade our roads and rail tracks and manage their use better, the result will be many more trucks on the road and deliveries having to move to earlier or later in the day. This will inevitably increase traffic noise in suburban streets early in the morning or in the evening.

Efficient ports and airports require 24/7 operations so curfews to avoid noise problems have major adverse impacts on port and airport productivity. As freight volumes increase, local residents will seek to restrict the hours of operation, and size of ports and airports.

While more roads and rail lines will help to reduce congestion, no country has been rich enough to avoid congestion at peak periods by just building more roads and/or rail lines.

### **The nature and cost of Auckland's congestion**

Auckland is already New Zealand's major centre of population, and expected growth in the Golden Triangle between Auckland, Hamilton and Tauranga is likely to increase the dominance of Auckland out to 2050. Freight moving north or south through Auckland is essentially required to cross an isthmus where extended periods of congestion already occur.

Applying current vehicle ownership rates (more than 780,000 cars) to Statistics New Zealand population projections for Auckland gives some indication of the scale of the growth problem confronting New Zealand's largest city. Depending on Auckland's growth rate, it will have to accommodate another 125,000 (slow rate) to 375,000 (high rate) cars by 2026. As Auckland can barely cope with the vehicles

it has now, it is obvious investment and tools to mitigate the effects of congestion on freight and personal movements are essential.

Even with the current road building programme and electronic monitoring of flows and signalling it is not expected that there will be a significant reduction in delays over the next 20 years.

While another north/south corridor may be required, we cannot build ourselves out of peak period congestion. Around one third of peak period road trips in Auckland are education related. Auckland weather, combined with frequency, reliability and access issues around public transport mean many people do not have an adequate public transport link between where they live and where they work or study. Some recent interventions, like Auckland commuter rail electrification, are a relatively expensive means of moving only a small proportion of Aucklanders to work or education. We need more effective interventions if freight, usually the poor relation of the motorist come election time, is going to get the right of way that most freight users are prepared to pay for.

Companies who undertake deliveries across the Auckland region have had to drop one delivery each day in recent years as congestion and delays have slowed traffic and reduced productivity. One survey of freight operators within Auckland revealed 81% reported experiencing delays due to congestion of over 50 minutes per day; 53% reported congestion related to delays of over 1.5 hours.

The estimated cost of Auckland congestion was \$775 million per annum (1997 figures) in terms of time wasted and business not done. The costs are incurred every year.

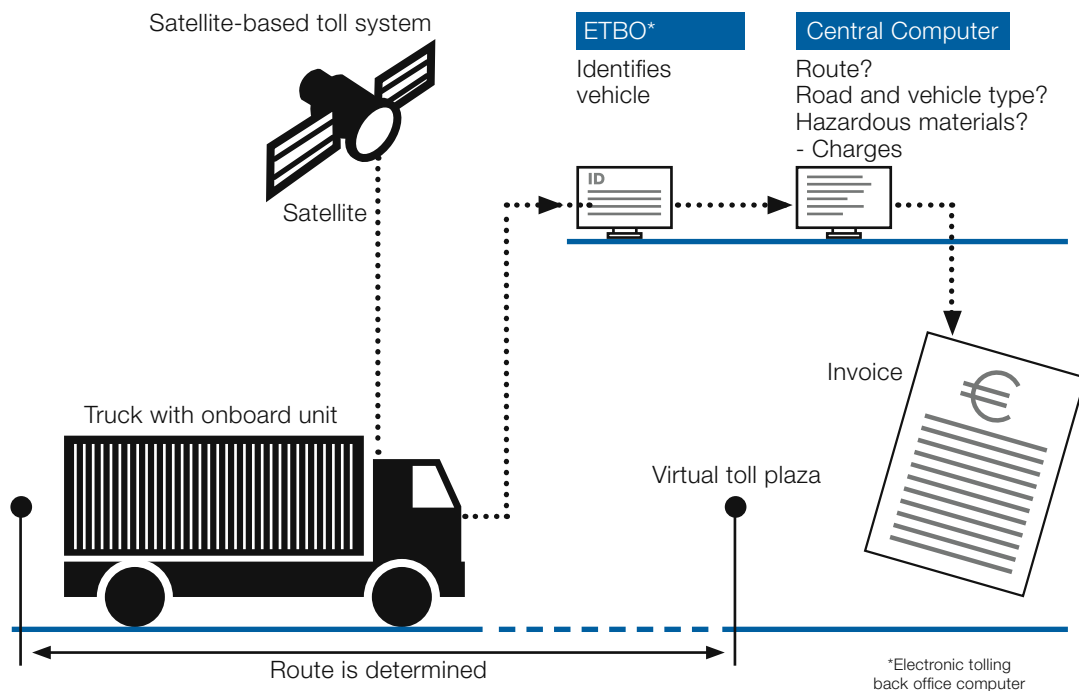
Beca showed, in a Ports of Auckland study, that assuming 1.8% traffic growth per annum, that committed and planned road improvements will result in an overall deterioration in access times to and from the Port of Auckland.

## Potential Solutions:

To better manage congestion, we need to achieve better use of the constrained routes at peak periods by:

- Having pay-to-use freight and high-occupancy vehicle express lanes on the busiest routes during times of congestion. Use is voluntary, but it ensures the freight or passengers that are most time sensitive and willing to pay to get access. This helps lower and spread the demand peaks;
- Allowing high occupancy passenger vehicles access to bus or express lanes. This will use those corridors much more effectively. The cheapest environmentally friendly passenger transport option is to put a second or third passenger into a car going to a similar destination;
- Using our constrained road corridors better, by allowing commuters to text for a minibus “jitney” to take them from their home to a bus or train station, and from a bus station and on to their place of work or study. The minibus might be a courier van outside of 7.30am – 9.00am and 4.30pm – 7.00pm so this additional capacity in the bus system requires no new capital (couriers tend to deliver early in the day going from the CBD to the periphery and collect at the end of the day. Picking up passengers for a backload may make the courier business more profitable);
- Spreading the peak by providing incentives for more schools to run “walking school buses” to reduce car journeys and increase children’s fitness, and by encouraging educational facilities to stagger their starting and finishing times;
- Providing faster broadband access that can also help lower and spread our travel peaks by making working from home a realistic option for many. Some 6% of New Zealanders currently work from home, and according to ShapeNZ polling (October 2008) some 24.6% thought that broadband gave them more flexibility to work at home;
- Considering the adoption of High Performance Freight Vehicles (HPFV) on dedicated freight routes linking key nodes and inter modals; and
- Using planning tools like designations, industrial zoning and freight hubs or “villages” to move freight related activities away from residential areas and increase the productivity of freight services.

## An affordable track-&-charge system



Source Siemens AG

# SUMMARY

## Next Steps

Freight sector companies and organisations which took part in this project wish to meet with relevant Ministers to form a shared view on how to manage future freight volumes, increase sector productivity and lift living standards.

The Business Council will be inviting these decision makers to meet to discuss the agenda for action set out in this report.

The agenda includes taking action on:

- Persuading New Zealanders that efficient supply chains for freight impact on their prosperity and quality of life
- Putting aside key routes for future freight use
- Filling the gap between what transport infrastructure is worthwhile building and what we are currently able to fund
- Managing congestion, including charging those who opt to use freight and high occupancy vehicle express lanes at certain times
- Using information now available to better manage freight flows
- Using prices more often to manage environmental externalities such as noise, carbon, or particulates where they are more cost effective than direct controls
- Changing port ownership and management to ensure the best return on upgrading ports to cater for “big ships”
- Consistently applying one agreed method of evaluating investments in personal and freight mobility.

The Business Council will host a meeting on this about mid-year.

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## Project Participants:

Aecom Limited  
 Air New Zealand Limited  
 Auckland Regional Holdings Limited  
 Aurecon Group  
 Automobile Association  
 Beca Group Limited  
 Cargo Co-Ordinators Shipping Agency Limited  
 Carter Holt Harvey  
 Christchurch City Holdings Limited  
 Downer EDI  
 Express Couriers Limited  
 Fonterra Co-Operative Group Limited  
 Fulton Hogan Limited  
 Hamburg Sud  
 IBM New Zealand Limited  
 KiwiRail Limited  
 Leighton Contractors  
 Linfox  
 Living Earth Limited  
 Lyttelton Port of Christchurch  
 Maersk NZ Limited  
 Meat Industry Association  
 Messenger Services Limited

New Zealand Post  
 New Zealand Shippers Council Inc  
 New Zealand Trade & Enterprise  
 NZ Council for Infrastructure Development  
 Port of Tauranga Limited  
 Ports of Auckland Limited  
 Progressive Enterprises Limited  
 Reef Shipping Limited  
 Road Transport Forum NZ  
 Sanford Limited  
 Scarlatti NZ Limited  
 Siemens (NZ) Limited  
 Stevenson Group Limited  
 Swire Shipping Limited  
 Tapper Transport Limited  
 The Car Distribution Group  
 The Warehouse Group Limited  
 Toll Networks  
 Toyota New Zealand Limited  
 Urgent Couriers Limited  
 URS New Zealand Limited  
 Zespri

This report represents the views of the New Zealand Business Council for Sustainable Development and not necessarily the views of any individual member or research project participant.

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## The following businesses are members of the Business Council.

3R Group Limited	Les Mills Group
Andrew.Stewart Limited	Living Earth Limited
Aurecon New Zealand Limited	Meridian Energy Limited
Bank of New Zealand	Messenger Services Limited
Beca Group Limited	Mighty River Power Limited
Blue Star Group	MWH New Zealand Limited
BMW Group New Zealand	New Zealand Post
BRANZ Limited	Ports of Auckland Limited
Christchurch City Holdings Limited	Progressive Enterprises Limited
Comvita Limited	Revolution ID
Cowper Campbell	Ricoh NZ Limited
Cranleigh Merchant Bankers	Sanford Limited
Deloitte	Scion Research
Ecostore	Siemens (NZ) Limited
Energy & Technical Services Limited	Sinclair Knight Merz
Fonterra Co-Operative Group Limited	Sovereign Assurance Company Limited
GHD Limited	Spicers Paper
GSB Supply Corp Limited	The Warehouse Group Limited
Hobsonville Land Company Limited	Tourism Auckland
HSBC	Toyota New Zealand Limited
Hubbard Foods Limited	Transpacific Industries (NZ) Limited
IBM New Zealand Limited	Urgent Couriers Limited
Industrial Research Limited	URS New Zealand Limited
Interface NZ Limited	Vector Limited
James & Wells Intellectual Property	Waikato Management School
Landcare Research	Watercare Services Limited
Leighton Contractors	Wright Communications Limited

The Business Council provides business leadership as a catalyst for change toward sustainable development, and to promote eco-efficiency, innovation and responsible entrepreneurship.

We advocate on issues connected with sustainable development. We participate in policy development in order to create a framework that allows business to contribute effectively to sustainable development.



New Zealand Business Council  
for Sustainable Development

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