



Submissions

On the

Auckland Road Pricing Evaluation Study

April 2006

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1. Key Messages

- 1.1. The introduction of road pricing has potential as a valuable tool to help mitigate increasing traffic congestion in Auckland.
 - 1.2. Notwithstanding the potential benefits of road pricing, Auckland's transport infrastructure is inadequate to meet the regions social and economic needs.
 - 1.3. In this context, introduction of road pricing is premature at this time.
 - 1.4. Research shows that NZ continues to under invest in its transport network and this is inhibiting social and economic development.
 - 1.5. To be successful, introduction of road pricing must be integrated with the necessary step change in investment in roading and public transport infrastructure.
 - 1.6. Such increased investment can be made possible by means of debt funding (both public and private debt) serviced by a combination of existing revenue streams and tolls.
 - 1.7. An incremental shift to road pricing may engender greater public support.
 - 1.8. The next phase of investigation of road pricing needs to determine an optimal road pricing regime for integration with the transport infrastructure development programme, and determination of the appropriate governance, timing, and implementation programme.
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2. Introduction

- 2.1. The New Zealand Council for Infrastructure Development is a non profit organisation.
- 2.2. Members comprise a diverse range of private and public organisations that seek world class infrastructure developed and provided in New Zealand to help all New Zealanders achieve the standard of living to which we aspire.¹
- 2.3. NZCID's vision is to promote the provision of world class infrastructure by both the public and private sectors for the benefit of New Zealanders.

3. NZCID considers road pricing will be a useful tool to encourage efficient use of the transport system but does not replace the need for a step change in the infrastructure development programme

- 3.1. NZCID supports road pricing as a more economically sound way of optimising efficiency of use of the road network than do existing charging mechanisms.
- 3.2. The theoretical basis for road pricing is well established.
- 3.3. The Auckland Road Pricing Evaluation Study (ARPES) clearly indicates that the introduction of road pricing has the potential to be a valuable tool to help mitigate increasing traffic congestion in Auckland.
- 3.4. Positive outcomes from the various schemes considered include a transfer from private motor vehicle trips to alternative transport modes and more efficient utilisation of the roading network through retimed trips.
- 3.5. The results of traffic modelling suggest that introduction of either a cordon or area scheme would reduce the projected increase in the level of congestion in 2016 by 6% over the base case scenario where

¹ Note: This submission represents the views of NZCID as a collective whole, and may not necessarily represent the views of individual member organisations.

congestion is expected to worsen by 20%.

- 3.6. Notwithstanding the reduction in congestion growth, the overall level of congestion in the best case scenarios is expected to be **14% worse than it is today with consequential adverse social and economic impacts.**
- 3.7. An efficient transport system requires optimisation of the balance between the supply of infrastructure on the one hand and appropriate pricing of its use on the other.
- 3.8. Where the benefits of increased supply exceed the cost, it is logical to increase capacity. But where these benefits can be achieved through more efficient use of existing infrastructural assets by means of charging for road use, this represents the most economic solution.
- 3.9. The results of the ARPES study demonstrate that although road pricing can be expected to have a positive affect on managing congestion, this has not been compared against what benefits might be possible from increasing transport capacity beyond that assumed within the current regional land transport strategy.
- 3.10. The scheme assumptions include development of the public passenger transport system largely in accordance with the Auckland Regional Land Transport Strategy (ARLTS) as well as completion of the Western Ring Route, among a number of other strategic projects included in Transit NZ's 10 year forecast.
- 3.11. However, analysis undertaken in the preparation of the ARLTS demonstrated that implementation of the High travel demand management option, the high public transport option and the high roading option (the so called "HHH" option) would require an additional \$2.8 billion in funding over and above that which was projected to be available, but **"would generally result in better performance than any of the strategic options, particularly economic development"**² (including the preferred Option 5 that formed the basis of the final ARLTS).
- 3.12. The key reason why the HHH option was not selected as the region's preferred option was the identified constraint on funding.
- 3.13. This result demonstrates that the current ARLTS strategy is suboptimal.

² Auckland Regional Land Transport Strategy p 61. The only exception was for environmental sustainability where the HHH option involved higher fuel use and emissions consistent with the increased growth.

- 3.14. NZCID considers an approach that integrates road pricing into an expanded transport infrastructure development programme is more likely to represent the optimal solution, providing for improved economic growth and better social amenity.
- 3.15. NZCID therefore recommends that further work is required to evaluate the optimal balance between supply of infrastructure on the one hand and the effective integration and timing of road pricing on the other.

4. Current transport infrastructure is inadequate to meet NZ's social and economic needs.

- 4.1. The costs of congestion to the Auckland and New Zealand economy have been well documented.
- 4.2. The existing roading network is currently carrying traffic volumes that are well beyond its design capacity.
- 4.3. Projected growth in vehicle kilometres travelled, particularly commercial vehicle trips, within an already constrained network, will place immense pressure a road system that is already failing to meet the demands being placed upon it.
- 4.4. Similarly the public passenger transport network has insufficient frequency and capacity to provide a viable alternative for the majority of road users.
- 4.5. Worsening congestion, increasing CO² emissions, rising costs, loss in productivity, increased pressures on work life balance and slowing rates of road safety improvement are symptoms of inadequate capacity of the transport system.
- 4.6. While road pricing can be expected to improve mode share for alternatives to private motor cars, the continued deterioration in congestion that is projected under all options modelled by ARPES demonstrates that introduction of road pricing does not change the fundamental need for more rapid development of transport infrastructure, both roading and public transport.
- 4.7. Introduction of road pricing in the context of the current roading and passenger transport network which is constrained as it is by lack of viable alternatives will have severe social, environmental, and

economic impacts more akin to “monopoly pricing” rather than optimal congestion pricing.

5. Notwithstanding recent increases in Government funding, NZ continues to under invest in its transport network and this is inhibiting social and economic development

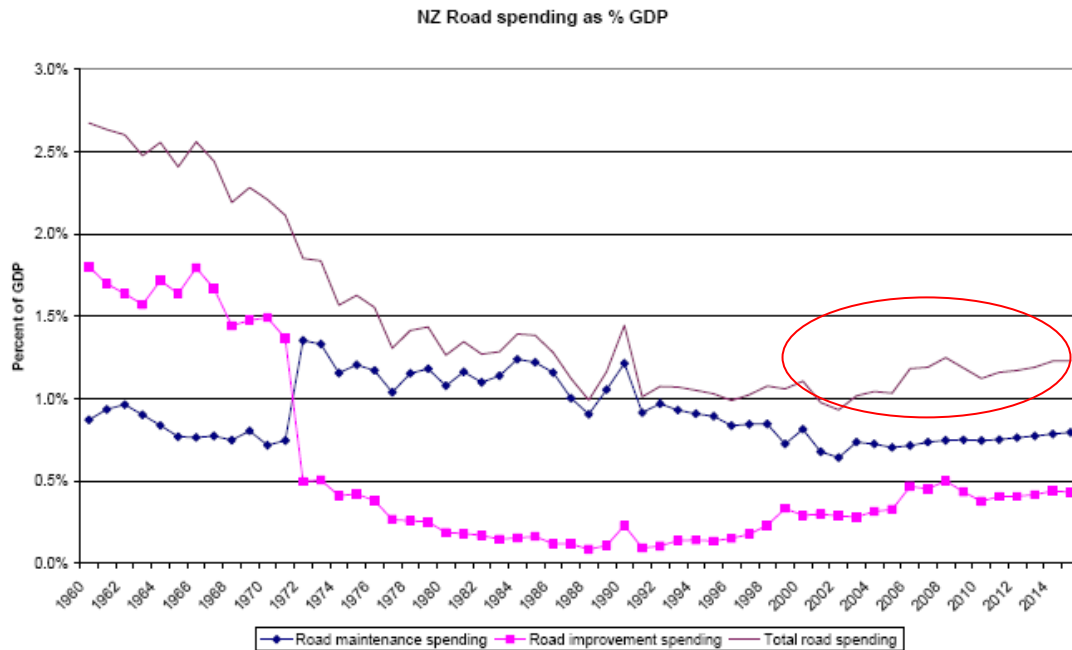
- 5.1. The ARPES road pricing study starts from the premise that opportunities for infrastructure development are constrained.
- 5.2. The options considered are therefore designed to reduce travel demand and “manage” a shift from car transportation to alternative modes.³
- 5.3. However, research undertaken by Allen Consulting Group and Infometrics in 2004⁴ concluded that the current level and pattern of investment in New Zealand’s land transport infrastructure is sub optimal and that there are substantial economic gains available to New Zealand from lifting investment in land transport infrastructure.
- 5.4. The analysis showed that New Zealand has been behind both Australia and the United States in relation to investing in its transport infrastructure. Its level of investment was also substantially lower than the OECD average of around 1.3 per cent per annum.
- 5.5. While such comparisons are indicative only (given that New Zealand and other OECD countries have different geography, different densities, distribution of population and economic activity) various OECD countries including Australia have exhibited significantly more progress in developing their transport networks in recent times than has New Zealand.
- 5.6. Current and forecast allocations provide for an increase in spending as a percentage of GDP as depicted below, but this share is still well below the levels prevailing in the 1960s. Road expenditure in New Zealand is forecast in the range of 1.1-1.3% of GDP through to 2015,

³ That is, under each of the ARPES road pricing scenarios the primary driver of the level of the toll is to either reduce demand or change travel behaviour, not as a means of raising revenue.

⁴ The Benefits of Investing in New Zealand's Road Transport Network, The Allen Consulting Group August 2004, p vii

about the same level as in Australia in the late 1990s, but still below the OECD average.

Figure 2 Road spending as percentage of GDP



Source: NZIER, Statistics New Zealand, Land Transport New Zealand

5.7. Given that New Zealand is now seeking to redress its earlier underinvestment in transport infrastructure, and given the nature of its geography and dispersed population base, one would have expected the level of commitment in the future would in fact be higher than the OECD average.

5.8. These figures demonstrate that notwithstanding the recent increases in transport funding, New Zealand continues to under invest in its transport infrastructure development.

6. Investment in core roading and public transport infrastructure will yield stronger economic growth than the modelled road pricing options.

6.1. The analysis shows that road pricing, as modelled, will have limited if not a slight negative impact on economic development, with the positive impacts of reduced traffic congestion largely offset by the fiscal

impacts of increased charges.

6.2. On the other hand, the modelling done for the Auckland Regional Land Transport Strategy demonstrated that an increased level of investment in travel demand management, public transport and roading (i.e the HHH scenario described above) had a much more positive impact on economic development than other options.

6.3. This is not unusual. The link between transport infrastructure investment and economic growth has been demonstrated by numerous studies.

6.4. In December 2002 the Australian National Institute of Economic and Industry Research completed a study of 48 transport infrastructure projects with a combined cost of more than \$A20 billion and concluded:

“The main finding is unequivocal: there is a direct relationship between transport infrastructure investment and Australia’s economic growth.

The need to export and the emergence of the knowledge economy has, in fact, made investment in transport infrastructure more important as a driver of growth. This is because Australian institutions and businesses need the connectivity that comes with efficient transport hubs and because globalisation has increased the importance of:

- efficient goods delivery;
- labour market reach; and
- social invention and the knowledge economy.”⁵

6.5. In 2004 the Allen Consulting Group Infometrics study measured the economic return from completion of a package of four strategic roading projects including the Auckland Western Ring Route, the Tauranga Strategic Roding Network, the Wellington Regional Transport Strategy and 402 Transit NZ passing lane packages and concluded:

“The findings of the study suggest that if all four of the proposed land transport infrastructure projects were undertaken, there would be a total benefit, net of costs, to the New Zealand economy in excess of \$1.5 billion dollars annually in 2012.

This total net benefit is made up of the following individual benefits:

- a net increase in GDP of \$1.0 billion in 2012. This is equivalent to a net increase in per capita GDP of around \$243. In other words, if the proposed set of land transport projects were to be undertaken as modeled, each person in New Zealand would, on average, be better off by \$243;

⁵ “Transport Infrastructure: a perspective and prospective analysis of its role in Australia’s economic growth” National Institute of Economic and Industry Research trading as National Economics December 2002, p i

- a benefit of \$65.9 million attributable to the value of lives saved and permanent disability avoided; and
- a benefit of \$511 million from travel time savings related to non-work activities.”⁶

- 6.6. In addition, the study found that central government would benefit from an increased tax take in excess of the cost of the projects resulting from the economic growth achieved, providing the opportunity for either a reduction in taxation or diversion of the increased tax revenue to additional government expenditure.
- 6.7. The strategic and economic benefits from investment in transport infrastructure were also evidenced in March 2004 when Business Economic Research Limited released an economic assessment of the value of completing Auckland’s Eastern Transport Proposal, an integrated package of roading and public transport services.⁷
- 6.8. It concluded that the package would improve GDP by between \$1 billion and \$1.5 billion dollars on the grounds that urban intensification enabled by the corridor would lead to increased productivity.
- 6.9. The BERL study calculated the resultant productivity gain would yield more GDP per unit of transport thus achieving a partial decoupling of economic and transport growth.
- 6.10. In the light of these findings it is logical to conclude that a combined approach of development of the transport infrastructure network integrated with optimal road pricing would produce the best overall social and economic result for New Zealand.

7. Funding Infrastructure Development

- 7.1. NZCID has compared projected Land Transport NZ funding against the expected cost of completing the necessary projects in a more timely way and calculated that an additional \$6 - 8 billion would be required nationally or an average of \$300 - \$400 million per annum over the next 20 years.
- 7.2. By way of illustration, this represents approximately half the amount of excise tax that is currently being retained in the Crown account instead

⁶ The Benefits of Investing in New Zealand’s Road Transport Network, The Allen Consulting Group August 2004, p vii

⁷ Investing for Growth: Economic and Strategic Importance of the Eastern Transport Corridor. BERL March 2004
www.berl.co.nz

of being invested in the Land Transport Fund, or the equivalent of 10 to 12 cents per litre of petrol.

- 7.3. NZCID considers that it would be possible to bridge the funding gap through debt serviced by a combination of revenues from tolls on new roads, fuel excise, road user charges, and other existing revenue streams as is commonplace in most OECD nations.
- 7.4. Alternatively (or additionally) a low cost revenue generating cordon tolling system like that used in the Norwegian cities of Oslo, Bergen and Trondheim, aimed primarily at raising revenue for transport investment, would also provide the ability to bridge the infrastructure funding gap. Such an approach has the added benefit of introducing road users to the concept of paying for road use.

8. Increase debt funding

- 8.1. On current plans use of debt funding is currently limited within the forecast period to the AlpurB2 and Avondale projects.
- 8.2. Internationally, many countries have successfully achieved their infrastructure development goals by greater use of debt funding.
- 8.3. NZCID considers that increased commitment to debt financing, tolls on new and/or existing roads and forms of private sector involvement can and should be considered to cover shortfalls and avoid continual deferral of projects as has been the norm over the last 30 years.
- 8.4. Potential candidates for such initiatives in addition to the existing Alpur B2 project within the Auckland region might include:
 1. SH20 Avondale extension possibly also including Mt Roskill, and SH16/18 Hobsonville Westgate to Upper Harbour Bridge to advance the construction of the Western Ring Route as a complete project. (direct toll)
 2. Eastern Corridor – either the AMETI project or a more substantial strategic connection.
 3. Four laning state highway corridors with more than 15,000 vehicles per day (using shadow tolling or availability of service payments).
- 8.5. NZCID considers, in the immediate future, much more emphasis needs to be placed on redressing the inadequate provision of transport infrastructure within the Auckland region, that the apparent funding gap

can be bridged, primarily by use of debt funding, that there are opportunities to substantially improve procurement and delivery of additional infrastructure, and that the social and economic benefits derived from the investment in that infrastructure will substantially exceed the costs.

9. The transition to road pricing should be led, not imposed.

- 9.1. As noted at the outset of this submission, NZCID considers charging for road use by location and time of day is the most efficient means available at our disposal to maximise the efficiency of the transport network.
- 9.2. The key point in question is not whether road pricing should be introduced but rather, when and how it should be introduced.
- 9.3. Is it better to force the change in the face of strong public opposition, or lead change through demonstration of the benefits of the new approach?
- 9.4. International research consistently shows that public acceptance, or at least public acquiescence, is key to the successful implementation of road pricing schemes. Similarly, strong political leadership is vital.
- 9.5. The ARPES report shows that public acceptance in New Zealand is potentially comparable with that which existed in London prior to the introduction of the congestion charge there.
- 9.6. However, in contrast to Auckland, London has a significant public transport network and already had 85% of commuters using it. The congestion problem had developed to the point where things were so bad that anything that offered hope as a solution was considered potentially worthwhile.
- 9.7. While congestion is a serious problem in Auckland, neither of these circumstances exist to anywhere near the same degree.
- 9.8. It is likely that imposition of road pricing in the Auckland context where there is a constrained roading and passenger transport network would receive significant adverse public reaction (and this has already been evidenced by recent media coverage).⁸

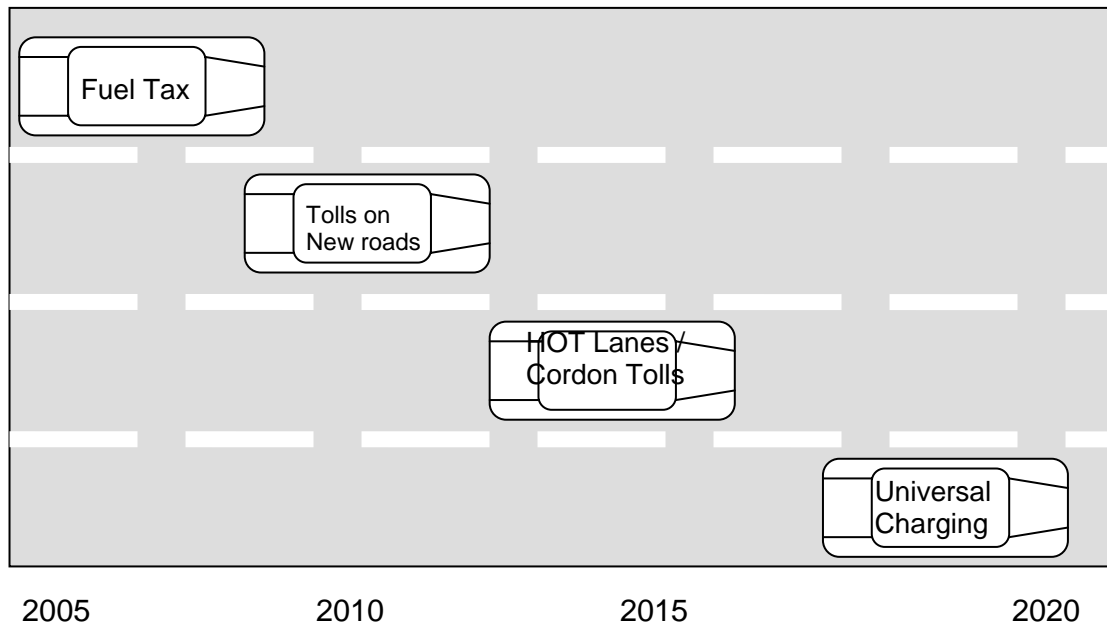
⁸ See letters to the Editor NZ Herald 23 – 28th April 2006

- 9.9. As the study demonstrates the potential social, environmental and economic disadvantages of introducing road pricing schemes, as modelled, make the introduction of road pricing politically vulnerable to attack.
- 9.10. This is particularly so given ongoing concerns over the fairness of the current appropriation of fuel taxes into the Crown account and the perceived failure to invest in the roading and passenger transport system.
- 9.11. These circumstances indicate that the necessary prerequisites to the successful introduction of road pricing, i.e. latent public acceptance and strong and committed political leadership, do not yet exist in the Auckland context.

10. An incremental shift to road pricing may engender greater public support.

- 10.1. The modelling undertaken for the ARPES study presupposes enhanced public passenger transport services and completion of the Western Ring Route (both of which are planned for incremental development over the next 10 years).
- 10.2. This suggests that road pricing, as modelled under ARPES, cannot therefore be implemented before 2015.
- 10.3. As noted above, it would be politically risky to charge road users for a congested substandard transport network and for this reason road pricing is unlikely to receive public support (especially when there are no suitable alternative transport modes available to road users, and while government continues to use fuel tax excise for non transport related purposes).
- 10.4. On the other hand, an incremental shift to road pricing, as depicted in Figs 1&2 below, may be seen to be a fairer approach and provide the vehicle to increase funding for development and expansion of the public transport system.

Fig 1 Evolution in Transport Funding

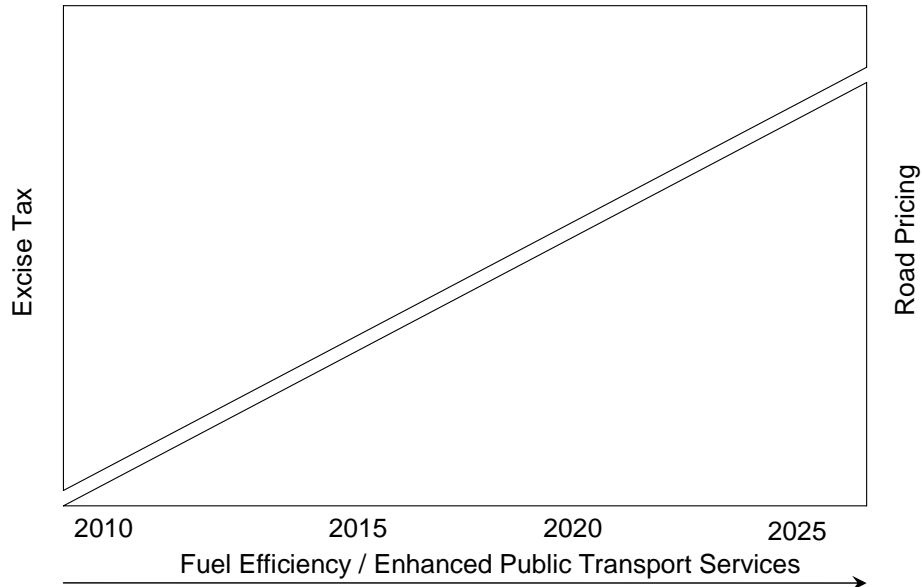


10.5. Incremental introduction of road pricing might follow the path set out below:

- 10.5.1. Introduce toll on new roads consistent with the current LTMA requirements where there are viable free alternatives eg Alport B2, Western Ring Route, Transmission Gully, Maramarua Expressway, Waikato Expressway, the Eastern Transport Corridor, Auckland Harbour Tunnel, (NB on current plans a number of these roads will not be funded within 10 - 20 years unless advanced through tolling)
- 10.5.2. Where congestion is an issue, use variable pricing at peak to introduce congestion pricing concepts (marketed as “value” pricing) – roads might continue to be provided free where congestion is not a problem.
- 10.5.3. Use existing revenue streams (excise, rates, parking and development levies etc) to increase the level of investment in alternative transport modes.
- 10.5.4. When the new routes in urban areas become congested and alternative transport modes sufficiently enhanced, expand the pricing model to provide HOT lanes on key existing routes like the Harbour Bridge, Southern Motorway and promote HOV use, and public passenger transport and alternative transport modes.
- 10.5.5. Having optimised the transport infrastructure network and initiated road users to paying for road use, move to cordon, area or global tolling as fuel efficiency bites into government

fuel tax take and as technology and political acceptance provides.

Fig 2: Evolution to Road Pricing



- 10.6. In the immediate term, development of the transport network can be either publicly or privately debt funded, with the debt serviced by a combination of tolls on new roads and existing revenues from excise tax and rates etc. Public private partnerships can be used to assist this process, as has been extensively used in Australia.
- 10.7. Under this approach tolls would be used to ensure improved mobility i.e. the net effect of the imposition of tolls should be improved mobility overall through more effective utilisation of the network,
- 10.8. The strategy would represent a partnership approach between road users who agree to contribute more by way of tolls and Government contributing more by way of increased investment.

11. Development of Road Pricing Policy and its implementation needs to be considered as an integrated package with the infrastructure development programme

11.1. NZCID notes that the briefing paper to Infrastructure Ministers dated 3 January 2006 recommended that proposals for legislative change be developed subject to information being provided on a range of issues including:

- the appropriate governance structure for any scheme,
- the wider economic impacts of road charging,
- the views of the Auckland region and other regions,
- and the criteria that should be met as part of any application for a scheme

NZCID supports these recommendations and considers further investigation of these issues is required.

11.2. As set out above, NZCID considers the successful introduction of road pricing in the New Zealand context is dependent on the development of the relevant alternative transport modes and completion of the strategic roading network to cater for the needs of commercial traffic and freight.

11.3. On current plans, that transport network development plan is neither fully developed, nor funded.

11.4. There seems little point in developing legislative proposals for the introduction of road pricing in isolation from the development of the appropriate infrastructure development programme that supports it.

11.5. Public and political support for the introduction of road pricing will be much more forthcoming if it is seen as part of a comprehensive package of programmes designed to meet future mobility needs which includes both increased supply of transport infrastructure and managing demand more effectively by means of charging for road use.

11.6. Progressed in isolation from the infrastructural development programme, road pricing will be seen as a punitive tax and runs a substantial risk of alienating public support.

11.7. For these reasons NZCID considers an optimal road pricing strategy needs to be developed in the context of a 20 year infrastructural

development plan, which clearly sets out the programme and responsibilities along with accountabilities for implementation.

12. Conclusions

- 12.1. The introduction of road pricing has potential as a valuable tool to help mitigate increasing traffic congestion in Auckland.
 - 12.2. Notwithstanding the potential benefits of road pricing, Auckland's transport infrastructure is inadequate to meet the regions social and economic needs.
 - 12.3. In this context, introduction of road pricing is premature at this time.
 - 12.4. Research shows that NZ continues to under invest in its transport network and this is inhibiting social and economic development.
 - 12.5. To be successful, introduction of road pricing must be integrated with the necessary step change in investment in roading and public transport infrastructure.
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