

SUBMISSION

THE DRAFT GOVERNMENT

POLICY STATEMENT ON LAND

TRANSPORT 2024-34

ABOUT THE RTSA

The Railway Technical Society of Australasia (RTSA) is a Trans-Tasman body with over 1500 members in the Australian and New Zealand rail sectors and is both a technical society of Engineers Australia and a technical group of Engineering New Zealand. The objectives of the RTSA include promoting technical and management excellence in the railway industry; developing and disseminating railway technology and management knowledge; supporting the continuing professional development of members and promoting close relationships among participants in the railway industry.

In New Zealand the RTSA has over 200 members, predominantly professional engineers working for KiwiRail, Consultancies, Government and Contractors and is the only organisation specifically focused on knowledge sharing and professional development in the rail industry.

INTRODUCTION

Thank you for the opportunity to provide comment on the draft Government's Policy Statement (GPS-LT) on Land Transport (2024-34).

This submission is made by the New Zealand Chapter of the RTSA, but we have also collaborated with both Engineering New Zealand and our fellow technical group, Transportation Group New Zealand.

Our submission is structured in three parts:

- (i) Overall Comments on the draft GPS-LT
- (ii) Key points of our submission
- (iii) Rail's current and potential contributions to better outcomes for New Zealand.

OVERALL COMMENTS ON THE DRAFT GPS-LT

The RTSA is pleased to note the draft GPS-LT acknowledges the role of the National Land Transport Fund's role in maintaining and operating the land transport system – including maintaining the rail network, together with the Government's intention to amend the Land Transport Management Act to require future GPS-LTs to adopt a longer planning horizon - particularly important for Rail. It is also good to note the

commitment to funding the Lower North Island Rail Integrated Mobility Programme’s new regional passenger trains and associated rail network asset renewals and upgrades.

The draft GPS-LT responds to today’s challenges (motorway development and maintenance) but does not in our view, appropriately address future or wider challenges faced by New Zealand – it is disappointing that there is little or no acknowledgement on the energy usage and environmental impacts of transport or any specific outcomes relating to these issues.

Although the RTSA supports the outcomes sought by the Government for economic growth and prosperity, maintenance and resilience, safety, and value for money, we are concerned about the lack of recognition that land transport is an integrated multi-modal system as well as the singular bias towards road transport solutions, in particular private vehicles, and trucks, as the primary means of achieving the Government’s transport outcomes. This comes at the expense of investment in other modes including public transport, walking, cycling and other active modes, and rail.

Furthermore, there is little or no evidence provided to justify the proposed investment priorities and from a rail perspective, no acknowledgement or challenge to the work commissioned by the Ministry of Transport in recent years (referenced later) to estimate the economic, safety and environmental benefits that rail provides to New Zealand. That the draft GPS-LT is not documenting why it is not considering such past evidential analysis to create future oriented policy is a concern for transparent and quality decision making.

The probable consequences of the direction signalled by the draft GPS -LT for the rail network and train services are significant, and if not amended, threaten the continued existence of a comprehensive national rail system in New Zealand. The levels of funding for rail (as well as for Public Transport Infrastructure which funds urban rail infrastructure) proposed in the draft GPS-LT will not only significantly constrain the work that is underway to renew the railway’s assets, but is likely to mean that large sections of the rail network will be unable to be sustained - in time leading to service decline, loss of competitiveness and eventual closure. New Zealand cannot afford the risk of losing a valuable transport asset with all its benefits through short-term decisions and funding allocations.

SUBMISSION KEY POINTS

Transport is an integrated system and should be planned and funded accordingly

Transport is a complex, integrated system covering multiple modes with each mode best suited for specific parts of end-to-end journeys for people and freight. Hence policy, funding, operation, and investment planning also need holistic consideration and should not be done in isolation as decisions made regarding one mode can have implications including trade-offs, for other modes. Instead, decision making should enable all modes to be sustainably funded so that they can be used to their best effect.

Although the draft GPS-LT states that “All entities involved in providing for the land transport system need to work together to improve the system’s performance”, to achieve better value for money outcomes, the document ignores or does not understand the interactions between modes and expects that each mode should operate and be funded in isolation. Further, the impact of greater public investment in Roads of National Significance in improving the competitiveness of the Road Transport Industry at the potential expense of other modes such as rail, while rail is meant to largely fend for itself, demonstrates an inherent bias in the draft GPS-LT.

The RTSA considers that the Government should take a more holistic and evidence-based approach to determining the best levers to pull to achieve the outcomes it wants for transport, rather than excessively favouring road transport at the expense of the other land transport modes, if it truly seeks to achieve value for money for New Zealanders.

Rail provides benefits to New Zealand and other transport modes

Rail is a highly efficient and safe mode for transport of both freight and people without delays from road congestion and complementing other modes including road and active transport for first/last mile journey legs. It is unsurpassed in connecting to ports for import and export of cargo. The 2020 update of EY's "Value of Rail in New Zealand"¹ report for the Ministry of Transport estimated the value of benefits provided by rail to New Zealand in 2019 at between \$1.7B and \$2.1B, comprised of:

- Time (and congestion) savings (\$939M-\$1054M)
- Reduced air pollution (\$170M-\$474M)
- Reduced fuel and maintenance costs (\$315M-\$329M)
- Reduced greenhouse gas emissions (\$178M-\$182M)
- Safety (\$94M-\$98M)

Given these benefits, the draft GPS-LT notes that "It is unfair to ask people using the roads to fund rail infrastructure" is a non-evidence-based statement and does not reflect the analysis, previously provided by the noted Ministry of Transport work, of the value that rail provides to road users and New Zealand as a whole. Further the bias in the document towards road transport is evident through:

- Not providing an opportunity to review and readjust RUC thresholds to the point where heavy trucks (High Performance Motor Vehicles or HPMV) pay a larger share of increased road construction and maintenance costs more in proportion to the benefits they will receive from roading investment and the damage they cause to existing roads.
- Not recognising the opportunity to invest in rail and achieve greater benefits (or reduced costs) than similar investments in road (reduced congestion, reduced emissions / improved efficiency, safety, reduced human resource requirements).

Rail can contribute more to New Zealand but needs sustainable funding

New Zealand's rail network is a substantial backbone that can support changing economic activities and transport flows serving New Zealand's major centres, ports, and industries. Sustainable funding is an essential requirement to maintain this capability. Most of the rail network has significant unused capacity that could take more trains but has suffered from many decades of inadequate and stop-start funding leading to declining service quality, asset deterioration and reduced network resilience. The funding for rail through the first Rail Network Improvement Programme (RNIP) from 2021-24, as well as other investment in the Auckland and Wellington urban areas, was a key initial step to addressing the condition and capability of the rail system to enable it to better contribute to New Zealand's transport task, but it is critical that sustainable funding levels continue to arrest further loss of value/decline. Rail also has the

¹ <https://www.transport.govt.nz/assets/Uploads/Report/EY-Report-Externality-value-of-rail-2020.pdf>

opportunity for increased efficiency on the likes of the Auckland-Tauranga route through increased axle loads but needs a sustained plan to achieve this potential.

The statement in the draft GPS-LT that rail freight volumes have continued to decline despite sustained investment over the past six years is one that lacks the context of factors such as the Kaikoura Earthquake, the COVID 2019 pandemic and recent softening of the New Zealand economy. It also does not seek to acknowledge that much of the current investments in rail are for projects not yet complete or commissioned. It is therefore similar to questioning the lack of benefits of a roading project that is not yet opened for use. More concerning is that it overlooks the intent of the first RNIP² which was to significantly increase the rate of infrastructure asset renewal and maintenance to start to arrest the deterioration of the network and to position the rail system for growth in subsequent RNIPS periods.

KiwiRail and its suppliers have significantly increased the capability and capacity of the NZ rail industry through RNIP and the concurrent rail investments in Auckland and Wellington. Many engineers and other personnel have been recruited from overseas, and in addition KiwiRail has been able to take on many more graduates and apprentices than in previous decades.

The investments from the first RNIP, as well as additional capital investments in rail, are now coming online and curtailing further investment both risks benefit realisation as well as losing this hard-won project delivery and personnel capability. While some people currently working on rail projects may transition to road construction, experienced rail engineers are in high demand internationally so critical skills are likely to be lost to New Zealand.

Maintaining and developing New Zealand's rail network provides flexibility to cope with changing economic and transport needs

Transport networks are a long time in the planning and construction and then are in place for many decades. By comparison, changes in economic activity tend to be shorter term fluctuations which can result in significant changes to transport flows and volumes. Train services can easily adapt to accommodate the likes of shipping port changes, so to best meet unpredictable future demands we need to maintain our national rail network and expand it appropriately, for example completing the rail link to the port at Marsden Point. Hence it is critical to take a long-term view to retain flexibility and keep options open so that future economic opportunities are not compromised.

The draft GPS-LT's assertion that investment in rail should be focused on the Auckland and Wellington suburban passenger networks and on Freight services in the Upper North Island Golden Triangle fails to recognise that rail itself also operates as a national network. Limiting investment and operations to these specific areas would mean that freight flows suitable for rail in other parts of the country would not receive the attention and funding they require, and risk being lost to other modes - at an overall cost to the economy. For example, there are significant export flows of dairy products on rail in the South Island that would result in increased roading maintenance costs if they moved to road haulage.

² <https://www.kiwirail.co.nz/our-network/funding-our-network/rail-network-investment-programme/>

In addition, reducing the core rail network to a smaller set of lines, will not necessarily result in a corresponding reduction in the management and overhead costs of running a rail system, but these costs will end up be spread over a smaller base of services. By contrast expanding the amount of freight and passengers carried by rail will spread these overheads more broadly. The nature of rail as a network is widely recognised and was confirmed in New Zealand as far back as the 1980's in a major Booz Allen & Hamilton review³.

New Zealand's geography means that highways and rail lines often run in adjacent corridors, a well-known example being that of State Highway 1 and the Main North Line railway in the Kaikoura area, where both modes run in a narrow strip of land between steep hillsides and the sea. This proximity meant that the rebuild of the railway and highway post the 2016 Kaikoura Earthquake had to be performed as a collaborative effort between NZTA, KiwiRail, contractors and designers, and which is regarded as being highly successful. The evidence from documented lessons learnt on the Kaikoura Earthquake recovery is that the contribution of rail increased both the productivity of the response and the innovations created for both road and rail components of the works. The RTSA believes that similar collaborative approaches should be taken to cost effectively future proof and improve rail corridors as part of investments in new roading infrastructure. The formation of the Manukau rail link in Auckland was constructed in such a way and more recently the railway through Otaki was realigned to enable the Peka Peka to Otaki Expressway construction. In this vein opportunities for straightening-out the rail alignment north of Otaki as part of the Levin expressway project and to combine the construction of the Marsden Point Rail Link and Whangarei expressway should be progressed.

Rail is the most energy efficient land transport mode

International consumers and buyers of New Zealand main export products are increasingly demanding evidence of environmentally sustainable supply chains. At its most basic, steel wheels on steel rails provide a low-friction energy efficient transport solution, therefore in an environment where renewable energy sources are in high demand, rail has a fundamental, natural energy advantage compared to other land transport modes. Current and emerging developments in rail infrastructure and train technologies will continue to enhance and maintain this advantage.

Land transport represents one of the primary uses of energy in New Zealand (36%)⁴ and therefore it is concerning that there is no apparent recognition in the draft GPS-LT of the need for the country to invest in transport options that will utilise energy efficiently. Indeed, the focus on building more RONS is likely to result in increased transport energy consumption particularly if rail freight declines as a result.

While converting the country's road vehicle fleet to renewable energy on the surface appears sensible, it is unclear whether there will be sufficient energy sources available to achieve this, with a risk that over investment in new roads may result in stranded assets. Therefore, in our view a balanced approach should be taken which prioritises the use of scarce energy sources to the most energy efficient modes and actively encourages the use of such modes for key transport tasks. Combining linehaul movement by electric powered trains with local pickup and delivery by battery powered trucks from regional container transfer sites is likely a better option for New Zealand to invest in than just building more expressways. Further this

³ Comprehensive review of operations and strategic options evaluation, New Zealand Railways Corporation, Wellington, New Zealand, Booz Allen & Hamilton Inc 19834

⁴ <https://www.energymix.co.nz/our-consumption/new-zealands-consumption/>

pathway would be available to New Zealand well before conversion of the road vehicle fleet – an aspiration which lacks line of sight implementation and will likely compromise linehaul payloads.

The RTSA would like to see an objective “best for New Zealand” business case comparison undertaken of the proposed expressway extensions in the Waikato towards the Bay of Plenty, with upgrading and electrification of the East Coast Main Trunk railway.

New Zealand’s rail network is at risk because of the cuts to funding in the draft GPS

The levels of funding for rail proposed in the draft GPS-LT will not only halt the work that is underway to renew the railway’s assets but is likely to mean that large sections of the rail network will not be able to be sustained, in time leading to service decline, loss of competitiveness and eventual closure. The consequences of this would include significant increases in roading maintenance costs, increased road congestion, reduced road safety levels, higher transport energy use and loss of flexibility as a country to respond to changing circumstances. New Zealand cannot afford the risk of losing a valuable transport asset through short-term decisions and funding allocations.

RAIL’S CURRENT AND POTENTIAL CONTRIBUTIONS TO BETTER OUTCOMES FOR NEW ZEALAND

While the strategic priorities and key outcome areas in the draft GPS-LT are very focused on road investment and maintenance, the RTSA believes that Rail has a significant contribution to play both in its own right, and as a tool for reducing the amount of investment in road network capacity and maintenance needed, particularly relating to the effects of heavy vehicles. This is explored in more detail in this section.

Economic growth and productivity advantages of rail

It is recognised that New Zealand has a productivity challenge⁵ and we have one of the lowest productivity rates in the OECD. One of the many reasons is we use trucks too much for long haul freight transport instead of rail and coastal shipping.

Of all land transport modes, rail has the highest overall line haul productivity.

Its relatively high labour productivity arises from the ability of one person to operate trains of up to 1800 tonnes, whereas for road freight it is one person for up to 46 tonnes. Similar productivity improvements exist in infrastructure maintenance – the uniform and symmetric spacing of rails and sleepers allow the intensive use of track machines which automate much of the routine work. By contrast road maintenance is very labour intensive as there is limited scope for automation. Maintenance requirements of rail is a function of usage (axle loads and number of wheels) but does not have the “power of 4”⁶ issue with axle loads on the road which results in significant increase in road maintenance requirements as vehicle axle loads (and speeds) increase.

If New Zealand wants to improve its labour productivity (particularly with limits on immigration) land transport needs to do its share and rail is best placed.

⁵ <https://www.productivity.govt.nz/publications/productivity-by-the-numbers-2023/>

⁶ https://en.wikipedia.org/wiki/Fourth_power_law#:~:text=The%20load%20on%20the%20road,car%20is%2010%2C000%20to%201.

New Zealand has a significant current account deficit of \$30 billion dollars. A contributor to this is the investment in transport equipment and the fuel used to power them. The combination of rail's ability to carry heavier loads, train vehicles together, and use less energy per tonne compared to heavy trucks, will have a commensurate improvement in the effectiveness of our use of our imported capital and assist in reducing our current account deficit.

Rail has similar advantages regarding land use productivity. Rail has a small corridor footprint, which combined with the concept of the "train" of connected vehicles creates a "pipeline" with unmatched throughput for moving freight tonnage and people. Railways deliver people and freight safer and with less direct and indirect harm to people and communities than other land transport modes and does so with less land required. Furthermore, developments in signalling and train control technology continue to increase capacity of the existing rail corridors and enhance their already high safety levels.

Rail capacity in Auckland is shortly going to be at saturation point. To make full use of the City Rail Link (CRL) there is going to be a revised timetable with increased frequency and express services, in particular to provide a reasonable level of service for the new suburbs of south Auckland that will be serviced by the extension of the electrified network to Pukekohe. At the same time this route is the northern section of the "golden triangle" with significant freight flows particular to and from the port at Tauranga and points south. Unless there is sustained investment in increasing the route capacity in the Westfield to Pukekohe section (ideally increasing the rail capacity to two lines in each direction) this route will become a constriction on the economic growth of Auckland (and the country). Road will not be able to provide a solution to this without further adding to the Auckland congestion problem.

Rail is not just a solution to the "Auckland" problem but also to those areas which are not subject to the proposed new RONS. An example is the Southland – Otago area which is a major area of exported primary production (e.g. milk products, meat, and forestry). Rail provides the link between the sources of production and the ports of Lyttleton, Timaru, Port Chalmers, and Bluff. If the rail network was to go into decline in these areas the road network will not be able to replace the capacity and flexibility without a major investment which is not identified in this Strategy.

Further, it is essential that all major import/export ports in New Zealand continue to be connected to the rail network, and in addition North Port at Marsden point be rail served as a high priority. This will provide both more transport choices for shippers and flexibility to readily adjust to changes in shipping port calls. The lack of a rail link to Marsden Point is not only inhibiting the development of North Port but the large number of truck movements required to relocate containers to Auckland, from a diverted ship in 2020⁷, highlights the cost penalty caused by its absence.

Advances in rail technology continue to change the face of rail transport, but the laws of physics which dictate the low rolling resistance of steel wheel on steel rail are unchanging and continue to provide trains with their low rolling resistance and energy efficiency unmatched in the land transport of freight and people.

These energy and land use factors underpin the flexibility in application of a railway. Freight can be moved efficiently over distance in large or small volumes and the railway is equally suited to short-haul and is seeing increasing use in providing connections with inland ports and storage facilities to the advantage of

⁷ <https://www.stuff.co.nz/business/300175069/safety-fears-over-2700-truck-trips-from-giant-container-ship-in-northland-to-auckland>

highway congestion and land use in addition to long-standing linkages to sites e.g. Murupara forests. Flexibility also has a time dimension for one-off or seasonal application, such as when a ship skips a port call or when milk is flowing in season, whether by adding extra capacity to a scheduled service (longer train) or by timetable additions. Services can be offered that are responsive to a range of customer needs – both FMCG⁸s and less time sensitive freight that can be phased to optimise train capacity – both as part of a wider system feeding last-mile services or point to point.

Increased maintenance and resilience

The draft GPS-LT gives emphasis to increased maintenance and resilience for the national road network but is silent on the parallel need for rail, nor does it recognise the trade-offs between the two.

Rail also requires investment to achieve a greater resilience particularly in routes which are either directly involved in export flows or merchant goods flows from Auckland to Christchurch and Dunedin. Road will not have the capacity to sustainably replace these flows and if it did, the outcome will be greater damage to roads (with a commensurate increase in maintenance costs and reduction in service levels that will come with “potholes” and speed reductions during maintenance periods).

The introduction of HPMVs a decade ago has contributed to increased deterioration of the national road bridges and structures assets. The draft GPS-LT is silent on the capital investment required to address this issue as well as the potential further decline in roading asset condition that will arise from higher numbers of trucks resulting from the GPS strategic direction. Further it is silent on the use of rail to reduce roading costs.

Improved safety

The strategy is silent on the positive effect that greater use of rail will have on road safety. As discussed earlier, rail is the safest of the land transport modes. It is generally separated from other modes and signalling systems ensures a high level of within rail safety for both staff and passengers. In addition, an increased percentage of freight on rail will improve the safety outcomes of our roads where one of the fundamental risks is the mixing of larger and heavier freight vehicles with lighter passenger vehicles. The strategy is silent on use of rail (both passenger and freight) to reduce our road safety burden.

Where rail is not separated from road it is generally at level crossings and there is nothing in the strategy which indicates any funded programme of work of mode separation (such as bridges or underpasses) or improved traffic controls (such as controlled level crossings replacing uncontrolled crossings). Mode separation also has the benefit of improving travel times (particularly of road users) in urban areas.

Value for money

The advantages that rail can provide over other modes of land transport for moving freight and people efficiently with low energy and operational costs, as well as reduced road maintenance and other costs, demonstrates that replacing the direction set by the Ministry of Transport’s New Zealand Rail Plan from 2021 and KiwiRail’s associated Rail Network Improvement Programme with the narrower roading focus of the current draft GPS-LT is likely to result in poor value for money for New Zealanders.

⁸ Fast Moving Consumer Goods

Energy efficiency and decarbonisation

Rail's inherent energy use advantages have already been discussed. Internationally railway systems are progressing with ever developing technologies and degrees of automation.

Rail also has the advantage of being better placed to utilise local energy sources over imported fossil fuels. Electrified railways are uniquely placed to make best, and most direct use of electricity without the losses of conversion to and from various forms of energy storage. They are also a mature and readily available technology in widespread use in both New Zealand and throughout the world. In addition, where the cost of providing fixed power infrastructure can't be justified, rail is uniquely placed to utilise alternative fuels by using support vehicles to carry batteries or other forms of fuel storage (such as hydrogen) without unduly compromising train payloads. By comparison the options for converting heavy road vehicles to alternative fuels sources are much more limited and carry higher payload penalties.

CONCLUSION

The draft GPS-LT is lacks balance because of its singular focus on road transport and infrastructure as a means of achieving the Governments desired outcomes for productivity and economic growth while not considering the contribution of rail. Additionally, the urgent need to reduce the transport sector's reliance on imported fossil fuels and overall energy consumption is missing.

For New Zealand to grow into a productive and energy efficient economy, rail also needs to be a significant part of an integrated land transport system. Previous studies commissioned by the Ministry of Transport has shown rail is:

- Is the most productive of our land transport modes measured in terms of labour, capital and land employed
- Is the safest land transport mode
- Is the most energy efficient through its "steel on steel" attributes as well as the efficiency by which it can be converted to electric operation or utilise alternative energy sources— there is no clear pathway that we will be able to generate enough "green" electricity to power our road fleet
- Has significant latent capacity on much of the network to carry more passengers and freight.
- Provides significant economic, safety and environmental benefits to road users and New Zealanders as a whole

The levels of funding for rail proposed in the draft GPS-LT will not only halt the work that is underway to renew the railway's assets but is likely to mean that large sections of the rail network will not be able to be sustained, in time leading to service decline, loss of competitiveness and eventual closure. The consequences of this would include significant increases in roading maintenance costs, increased road congestion, reduced road safety levels, higher transport energy use and loss of flexibility as a country to respond to changing circumstances. New Zealand cannot afford the risk of losing a valuable transport asset through short-term decisions and funding allocations.

The RTSA considers that there is a better way forward for Land Transport in New Zealand , than that set out in the draft GPS-LT. The issue is not favouring one mode at the expense of other modes or encouraging competition between modes. Instead, each mode must be allowed and funded to play to its strengths in an integrated transport system to optimise costs, energy use and best serve New Zealand's needs.

New Zealand has a railway – a network that is a substantial backbone supporting the ever-changing economic activities and transport flows connecting New Zealand’s major centres, ports, and industries. It is well placed to perform a greater role in the country’s land transport task and should be planned for and funded accordingly.

The RTSA would be happy to discuss any of the points in our submission with the Ministry of Transport. Please contact John Gardiner (johncgardinernz@gmail.com) if we can be of additional support.

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