The Future Of Regional and Long Distance Passenger Rail In New Zealand

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Heriot-Edievale.com

Railway Technical Society of Australasia (RTSA)

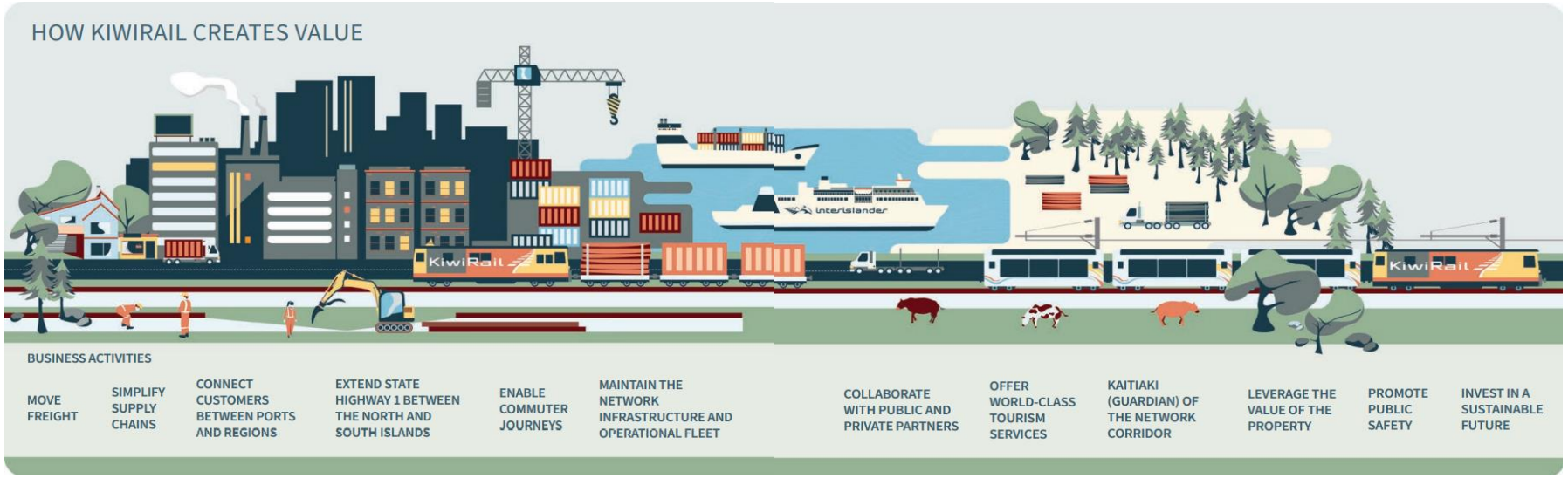
- Trans-Tasman organisation for anyone with a professional interest in railways
- Objectives:
  - stimulate the active contribution and participation of its members in the development and dissemination of railway technology and management knowledge
  - support the business of the railway industry
  - provide for the continuing professional development of its members
  - promote close working relationships amongst participants in the railway industry.
- Regular face to face CPD events, webinars, training and education, awards, knowledge bank, conferences, study tours
- https://www.rtsa.com.au/membership/

A	Member - $80
B	Graduates - $40 (<5 years)
C	Retirees - $0
D	Students - $0 (full-time)

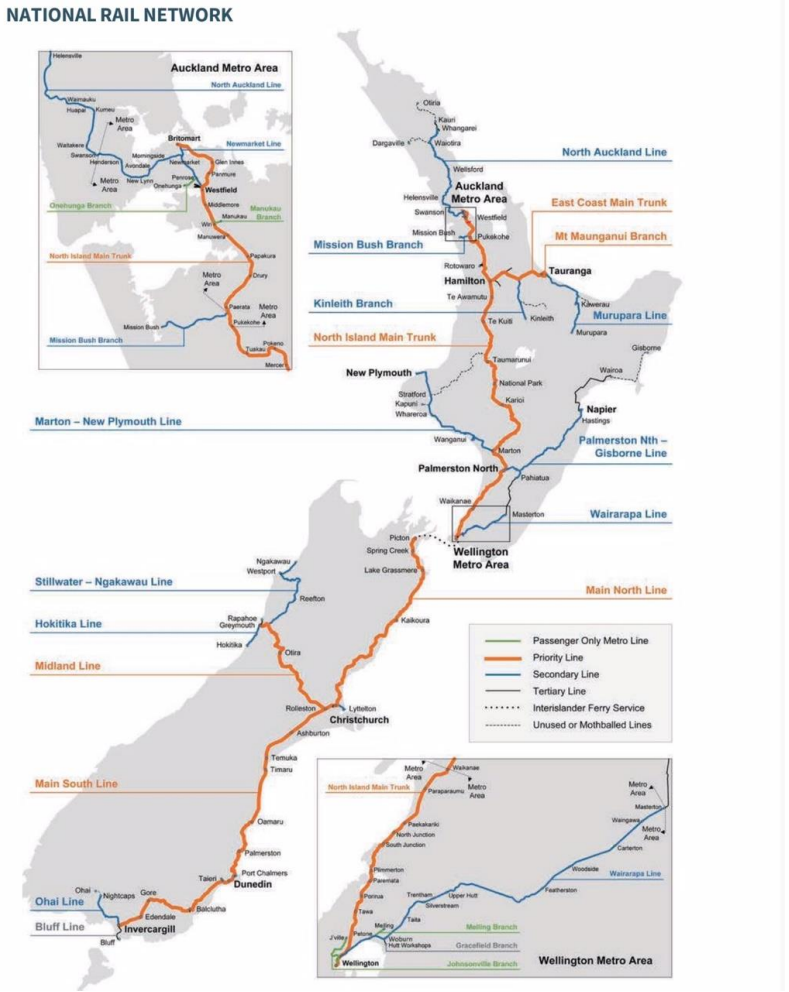
New Zealand Railways Characteristics

- Cape Gauge (1067mm) Network with quite tight gauge and kinematic envelopes. About 3700km operating of which 1500km passenger (additional 400 km mothballed) – mostly diesel
- NIMT electrified 1980's Palmerston North to Hamilton (25Kv), Auckland Metro (25 kV AC) in 2010's and Wellington Metro (1500-1600 V Dc) network beginning mid 1930's.
- Quite a lot recent reinvestment to rehabilitate / replace assets
- Axle load is generally 18 tonnes – some lines are less at 16 tonnes
- Interisland rail capable ferries operate between North and South Island – with two new large rail capable ferries on order for 2025 delivery
- Top rated speed for pax is 110 kph for NIMT – although much of network is rated lower at 100 kph or less at 90kph, 80kph or even less on some regional lines.
- Predominately freight network outside of Auckland and Wellington Metros with limited inter-regional passenger trains and some long distance Scenic Trains operating. Freight is Bulk (Coal, Forestry, Milk etc), Intermodal Import/Export containers (Dairy, Meat, General etc), Domestic Intermodal logistics distribution (JIT), Manufactured product (Such as steel etc)

KiwiRail and The Passenger Context



NZ Rail Network Today



New Zealand Railways Organisations

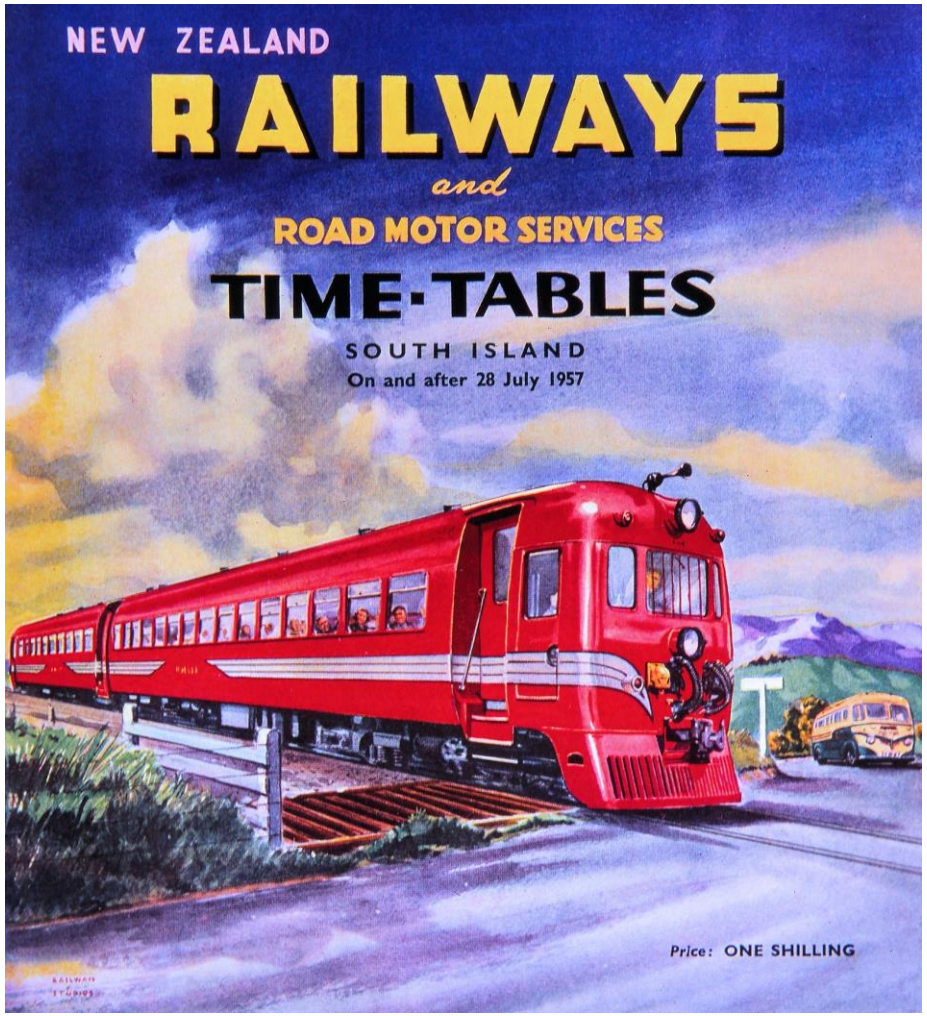
Main Government Agencies / Organisations

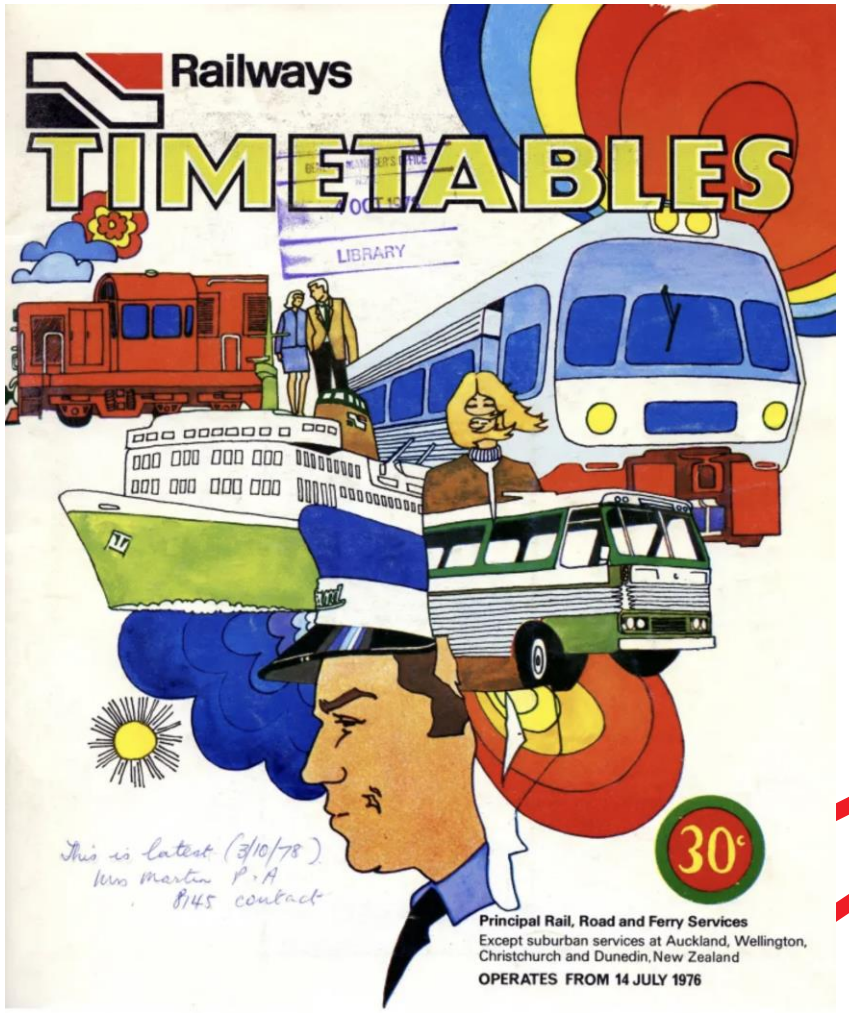
- **KiwiRail** – State Owned Enterprise - Access Provider, Network Owner / Developer as well as Rail operator of Freight services, Long Distance/Regional passenger – Vertically Integrated Railway
- **New Zealand Transport Agency (NZTA) - *Waka Kotahi*** – Funding / Regulator / Multi Modal Transport Agency Planning
- **Ministry of Transport (MoT)** – Transport policy and advice across transport
- **Auckland Transport (AT)** – Client / Planner for Auckland Metro Passenger Rail
- **Wellington Regional Council** – Client / Planner for Wellington Metro Passenger Rail
- **Waikato Regional Council** – Client / Planner for Waikato Regional Passenger Rail
- **Other Regional Councils** – Potential Clients for Regional Passenger Rail

Operators / Major Participants

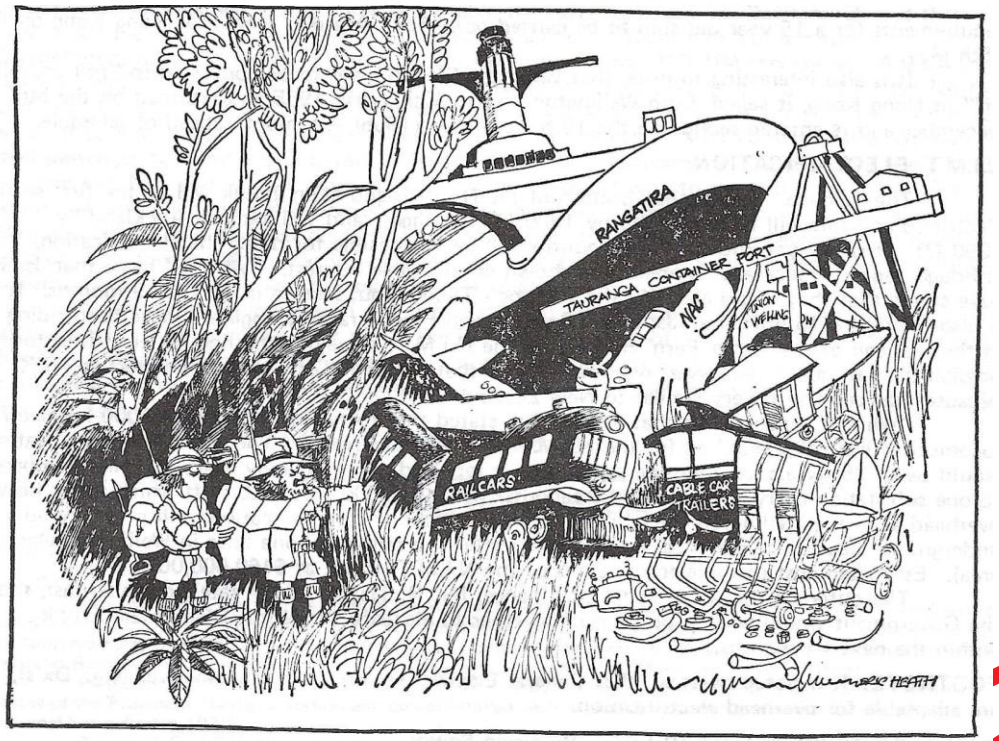
- **KiwiRail** – National Rail freight operator and Long Distance / Regional Passenger and Interisland Ferry Operator
- **Transdev Wellington** – Operator Wellington Metro Rail since 2016
- **ComfortDelGro / UGL - Auckland (Auckland One Rail)** - Operator Auckland Metro Rail since 2022
- **CAF** - Rolling stock maintainer Auckland Metro Rail to 2024
- **Hyundai Rotem** – Rolling stock maintainer Wellington Metro Rail
- **Various Heritage Rail Operators** e.g. Dunedin Railways, GVR

From Passenger Growth to Eventual Decline





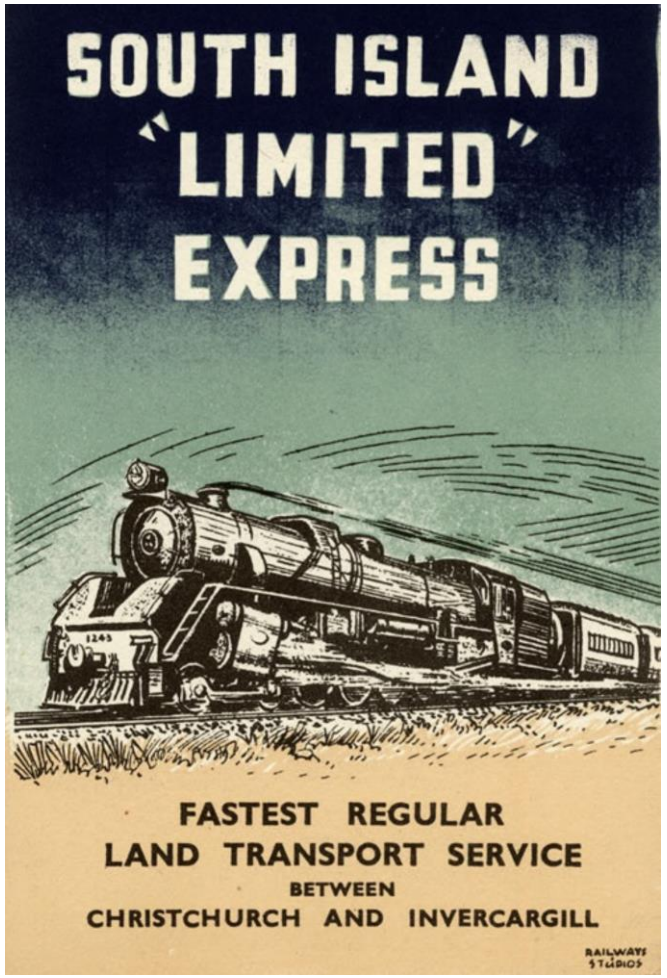
Railcars - From Confidence to Despair

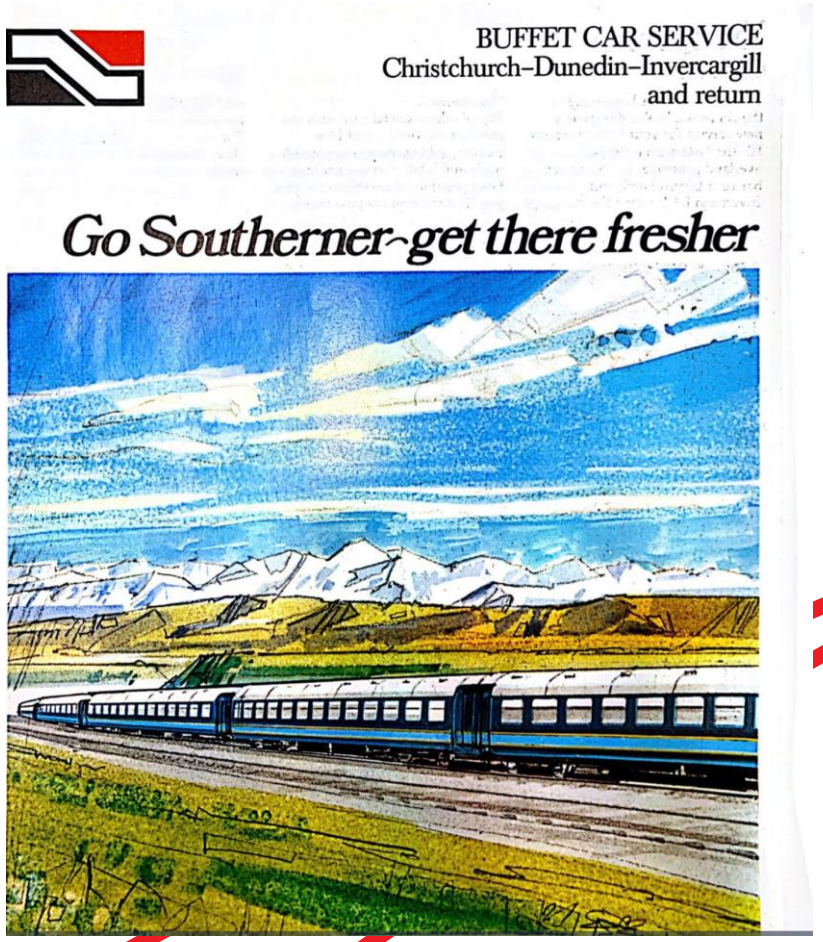


"Gad, Carruthers! I do believe it's the lost graveyard of white elephants."

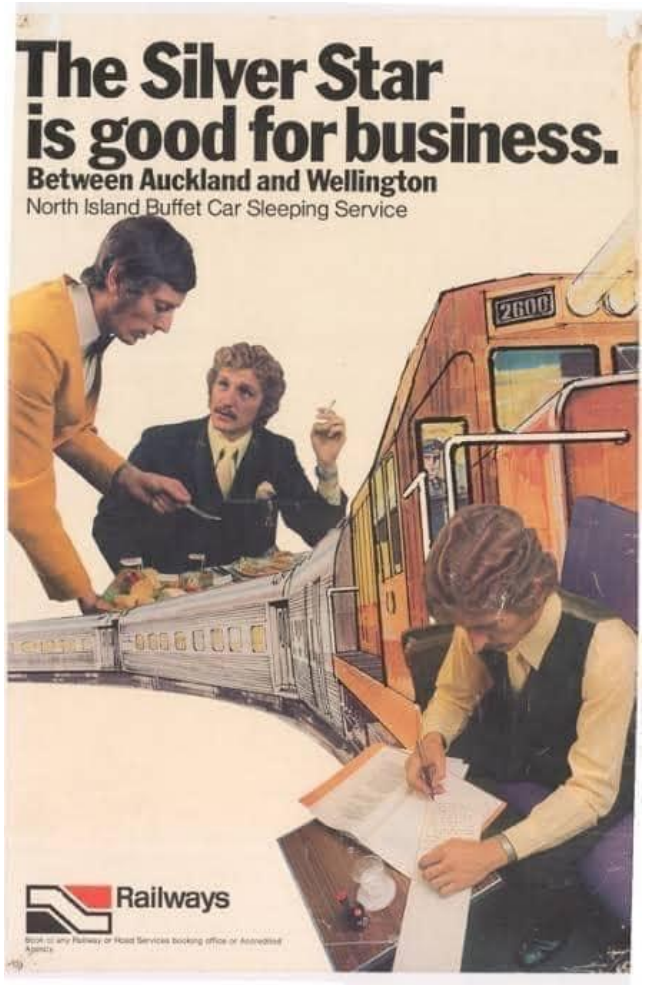
"reprinted from 'The Dominion' with thanks"

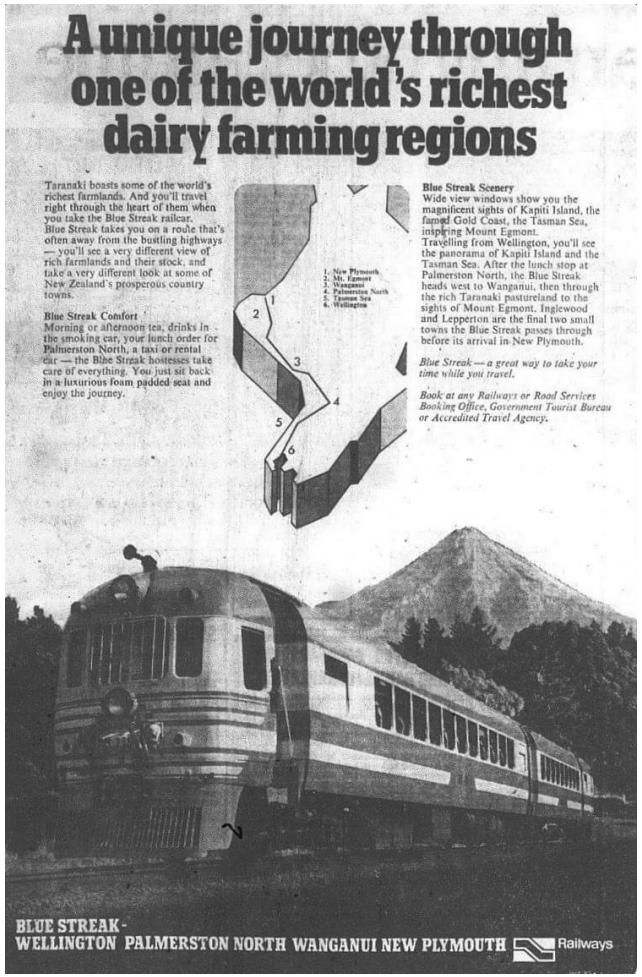
South Island – Home Of NZ Fastest Train -

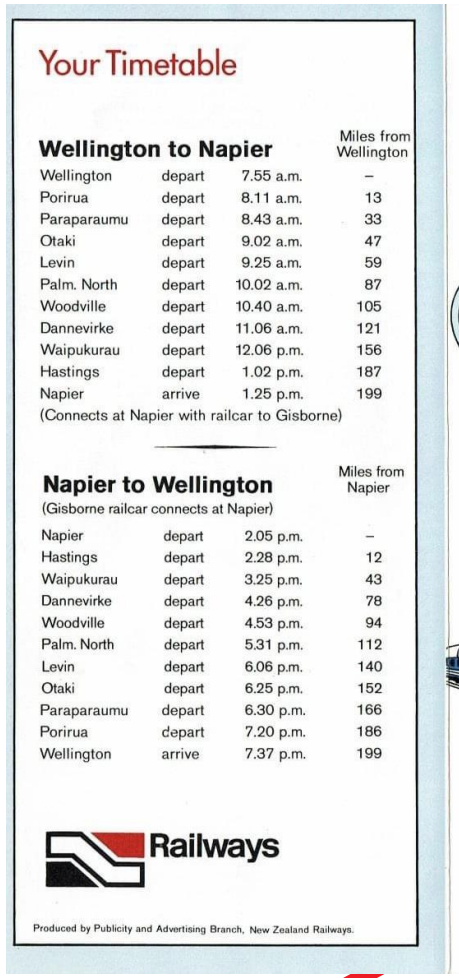


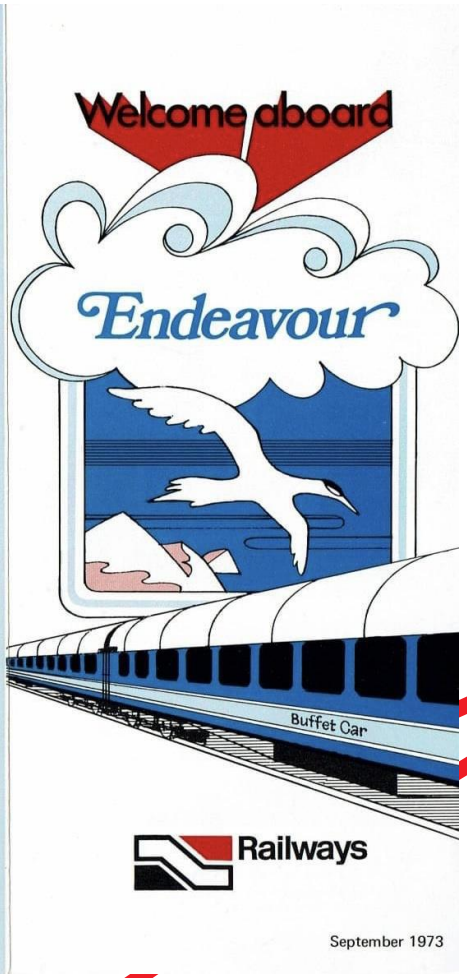


Mid 1970's - The Top Notch Premier Trains

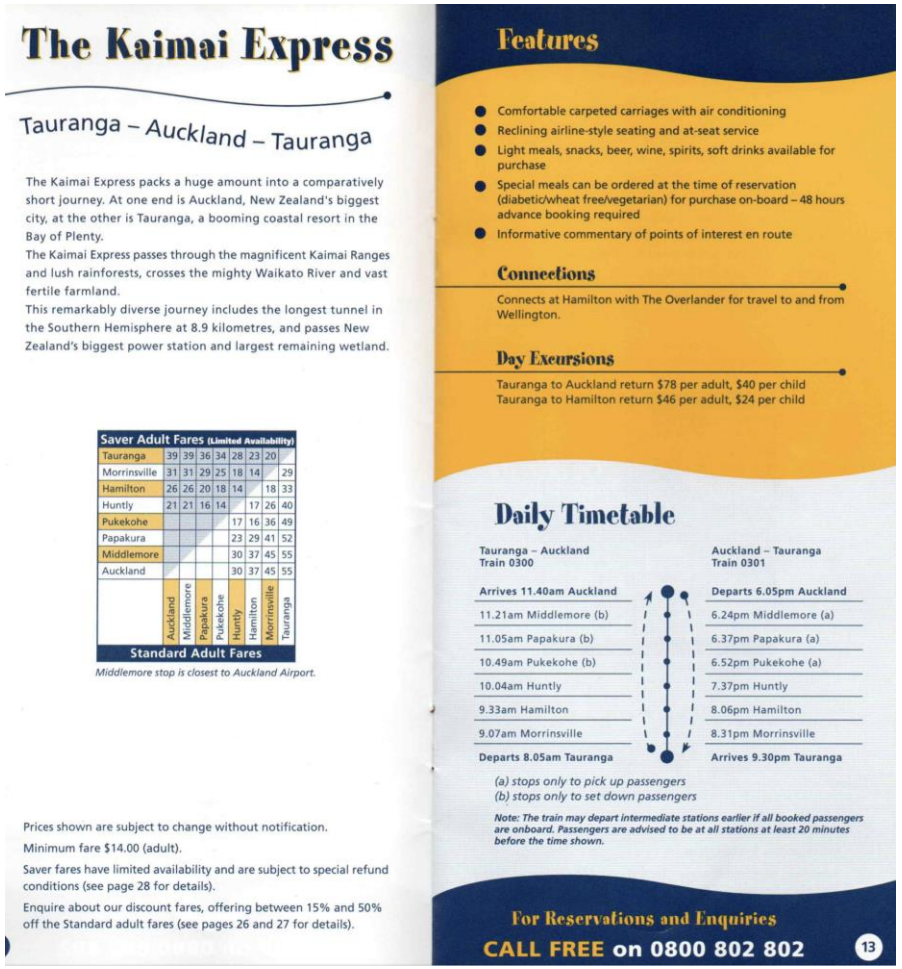








1990's – Last Gasp Of Regional Rail Growth



The Kaimai Express

Tauranga – Auckland – Tauranga

The Kaimai Express packs a huge amount into a comparatively short journey. At one end is Auckland, New Zealand's biggest city, at the other is Tauranga, a booming coastal resort in the Bay of Plenty.
The Kaimai Express passes through the magnificent Kaimai Ranges and lush rainforests, crosses the mighty Waikato River and vast fertile farmland.
This remarkably diverse journey includes the longest tunnel in the Southern Hemisphere at 8.9 kilometres, and passes New Zealand's biggest power station and largest remaining wetland.

Saver Adult Fares (Limited Availability)

	Auckland	Middlemore	Papakura	Pukekohe	Huntly	Hamilton	Morrinsville	Tauranga
Tauranga	39	39	36	34	28	23	20	
Morrinsville	31	31	29	25	18	14		29
Hamilton	26	26	20	18	14		18	33
Huntly	21	21	16	14		17	26	40
Pukekohe					17	16	36	49
Papakura					23	29	41	52
Middlemore					30	37	45	55
Auckland					30	37	45	55

Standard Adult Fares

Middlemore stop is closest to Auckland Airport.

Prices shown are subject to change without notification.

Minimum fare $14.00 (adult).

Saver fares have limited availability and are subject to special refund conditions (see page 28 for details).

Enquire about our discount fares, offering between 15% and 50% off the Standard adult fares (see pages 26 and 27 for details).

Features

- Comfortable carpeted carriages with air conditioning
- Reclining airline-style seating and at-seat service
- Light meals, snacks, beer, wine, spirits, soft drinks available for purchase
- Special meals can be ordered at the time of reservation (diabetic/wheat free/vegetarian) for purchase on-board – 48 hours advance booking required
- Informative commentary of points of interest en route

Connections

Connects at Hamilton with The Overlander for travel to and from Wellington.

Day Excursions

Tauranga to Auckland return $78 per adult, $40 per child
Tauranga to Hamilton return $46 per adult, $24 per child

Daily Timetable

Tauranga – Auckland Train 0300	Auckland – Tauranga Train 0301
Arrives 11.40am Auckland	Departs 6.05pm Auckland
11.21am Middlemore (b)	6.24pm Middlemore (a)
11.05am Papakura (b)	6.37pm Papakura (a)
10.49am Pukekohe (b)	6.52pm Pukekohe (a)
10.04am Huntly	7.37pm Huntly
9.33am Hamilton	8.06pm Hamilton
9.07am Morrinsville	8.31pm Morrinsville
Departs 8.05am Tauranga	Arrives 9.30pm Tauranga

(a) stops only to pick up passengers
(b) stops only to set down passengers

Note: The train may depart intermediate stations earlier if all booked passengers are onboard. Passengers are advised to be at all stations at least 20 minutes before the time shown.

For Reservations and Enquiries
CALL FREE on 0800 802 802

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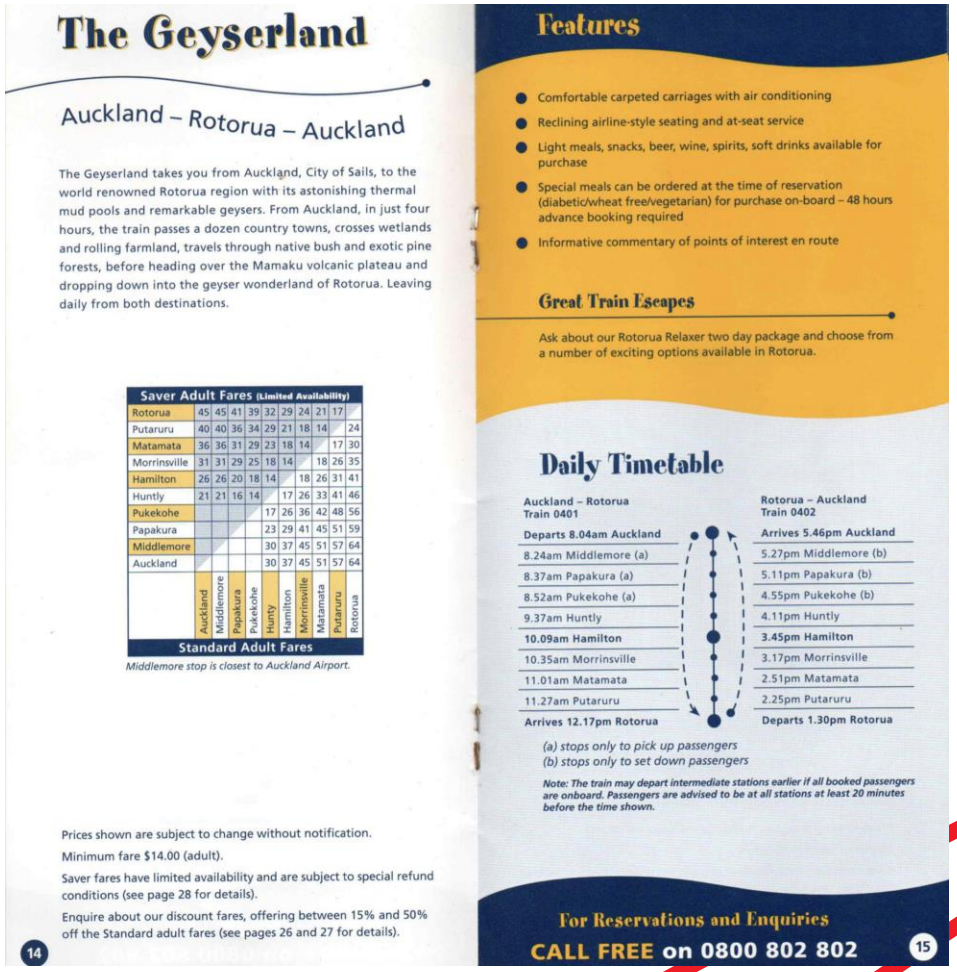

The Geyserland

Auckland – Rotorua – Auckland

The Geyserland takes you from Auckland, City of Sails, to the world renowned Rotorua region with its astonishing thermal mud pools and remarkable geysers. From Auckland, in just four hours, the train passes a dozen country towns, crosses wetlands and rolling farmland, travels through native bush and exotic pine forests, before heading over the Mamaku volcanic plateau and dropping down into the geyser wonderland of Rotorua. Leaving daily from both destinations.

Saver Adult Fares (Limited Availability)

	Auckland	Middlemore	Papakura	Pukekohe	Huntly	Hamilton	Morrinsville	Matamata	Putaruru	Rotorua
Rotorua	45	45	41	39	32	29	24	21	17	
Putaruru	40	40	36	34	29	21	18	14		24
Matamata	36	36	31	29	23	18	14		17	30
Morrinsville	31	31	29	25	18	14		18	26	35
Hamilton	26	26	20	18	14		18	26	31	41
Huntly	21	21	16	14		17	26	33	41	46
Pukekohe					17	26	36	42	48	56
Papakura					23	29	41	45	51	59
Middlemore					30	37	45	51	57	64
Auckland					30	37	45	51	57	64

Standard Adult Fares

Middlemore stop is closest to Auckland Airport.

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- Informative commentary of points of interest en route

Great Train Escapes

Ask about our Rotorua Relaxer two day package and choose from a number of exciting options available in Rotorua.

Daily Timetable

Auckland – Rotorua Train 0401	Rotorua – Auckland Train 0402
Departs 8.04am Auckland	Arrives 5.46pm Auckland
8.24am Middlemore (a)	5.27pm Middlemore (b)
8.37am Papakura (a)	5.11pm Papakura (b)
8.52am Pukekohe (a)	4.55pm Pukekohe (b)
9.37am Huntly	4.11pm Huntly
10.09am Hamilton	3.45pm Hamilton
10.35am Morrinsville	3.17pm Morrinsville
11.01am Matamata	2.51pm Matamata
11.27am Putaruru	2.25pm Putaruru
Arrives 12.17pm Rotorua	Departs 1.30pm Rotorua

(a) stops only to pick up passengers
(b) stops only to set down passengers

Note: The train may depart intermediate stations earlier if all booked passengers are onboard. Passengers are advised to be at all stations at least 20 minutes before the time shown.

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The 2020's – Today – NZ Passenger Rail

Auckland Metro – CDC & UGL

Great Journey's – KiwiRail

Wellington Metro - Transdev

Regional Rail – KiwiRail

Wellington - Auckland By Rail 8hr:37min in 1967 with NZ Built 1938 Railcar

RECORD-BREAKING RAILCAR TRIP ON NORTH ISLAND MAIN TRUNK RAILWAY

Railcar Sets New Times On Round Trip

OLDEST RAILCAR on the Wellington - New Plymouth service, RM 30, "Aotea", sped from Wellington to Auckland and back on Saturday, January 28, to break both northbound and southbound time records.

THE CAR, which carried 24 railway enthusiasts as passengers, was chartered by Mr. J. A. Murphy, of Lower Hutt.

The performance of "Aotea" on January 28 was due to several factors, including improvements to the track since 1938, centralised traffic control as compared with the old tablet system, and the enthusiastic co-operation of Railways' personnel.

TIMEKEEPERS

Among the timekeepers on the car were Messrs. T. A. McGavin, K. I. Bullock, K. J. Hesz and G. Troup.

RM 30 left No. 4 Platform, Wellington, at 12.1 am and ran non-stop to Palmerston North, where it departed at 1.40½am.

Other stops were made at Marton (depart 2.18½am), Hunterville (to cross No. 227 Auckland - Wellington Express — depart 2.53½am), Ngaurukehu (to cross southbound "Night Limited"—depart 4.13½am) and Hihitahi, before arriving at Taumarunui at 6.2½am, where the car was refuelled.

SIGNAL CHECKS

The car left Taumarunui at 6.39½am and arrived in Frankton at 8.43am, after four signal checks—at Ongarue, Waimiha, Porootarao and Mangapehi.

After a change of drivers, the car left Frankton at 8.46½am and arrived in Auckland at 10.20½am, 40 min early.

Gross running time was 10hr 19½min, and net 8hr 54min.

LATE DEPARTURE

At Auckland servicing troubles were experienced, causing a late departure of 38min—at 12.38½pm.

Fine weather and relatively light opposing traffic enabled an all-out effort to be made and all lost time was recovered by Taumarunui.

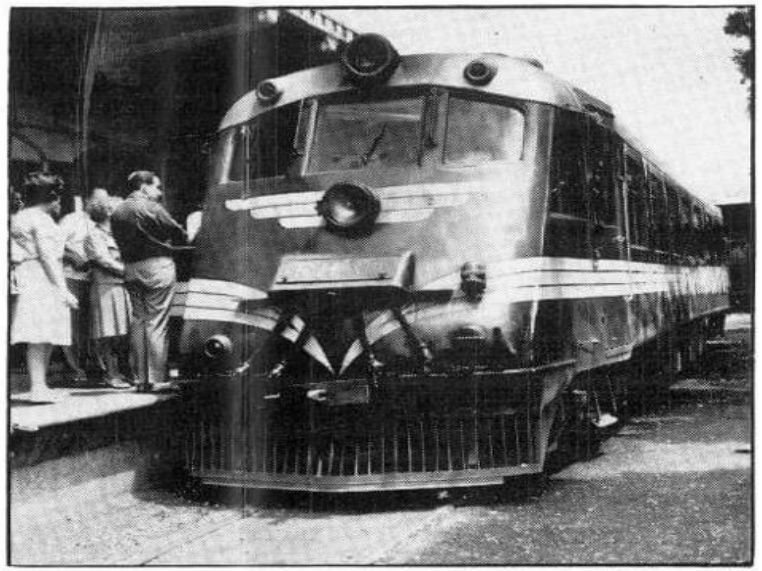
A non-stop run to Frankton (depart 2.15pm) was followed by further stops at Taringamotu (to cross northbound "Scenic Daylight"—depart 4.5pm), Taumarunui (to refuel—depart 4.29pm), Mananui, and Piriaka (to pick up two passengers who were left behind at Taumarunui).

FURTHER STOPS

After further signal stops at Kakahi and Erua, Taihape was reached at 6.46½ pm, where the pilot was set down. The car cleared Taihape at 6.48½pm and after a further signal check at Mangaweka, arrived at Palmerston North at 8.15pm.

RM 30 departed Palmerston North after a refreshment stop at 8.25pm and after crossings at Levin and Manakau, arrived back in Wellington at 10.4½pm.

Gross southbound time was 9hr 26½min, and net 8hr 42½min.



RM 30, "Aotea" at No. 1 Platform, Auckland Railway Station, after its record-breaking run from Wellington on January 28.—Photo, K. J. Hesz, "Evening Post" block."

'Surprising Performance' On Main Trunk

ENTHUSIASTS who made the journey by special railcar from Wellington to Auckland and back last month soon found that the schedule, which offered better than usual speeds, was easily improved upon.

NEARLY all running was well ahead of schedule and in fact on at least one occasion was 26min in advance.

Only twice did RM 30 fall behind time.

These delays were caused by the unavailability of torque converter oil at Auckland and "lost" passengers at Taumarunui.

The rate at which "Aotea" progressed up and down the Main Trunk was really surprising—in fact at least one experienced observer considered his records as unbelievable.

"Aotea" probably broke about 90 per cent of all the intermediate records on the run.

The two best times are probably Wellington-Palmerston North, 98min; Frankton-Auckland, 94min.

This remarkable journey recorded by a mere handful of observers will have provided them with intermediate times that will take a long time to improve upon—thanks to the excellent co-operation of NZR train control staff and railcar crews.—"TINHARE."

Previous Records On Main Trunk

THE previous northbound record was held by the General Manager's four-wheel inspection car, "Red Terror," which took 8hr 56 min net, in August, 1938. In December, 1938, RM 31, "Tokomaru," made the run in 10hr 20min gross.

The southbound record of 9hr 45min net was set by RM 9, "Arai-Te-Uru," a Wairarapa railcar, in February, 1938.

STEAM SHUNTING DECLINES

"Express" Reporter

DUNEDIN may beat Timaru to be the first South Island shunting area to be dieselised.

THERE are now four "Dsc's" in use—Nos. 460 to 463—on shunting duties.

Steam only appears for about two hours on odd days.

This is handled by "Ba" 552 one week and "Bb" 626 the next.

"Ba" 551 and "Bb" 633 have not been used recently and are quietly gathering dust in the back of the locomotive shed.

WAGONS SHIPPED TO SOUTH ISLAND

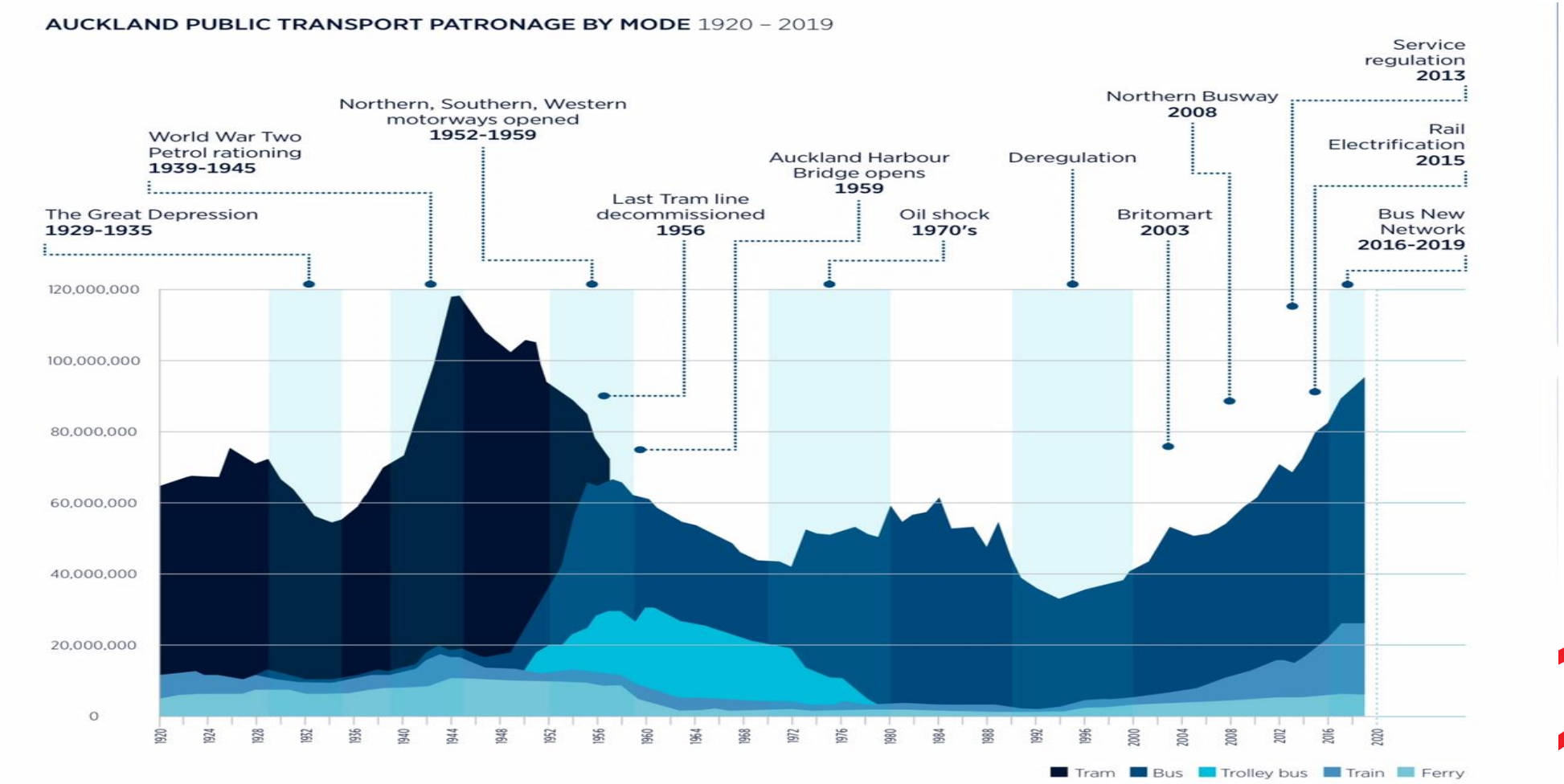
"Express" Reporter

DURING January a total of 45 "Ur" and "Ub" wagons went south on the rail ferry in nests of three (see illustration last month).

To judge from the steady flow of such wagons with ordinary loads to the south the imbalance must have been much more than 45.

Most of the loads were cars and lorries destined for all parts of the South Island.

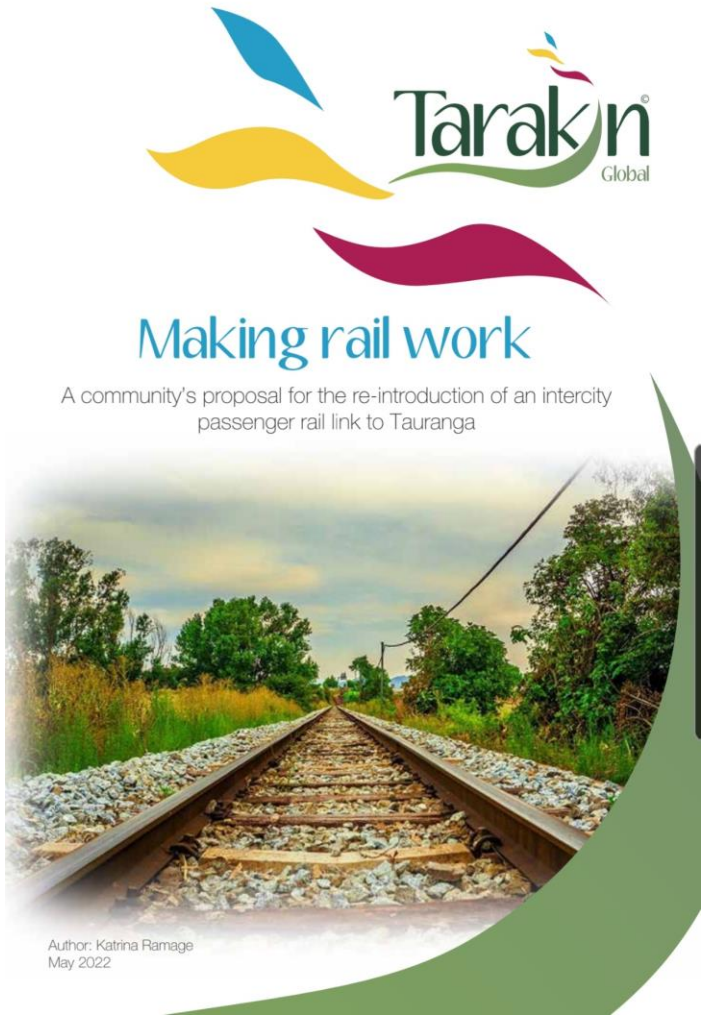
Public Transport Trends New Zealand – Auckland example



The Case For National Integrated Public Transport Planning - Rail Perspective

- NZ at a junction when comes to inter-regional public transport and passenger rail.
- Will it continue its rail focus of almost entirely focusing investment on urban passenger rail in Auckland and Wellington regions ?
- Or can it expand planning to include passenger rail reconnecting regions to main urban areas and extend back into the Heartland as a national network?
- What sort of country we want NZ to be? At stake is social equity, national connectivity, transport accessibility, meeting climate change commitments, improved transport safety, regional rejuvenation, affordable housing access and **even patriotic national pride as one joined up nation.**
- Few things give the perception of a united nation like quality national rail networks.
- Need national consensus to correctly identify viable opportunities and problems trying to solve to fulfill potential to help deliver a more sustainable future that helps NZ fully realise it's potential. Linking opportunities to spatial planning also important

Bringing the Passenger Railway Back From The Brink



"There is no reason to believe that bureaucrats and politicians, no matter how well meaning, are better at solving problems than the people on the spot, who have the strongest incentive to get the right solution."

Elinor Ostrom

The policy for inter-city and community rail networks should never have been abandoned in New Zealand without a proper inter-generational and cross societal discussion.

Networks like rail make everyone in society feel connected.
The longer we avoid the conversation, the more expensive it gets to fix the oversights of the past.
It is time to start a new conversation!

See www.heriot-edievale.com for this document

Inter-Regional Passenger Rail Funding - Process

- The MoT working on guidance for local councils to assist planning, costing, funding and other considerations for new regional passenger rail service development framework.
- *Waka Kotahi,* responsible for funding Government's contribution services, and KiwiRail (operator) both involved.
- Currently regional councils and *Waka Kotahi* contribute funding to the current inter-regional trains *Te Huia* and *The Capital Connection*.
- Process to consider viability / establishment of further inter-regional passenger trains in NZ spelt out on Kiwi Rails website.
- Up to Regions to prioritise new service in Regional Land Transport Plan (RLTP), used by *Waka Kotahi* to determine regional transport initiative funding.
- Including a regional rail proposal in RLTP signals a new passenger rail service ready for funding. Only then does Government consider if to be prioritised in NZ Rail Plan – a 10-year vision for rail in NZ to guide future investment decisions.

Inter-Regional Passenger Rail Funding - Process

- Approach highlights a significant deficiency in current process. Everything has to be instigated by regions but **inter-regional and national public transport a national issue**. Makes inter-regional rail very challenging.
- **Where is the national vision?** Who is responsible for that? Central Government agency leadership required with regional partnerships for inter-regional PT and rail to develop. The current PT planning process heavily biased to intra-regional which worked well for Auckland and Wellington Rail but not so much elsewhere.
- **Establishment of a stronger National Public Transport function with a mandate to plan/develop national and regional integrated PT networks (Buses, Rail and Ferries) across all NZ** would be a start. Would help alignment with national development priorities and ensure business cases are **funded, not just a regional activities, but as national development ones**. Not a replacement for regional council transport functions rather a **framework & resource with national joined up PT planning function** something lacking in NZ today.
- Overhaul of Public Transport Operating Model (PTOM) required – This is underway

Why Inter-Regional Passenger Rail?

- In deciding what a future inter-regional rail network may look like it is important to establish what some of the key success factors may be.
- Key criteria include identifying where rail has a strategic advantage over other Public Transport modes or private motor car use.
- Some of these include potential journey time advantages due to superior rail alignments over road such as tunnelling or serving larger intermediate towns on route where large passenger flows can be generated.
- As an example the route between Wellington and Wairarapa through the Remutaka tunnel offers a key advantage over road avoiding the trip over the hills. Whilst strictly not inter-regional, as both the Hutt and the Wairarapa are part of the broader Greater Wellington region, it does demonstrate how such advantages has seen rail flourish.
- Analysing transport demand - current, latent, induced – how does rail affect PT Transport demand
- Spatial planning to ensure growth strategies are integrated with transport priorities with regional and inter-regional rail investment

Key Success Factors In Passenger Rail

- Provide critical community links to New Zealand between Cities, Towns and Country – **Connecting Communities**
- Support Economic Growth
- Promote modal shift by encouraging public transport by increasing its attractiveness
- Improve transport corridors capacity and resilience across society as a whole
- Enable Value for money
- Improve safety and reducing road congestion
- Reduce greenhouse gas emissions – supporting climate change initiatives
- Funding by Value Capture through Transit Hubs / TOD's / Development concessions
- Corridor / Housing / Land Use intensification right economics – Spatial Planning
- Getting / Estimate services demand right in post Covid-19 uncertain World

Possible Inter-Regional Rail Networks

- **1. Upper North Island Golden Triangle:** Auckland – Hamilton – Tauranga
- **2. Lower North Island**: Wellington – Masterton & Wellington - Palmerston North – Whanganui
- **3. Central South Island**: Christchurch – Ashburton – Timaru
- **4. National Network Connectors:** Auckland – Wellington and Wellington – Christchurch via IIL
- **5. Local Networks**: Auckland Metro, Wellington Metro, Suburban Christchurch, Mosgiel – Port Chalmers (Dunedin Railways), Waikato Local services, BoP Local services
- **6. Tourism Services**: Tranz Alpine and National Tour Train (all pax lines) / Charter Services – Fully Commercial
- **7. Eventual Network Expansion:** Extend Timaru to Dunedin then Invercargill, Wellington - Napier, Wellington - New Plymouth and maybe even Northland? Rotorua?
- **8. Heritage Operators**: e.g. Dunedin Railways, GVR, Mainline Steam, Steam Inc etc

1. Golden Triangle Sub Network (2020's - 2040's)

Description: Fast frequent pass rail connections Auckland - Hamilton - Tauranga with up to 160kph speed using possible Tri-Mode rolling stock – 50% of NZs population lives north of about Te Awamutu

Current Status: *Te Huia* Hamilton to Auckland launched April 2021 using refurbished ex BR rolling stock (DFB hauled) – top speed 100 kph. Infrequent service and no service to Tauranga. Hamilton - Auckland Intercity Project (Faster Rail) underway for MoT as client, Making Rail Work political discussion paper (Tarakin Global) – see www.heriot-edievale.com for public documents

Selected Challenges: Auckland Metro rail network congestion north of Pukekohe for fast frequent train pathing, broken electrification, Congested freight only ECMT, Kaimai Tunnel, lack of Tauranga passenger infrastructure, Level crossings, Track condition and alignment, non commercial funding required

Interventions required: Auckland Rail PBC, Auckland third and partial fourth mains, Central Auckland station location, enhanced signalling (Infill/ETCS), partial track duplication ECMT, Kaimai tunnel upgrade, new stations, Level crossing upgrades, alignment deviations, network speed upgrades to 130kph targeting 160kph, new Tri-Mode rolling stock, possible electrification extension, funding/delivery model

Waikato - Auckland Example – *Te Huia*

- *Te Huia* Hamilton and Auckland started in April 2021 - 2 return services Mon to Fri and 1 return service on Saturdays
- Locomotive hauled refurbished ex BR cars used (3 train sets) but new Tri or Bi Mode trains being considered post 2028
- Mixed performance to date due to Covid restrictions and long journey times due to Auckland Metro congestion now improving - stops at Puhinui for transfer to Airport by express bus with terminal station at The Strand, Central Auckland
- Plans for additional service enhancement underway to build on services strengths e.g. Interpeak services
- Longer term network capacity enhancement like 3rd and 4th main, additional platforms at Puhinui to speed up service enable more services and possible extension of services to South (Wellington) / East of Hamilton (Tauranga)
- Faster Rail business case – Cape gauge tilt trains (160kph) – preliminary business case has been developed and firmer business case under development by MoT
- Golden Triangle start and now very real and has major implications for Auckland rail network

2. Lower North Island Sub Network (2020's - 2030's)

Description: Fast frequent pass rail connections Wellington - Masterton and Wellington - Palmerston North - Whanganui with up to 130kph speed using possible Tri-Mode rolling stock – Corridors already have relatively high rail uptake

Current Status: *Wairarapa Connection* Wellington - Masterton and *Capital Connection* Wellington - Palmerston North using refurbished ex BR rolling stock (DFB hauled) – top speed 90/100 kph. Infrequent service and no service to Whanganui. Lower North Island Rail Integrated Mobility - Rolling Stock Business Case – currently unfunded see www.heriot-edievale.com for public documents

Selected Challenges: Selecting rolling stock, new maintenance/stabling facilities, signalling capacity, broken electrification, slower speed line to Whanganui, additional crossing loops /new stations, Level Crossings, Track condition and alignment, non commercial funding sources

Interventions required: Wellington network upgrades (Some underway), enhanced signalling (Infill/ETCS), crossing loops, new stations, modest alignment deviations (eg Forest Lakes), network speed upgrades to 120kph targeting 130kph, new Tri-Mode rolling stock, possible electrification extension, funding/delivery model

3. Central South Island Sub Network (2030's)

Description: Fast frequent pass rail connections Christchurch - Ashburton - Timaru with up to 120kph speed using possible Bi-Mode (Hydrogen/Diesel & Battery) rolling stock. Potential fast flat and fairly straight running

Current Status: No service currently exists – freight only line south of Rolleston, Formerly NZ's highest speed railway as flat alignment. New Rolling stock facility at Waltham could be perhaps be expanded

Selected Challenges: Selecting rolling stock, enhanced maintenance/stabling facilities, signalling upgrade, line speed has slipped to Freight speeds, additional crossing loops / new stations required, Level crossings, Track condition, non commercial funding sources

Interventions required: Freight corridor upgrades, new central Christchurch Railway station enhanced signalling, crossing loops, new station Ashburton, Level crossings, track quality improvements for network speed upgrades to 120kph targeting 130kph, Bi-Mode rolling stock, funding and delivery model

4. National Connector Sub Network (2020's - 2030's)

Description: Auckland - Wellington and Picton - Christchurch passenger rail connections with up to 120kph speed using possible Tri-Mode (NI) and Bi Mode (SI) rolling stock leveraging of upgrades on Auckland - Hamilton and Wellington - Palmerston North corridors

Current Status: *Northern Explorer* Auckland - Wellington service and *Coastal Pacific* Picton - Christchurch services currently exists – Infrequent service due to recommence September 2022

Selected Challenges: Selecting new rolling stock, enhanced maintenance facilities, signalling upgrades, track condition, non commercial funding sources

Interventions required: Enhanced signalling MNL, track quality improvements for network speed upgrades to 110/120kph, new Tri & Bi-Mode rolling stock, funding/delivery model

5. Local Regional "Metro" Networks (2020's - 2040's)

Description: Develop Local Metro networks operations in Auckland, Wellington, Waikato, BOP, Christchurch and Dunedin - Time frames – mostly 2030's and beyond

Current Status: Auckland and Wellington networks being developed and upgraded with network / station / signalling upgrades, electrification extensions, CRL in Auckland. No current local networks in Waikato (except Te Huia), BoP, Christchurch or Dunedin.

Selected Challenges: Selecting new rolling stock, enhanced maintenance/stabling facilities, track remediation, additional crossing loops / double tracking, signalling upgrades, new stations, non commercial funding sources

Interventions required: Waikato's network developments, BoP networks, Lyttleton - Rolleston and services to Rangiora in Christchurch. Utilise Dunedin Railways assets initially for Port Chalmers - Dunedin - Mosgiel passenger rail network, track quality improvements, New signalling, new stations, Bi-Mode rolling stock, new maintenance service facilities, funding/delivery model to be developed

6. Tourism / Charter Network (2020's – 2030's)

Description: *Tranz Alpine* tourism train Christchurch - Greymouth, Tour Train travelling NZ wide with premium commercial service level, and Charter Trains. Loco hauled carriage rolling stock using reconfigured AK loco hauled rolling stock. Speeds of 100 kph. Possible to run occasionally on routes such as Northland, Taranaki, Hawkes Bay etc

Current Status: *Tranz Alpine* currently exists and over time other AK fleet used for *Coastal Pacific* and *Northern Explorer* could be repurposed to 1 tour train set and 1 charter train set. New Rolling stock facility at Waltham can manage fleet

Selected Challenges: Release some of AK fleet for repurposing depends on new rolling stock for *Coastal Pacific* and *Northern Explorer* route. Fully commercial services possible.

Interventions required: Depends on AK fleet being released from existing services and then being refurbished. Fully commercial business case for operating and capital investment – operation could be partially privatised or concession given to enable innovation to higher service standards

6. Tourism / Charter Network (2020's – 2030's)

7. Ultimate Network Expansion (2030's and 2040's)

Description: Extend passenger rail networks beyond the core networks over time including extensions from Timaru - Dunedin and Invercargill, Hawkes Bay (Napier), New Plymouth and perhaps Northland and Rotorua. Bi-Mode rolling stock would be required

Current Status: None of these services exist but over half of them existed up to to 2001. infrastructure standards fallen since this time and effectively now just a freight only network

Selected Challenges: Selecting rolling stock, enhanced maintenance/stabling facilities, signalling upgrades from TWC, line speed has slipped to slower Freight only speeds, additional crossing loops / upgraded stations required, Track condition, non commercial funding sources

Interventions required: Freight corridor upgrades, upgraded and new Railway station enhanced signalling, possible crossing loops, track quality improvements for network speed upgrades to 90 - 110kph. Bi-Mode rolling stock, funding/delivery model

8. Heritage Operation (2020's & Beyond)

Description: Enablement funding to preserve selected New Zealand's Rail heritage fleet to run. Set up a contestable funding mechanism for sustaining capital for heritage lines of unique national significance such as Taieri Gorge Rail (DR), Bay Of Islands Scenic Railway, GVR, Kingston Flyer etc

Current Status: Dunedin Railways services mostly suspended, Kingston Flyer re-establishing, other operators find it challenging to keep rolling stock able to meet Main Line access standards so risk of loosing operations over time

Selected Challenges: Heritage Lines eg OCB falling into disrepair due to lack of investment and asset life expiry, volunteer operating models, safety operating concerns for heritage rolling stock access on national network, likely main line steam running will not occur in future if not given attention

Interventions required: Funding source established to recognise cultural significance of NZ's rail heritage. Could be used for asset refurbishment by bidding process in partnership with regional / local body agencies that see value e.g. Dunedin City support *Dunedin Railways*. This is done in Victoria, Australia and in other jurisdictions where operations have social or societal significance and bring Wider Economic Benefits eg. Puffing Billy.

New Emerging Rolling Stock – Bi/Tri-Mode

(VLine (Victoria) VLocity, Etihad Rail, DB/Siemens and Wink/Stadler)

Key Investments Summary For Regional Rail

- Infrastructure Civil Works eg track speed upgrades (top, line, level, curve easements, level crossings, deviations), line classifications 90Kph, 110 Kph, 130 Kph, 160 Kph?? Average speed more important though than top speeds
- Signalling upgrades eg ETCS, CBTC, line capacity enhancements
- New and upgraded stations – getting platform heights consistent, national standards
- Rolling Stock selection as much as possible to national standards with regional adaptation as required eg, Electrification, EMU, DMU, Bi/Tri Mode new fuel technologies
- Stabling facilities for interpeak and overnight – often quite difficult
- Maintenance facilities (heavy and light and servicing at strategic locations enhancing regions)
- Last Mile solutions for door to door travel – autonomous vehicles, Mobility as a Service
- Other things – simulators, new control centres, national integrated ticketing (Tap & ride)
- NZ Rail Academy - rebuild rail & public transport knowledge, prof development

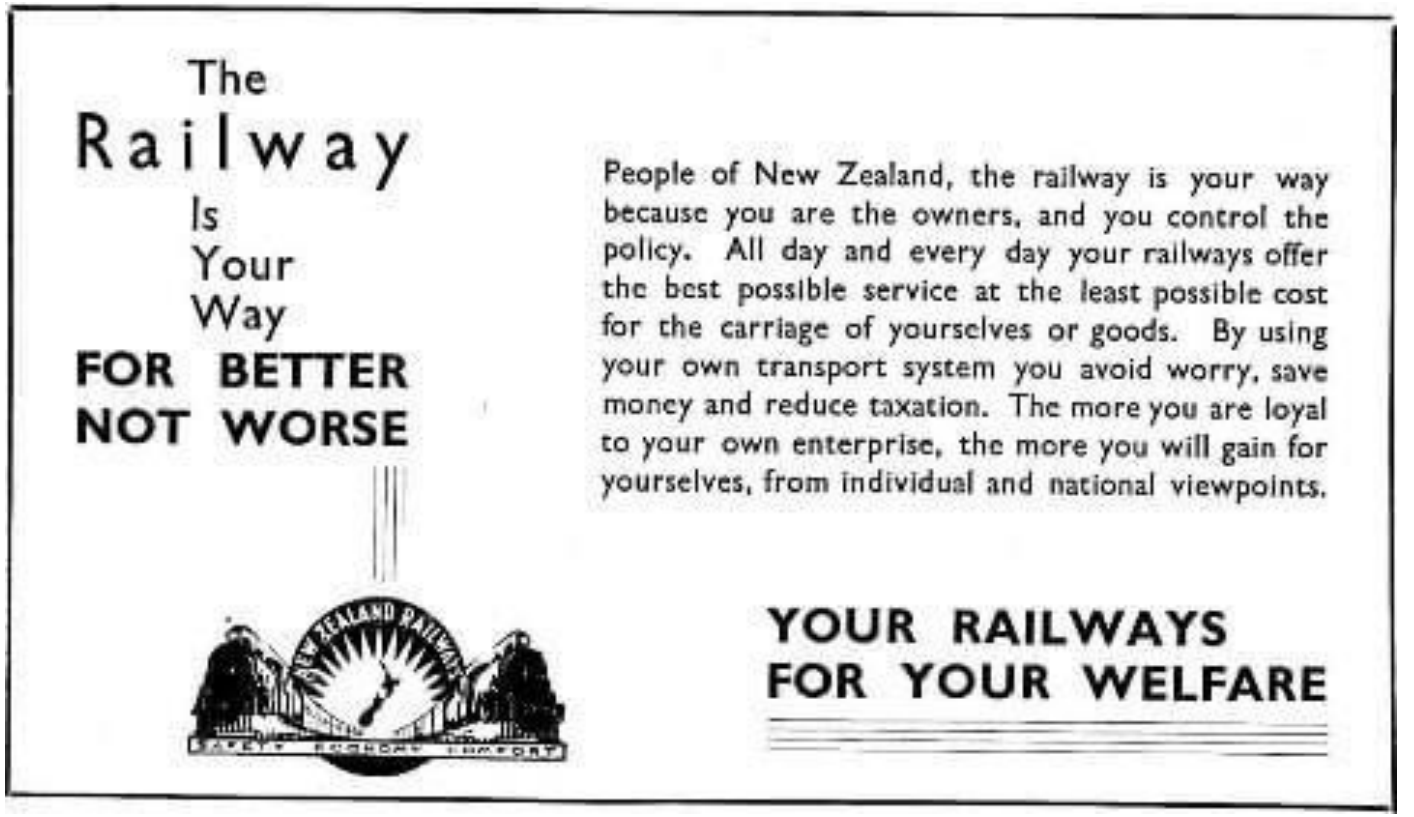
Key Barriers/Challenges Investments - Summary

- Auckland Network congestion post CRL – solution infill signalling, ETCS Level 2, Level Crossing eliminations, Third and Fourth Mains, New Auckland Terminus or run via alternative routes through Auckland to NIMT – Auckland Rail PBC addressing this
- Wellington network Congestion – move to ETCS / CBTC
- East Coast Main Trunk Congestion eg Kaimai Tunnel, single track, Tauranga entry
- Current focus On Freight network standards rather than passenger in regions
- Lack of integrated National Public Transport Planning
- Getting the numbers right for forecasting demand for Transport – current, latent, induced, managed
- Funding sources and delivery timeframes – international partners?
- Non partisan political support / consensus building to avoid political football of rail from the past
- Rail and PT industry delivery / reform / accountability / value for money
- Rail industry delivery / knowledge capability - Academy of Rail / PT in NZ?
- Other public transport integration / connections like Buses (InterCity) for connecting to non rail served regions to build true National Public Transport network

Summary

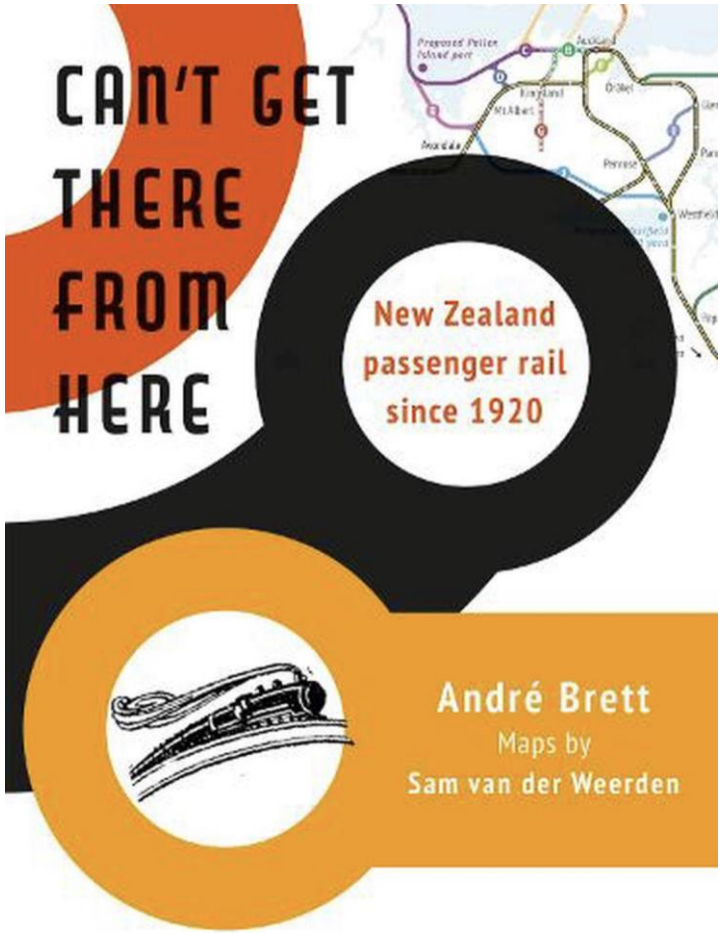
- National Public Transport Functions at a national level need improving and integrating
- Staged improvements over 10 to 30 years but with eye on Vision of continuous build up – **Golden Triangle** first followed by Lower North Island
- Regional Involvement critical to keep planning attuned to local needs but with nationwide lens that is needed to **Connect Communities nationwide**
- A compelling case for all stakeholders for approval of funding and delivery is required. Whilst this maybe a 10 – 30 year plus vision there is no better time to start than now.
- Funding regime e.g. Value Capture, TOD's, NZLTF, overseas funding partners, population growth, capital release from less private car ownership model, Community based partnerships (Co Ops)
- Passenger Rail isn't needed on all lines – public buses for many routes – Demand forecasting
- Rails key advantages should be leveraged off e.g. More direct routes, faster corridors, key population corridors flows, average speed more important than top speed
- Various delivery models incl. franchising, concessions, national operator like VLIne
- Not just Here & Now – to think outside box – Ambitions and new thinking

NZ Railways Is Your Railway!



Let's Do This New Zealand!

Further Reading:



Recent and historical documents on the performance of New Zealand Railways, including the Tarakin Global report on “Making Rail Work” can be found at the Heriot-Edievale Limited website:

https://www.heriot-edievale.com/resources-and-reports

For further recommended reading on the history and politics of New Zealand’s Passenger railways:

https://www.otago.ac.nz/press/books/otago830586.html

QUESTIONS?

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Fast Tracking To Our Future

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