

TRANSPORTATION CONFERENCE 2026 BUILDING BRT THROUGH A SCALABLE NETWORK FOR HAMILTON: REFRESHING THE HWMSP PROGRAMME BUSINESS CASE (PBC): PRACTICE PAPER

(This paper has not been peer reviewed)

Abstract

Since the successful delivery of the 2022 PBC by Future Proof, there have been a series of contextual changes and decisions made, including a new GPS, a new fast track process and the designation of the Hamilton Southern Links as a Road of National Significance.

HCC has developed a structured sequence of projects to guide development of a resilient, scalable Hamilton BRT network supported by the refreshed PBC. The intent is that the PBC refresh will be a clear and easily understood 'strategy' for a broad audience.

The refresh of the Hamilton – Waikato Metro Spatial Plan (HWMSP) Programme Business Case (PBC) builds on completed/ongoing initiatives including the BRT Proof of Concept, IAF Anglesea Street project, and Park & Ride investigation and a Southern Links public transport strategy for revocation of elements of the state highway network. Early works look to corridor infrastructure upgrades and implementation of dedicated bus lanes, intersection priority, new interchanges, and Park & Ride facilities at Te Rapa North, Ruakura, Peacocke/Airport.

Protection of corridors, future interchanges and depot sites in northern, eastern and southern corridors are critical to the phased BRT development and the transition from conventional buses to dedicated lanes and intersection priority, culminating in fully separated BRT corridors.

Integration with regional networks: and connection of high frequency and BRT services with regional rail (Te Huia) and frequent bus routes, as well as the planning framework outcomes will aid the refresh to align with land-use planning to ensure long-term resilience and accommodate growth through 2048+.

Introduction

The Hamilton-Waikato Metropolitan Spatial Plan (HWMSP) Programme Business Case (PBC) refresh builds upon the 2022 Future Proof transport framework. Since then, shifts in policy direction, a new Government Policy Statement (GPS), and designation of Hamilton Southern Links as a Road of National Significance have reshaped the strategic context. The refresh focuses on maximising existing network capacity and ensuring resilience while transitioning towards a Bus Rapid Transit (BRT) system.

The HWMSP case for change (Pre-Transport PBC)



Figure 1 - Source: Future Proof Metro spatial plan

The form and function of the transport network in its role of moving people and goods and shaping land use plays a significant role in delivering on each of the transformational moves. Building upon the transformational moves the HWMSP plan identifies the following 'key moves' associated with land use and transport:

- **Key move one:** A place-shaping integrated rapid public transport network linking major growth centres (Horotiu, Rotokauri/Te Rapa, Frankton, the central city area and Ruakura)
- **Key move two:** An appropriately scaled freight and movement road network providing convenient and reliable access for the region's economic activity hubs
- **Key move three:** An active mode network that improves the health and wellbeing of people, communities, and the environment.

The spatial directives and 'key moves' set a strategic direction for the metro spatial area to support the overarching outcomes of the HWMSP. This PBC seeks to investigate and refine the recommendations of the HWMSP and the Future Proof Strategy (FPS) to give effect to the transport outcomes sought. Through the problem definition process, this business case has identified the following problems.

- **Problem 1:** Poor alternatives to private vehicles create high car dependence, traffic centric design and congestion resulting in reduced access and safety for people and efficiency of freight.
- **Problem 2:** The transport networks do not support compact urban form resulting in worsening environmental, health, wellbeing and housing outcomes.
- **Problem 3:** The transport networks and Metro Spatial Plan (MSP) land use will result in worsening climate change.
- **Problem 4:** Lack of transport choice and dispersed land use will result in worsening equity in access to opportunities.

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The recommended PBC programme

The Metro Spatial Plan Background 2019-20 Future Proof Transformational Moves embedded the need for “A radical transport shift to a multi-modal transport network shaped around where and how communities will grow”. The recommended programme of the PBC comprises of a series of multi-modal elements including:

1. **Developed rapid transit network**
 - Roll out new bus services, priority measures and lanes from 2025.
 - Build BRT corridors and integrate them with frequent bus routes.
 - Protect key routes for future land acquisition.
2. **Expanded active modes and inclusive access**
 - Establish a “City of 20-minute neighbourhoods” to improve accessibility & transport equity.
 - Create an integrated walking, cycling and micromobility network supporting first- and last-mile public transport connections.
3. **Land-use intensification**
 - Enable higher-density and affordable housing along transport corridors and improve network safety.
 - Align with FPS strategy to support thriving, healthy, accessible communities.
4. **Freight access**
 - Shift freight from road to rail and develop local distribution hubs; provide short- to medium-term freight and bus lanes on key corridors.
 - Use Park & Ride to support initial patronage growth, with future potential for conversion to TODs.
5. **Staging and sequencing**
 - Align long-term outcomes with current PT and active-mode initiatives.
 - Accelerate implementation of the rapid transit corridor, moving toward dedicated rights-of-way within 10–20 years from 2025.

	YEARS 1 - 3	YEARS 3 - 10	YEARS 10 - 15	YEARS 15 - 20	YEARS 20 - 50+
Infrastructure and operations	PT Operations Span, frequency, vehicle type Bus service 19 hour (12 hours peak) Peak: 15 min Off-peak: 20 min	Bus service + priority 19 hour (12 hours peak) Peak: 10 min Off-peak: 15 min	BRT (RT1) 24 hour (19 hours peak) Peak: 5 min Off-peak: 15 min	BRT (RT1, RT2) 24 hour (19 hours peak) Peak: 5 min Off-peak: 15 min	BRT (RT1, 2, 3, 4) 24 hour (19 hours peak) Peak: 3 - 5 min Off-peak: 10 min
Infrastructure	Bus Priority	Bus Priority	BRT	BRT	BRT
PT Performance					
Patronage (AM peak/week/hour)		930	1450	1650	2250
• Airport to Hamilton	-	650	1000	1150	1550
• Te Awa to Hamilton		1400	2150	2500	3350
• Hamilton to Ruakura					
PT Travel Time (savings compared with general traffic)					
• Airport to Hamilton	23 min	22 min (-1 min)	22 min (-3 min)	22 min (-6 min)	22 min (-10 min)
• Airport to Ruakura	19 min	10 min (-9 min)	10 min (-13 min)	10 min (-17 min)	10 min (-22 min)
PT Reliability	Low	Medium	High	High	High
Micro-mobility		10% of cycle network	40% of cycle network	70% of cycle network	100% of cycle network
Micro-mobility network	Early implementation	• Biking and micro-mobility 10 year programme • Develop city centre traffic circulation plan and use traffic neighbourhoods • Facilitate safe and easy active mode access to stations	• Extend cross city connections to more peripheral centres and growth nodes – Rotokauri, Dinsdale, Rotokauri, Pearlandale and SO • Begin to fill out network with build-out of cross city connections, community links and local links • Improve Te Awa River Ride cycle path to highlandline and Cambridge	• Active mode network in town centres and growth nodes • Continue build-out of cross city connections, community links and local links	• Complete build-out of cross city connections, community links and local links

1 Figure 2 - Source: Aurecon

1 Developed between 2021 and mid 2023, the success is evidenced by the approvals the (FPIC) governance group and the Waka Kotahi board of all cases within the programme. At the June 16th 2023 FPIC meeting, attended by Ministers Wood and Woods, feedback was received from the Future Proof Programme Manager that: “The FPIC members spoke extremely positively about all your work and asked me to pass on their appreciation. They have definitely picked up on the message that implementation is going to require change to how we work as a region. Both Cr Macpherson and Cr Strange spoke in support of the need for a new joined up management model for transport delivery in the MSP area which is really positive for the next phase of our work”

Timeline evolution of the programme development

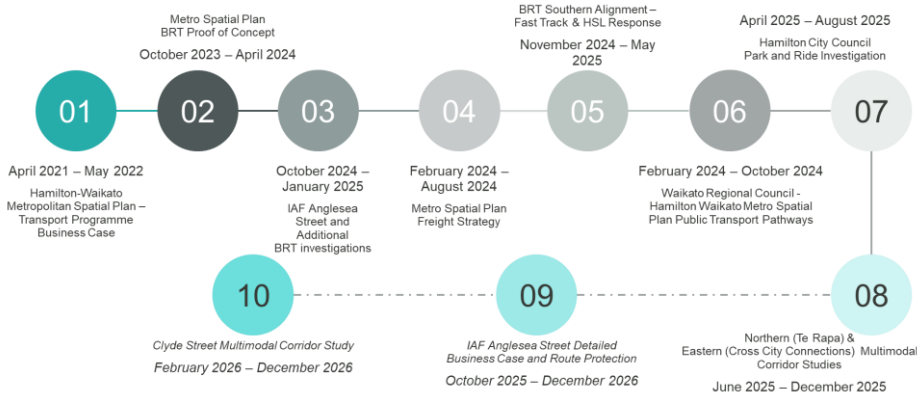


Figure 3 - Source: Aurecon

The “Counterfactual” scenario best reflects business as usual

The counterfactual (future reference case) includes major road, bus, active-mode upgrades and projected land-use growth over 30 years. While it performs better than today’s “do-nothing” scenario, it still falls short of MSP objectives, with:

- Worsening congestion at river crossings, key arterials and approaches to city and regional centres.
- Rising emissions from growing private-vehicle and freight use.
- Further decline in PT journey times and reliability, with little change in mode share.
- Private vehicles remaining the dominant transport mode.
- Persistent parking shortages and more vehicle circulation in central areas.

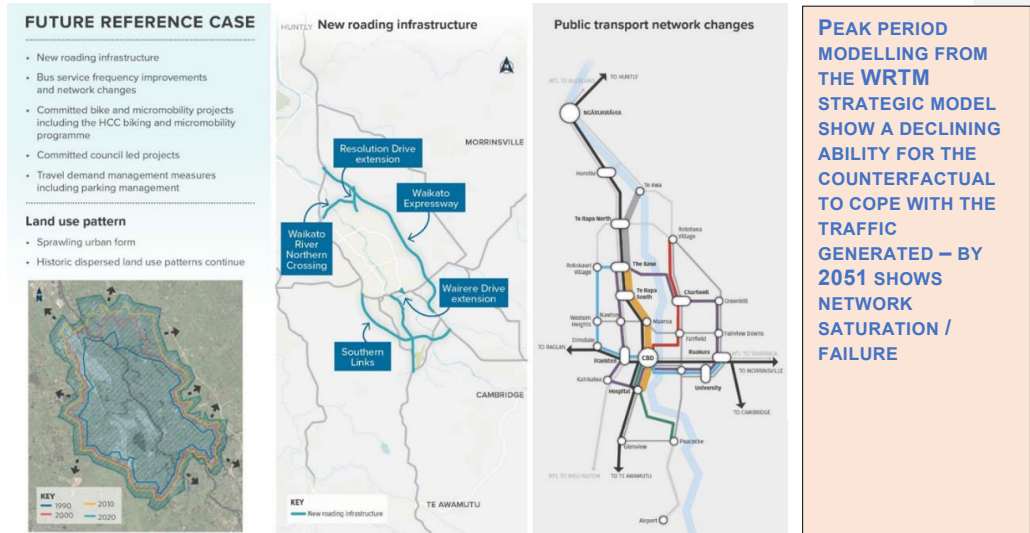


Figure 4 - Source: Aurecon – Transport PBC counterfactual case

HWMS PBC Rapid Transit – preferred routes

To support the changes being developed through the Regional Public Transport Plan (2022-2032), the PBC proposed four rapid transit routes, each progressing from standard bus services to frequent services with priority, ultimately achieving full BRT. The diagram below illustrates the proposed routes, and it is noted that each could be staged and sequenced to deliver outcomes specific to the city context as follows:

- RT1 North (Te Rapa Road) was identified as the network’s anchor, enabling intensification along the corridor and supporting growth in areas like Rotokauri.
- **Priority sequencing:** RT1 North first, followed by RT1 South and RT1 East (Ruakura–University).
- Long-term protection of the corridor, interchanges and depot sites is critical.
- The BRT corridors would be supported by a frequent bus network connecting key suburbs.

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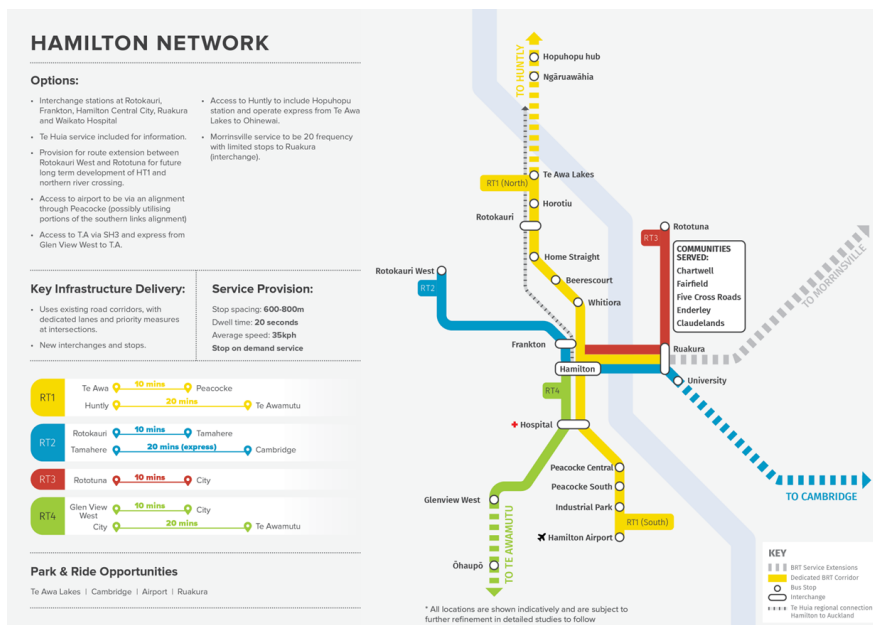


Figure 5 - Source: Aurecon

BRT Proof of Concept – Service Planning

The BRT Proof of Concept study (published May 2024) provided technical recommendations on a form and function concept for the **long-term (30 years)** Hamilton City BRT design, building on from the HWMSP PBC. A summary of the service planning recommendations is provided below:

- The BRT Proof of Concept identified three key corridors.
- A **northern BRT line** along Te Rapa Road to Te Awa Lakes would serve employment areas and support intensification, including growth at Rotokauri (Lines 1 & 2).
- A **southern line** would connect the central city to the Hospital, Peacocke and Hamilton Airport (Line 3).
- An **eastern line** would link the central city with Ruakura’s employment and residential areas and the University of Waikato (Line 1).

All lines converge on Anglesea Street, the proposed “Central City Rapid Transit Spine,” delivering dedicated priority and a high-frequency PT corridor through the CBD.

- This work confirmed Anglesea Street as the city’s core public transport corridor and interchange.

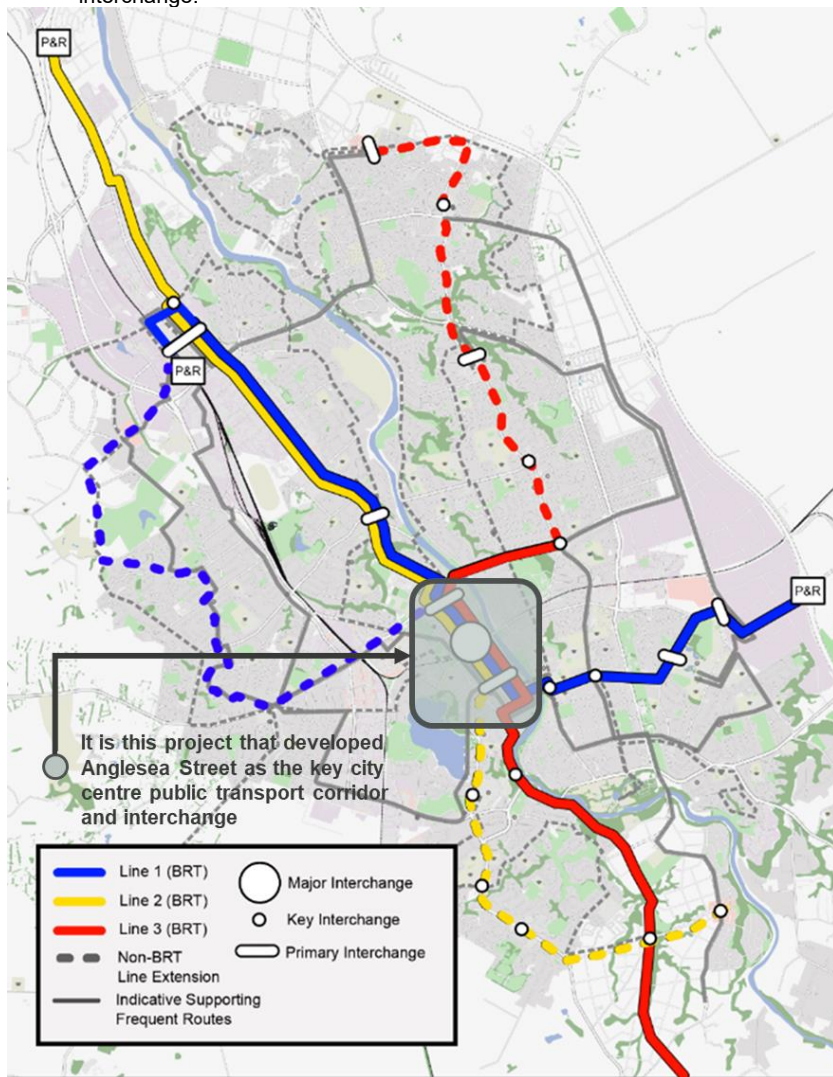


Figure 6 - Source: Aurecon – BRT Proof of Concept

Anglesea Street – Bus Rapid Transit (BRT) Corridor

Following the previous network BRT proof of concept, the city centre and Anglesea Street corridor was assessed to understand HCC’s long-term aspiration for a dedicated public transport corridor. The Anglesea Street bus operations were therefore refined to advance the “Central Spine” concept and create a coordinated city-centre outcome, which included some key changes to the Waikato

Regional Council planned routes:

- A through-routing and far-side termination model was proposed to minimise out-of-service circulation.
- Under this model, northern services terminate and lay over at the southern station, and vice versa.
- Only western (14 bph) and eastern (4 bph) routes would enter the Hamilton Transport Centre to terminate.
- By 2038, Anglesea Street is expected to carry 48 bph each way—the highest frequency corridor in Hamilton.
- A fully separated, centre-running urban BRT was recommended to support these volumes.
- The IAF project assessed staging and sequencing for both water and BRT infrastructure to identify the optimal lead.

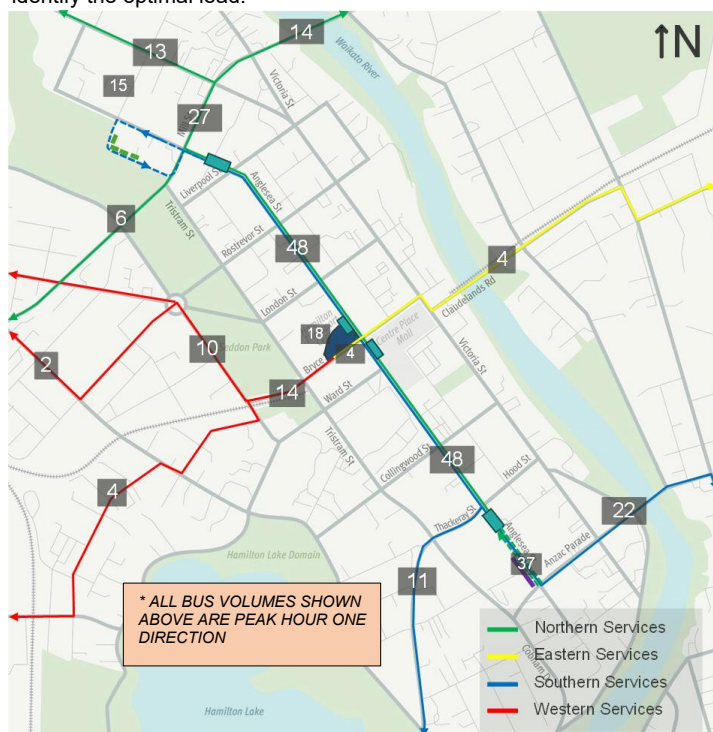


Figure 7 - Source: Aurecon – Anglesea Street

BRT investigation

Hamilton City Potential Park & Ride Investigation

This investigation examines the potential role of Park & Ride in supporting Hamilton City Council's future rapid and frequent public transport network. The primary focus is on identifying opportunities to link potential Park & Ride facilities with Hamilton's planned Rapid Transit Network (RTN) and Bus Rapid Transit (BRT) corridors, building on the BRT proof-of-concept work undertaken to date.

The proposed approach aligns with Hamilton City Council's broader transport and sustainability objectives set out in Access Hamilton, Our Climate Future, and the Hamilton–Waikato Metro Spatial Plan. By enabling a shift from private vehicles to public transport, Park & Ride has the potential to reduce congestion, improve travel choice and reliability, and support emissions

reduction by intercepting car trips at the city edge and connecting users to the planned BRT network. This investigation also explores longer-term opportunities, including integration with the frequent public transport network and the use of complementary parking management measures to manage localised parking pressures.

- Five Park & Ride sites have been identified—four in Hamilton and one in Cambridge—aligned with the extents of the three proposed BRT corridors.
- Early delivery must determine the necessary parking capacity to intercept car trips, ease arterial congestion and support mode shift.
- Successful implementation depends on integration with active modes, Rotokauri rail, and surrounding land use, delivered through a three-phase programme.

Phase	Phase 1	Phase 2	Phase 3
Programme Years	Up to 2035	2035-2045	Beyond 2045
Park & Ride Facilities	1. Rotokauri/The Base 2. Ruakura	3. Te Awa 4. Mystery Creek / Hamilton Airport	5. Cambridge (In association with Waipa DC, seek opportunities to bring this into phase 2)
BRT Link / Connection	BRT Line 1	BRT Line 2 & Line 3	Future Cambridge connection to BRT Line 1

Figure 8 - Source: Aurecon – P&R phase investigation

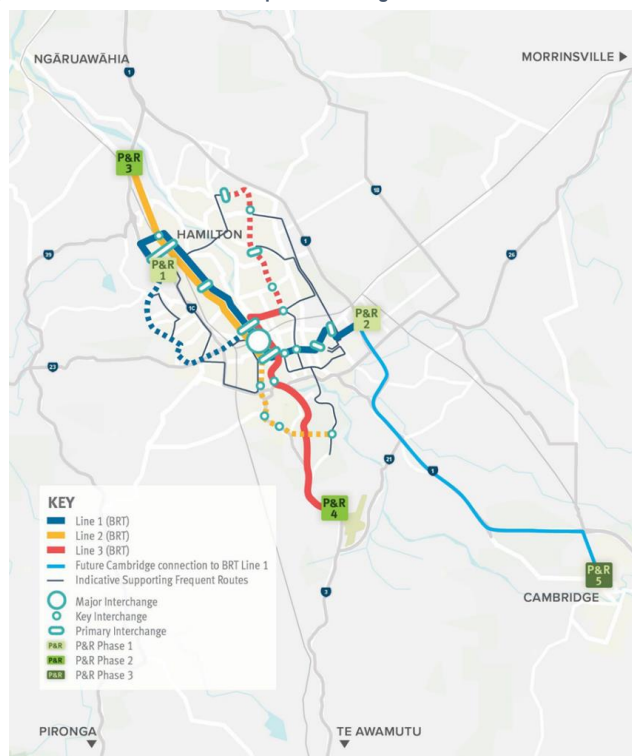


Figure 9 - Source: Aurecon – P&R site investigation

Integration of the BRT / frequent bus services and Hamilton Airport

This work investigates the potential for a Park & Ride facility at Hamilton Airport and the associated public transport connections through Peacocke and via the Hamilton Southern Links. The investigation considers how a strategically located Park & Ride could support access to Hamilton's growing southern catchments by enabling a shift from private vehicle trips to high-quality bus services. It assesses the role of the existing and planned bus network in providing reliable, legible and efficient connections to the city, key employment areas and future rapid transit corridors, while aligning with wider transport, growth and emissions reduction objectives for Hamilton.

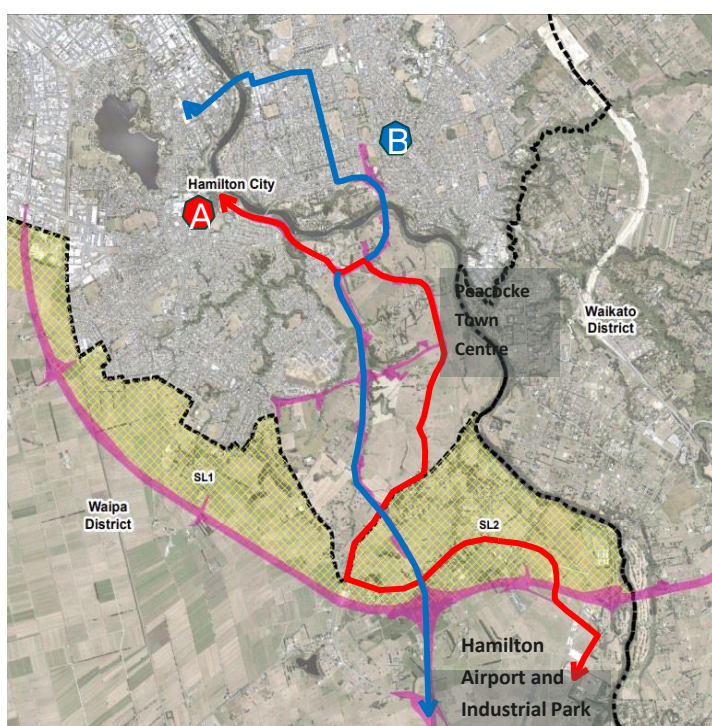


Figure 10 - Source: Aurecon – HSL and Peacocke corridor investigation

- **Option A (Cobham Drive):** Connects the town centre to southern employment areas including the airport and industrial zone, but limited setbacks in Peacocke may constrain high-quality, priority-based PT without a purpose-built alignment.
- **Option B (Waiwera Drive):** Links the city centre to the airport via the new north–south connection, though further work is needed to integrate land use and PT due to the adjacent gully system.
- This option leverages the HCC north–south corridor within the Hamilton Southern Links network.
- Option B's success depends on connecting communities across the north–south link and parallel gully systems.
- This has been achieved in similar projects overcoming infrastructure or natural barriers.

- Numerous pedestrian, cycle, and micromobility bridges across Peacocke would enable these connections.
- All options provide city–airport access, with the airport hub extending services south to Te Awamutu.
- Proposed station locations optimise access to mixed land uses, including residential, commercial, employment, and activity centres.

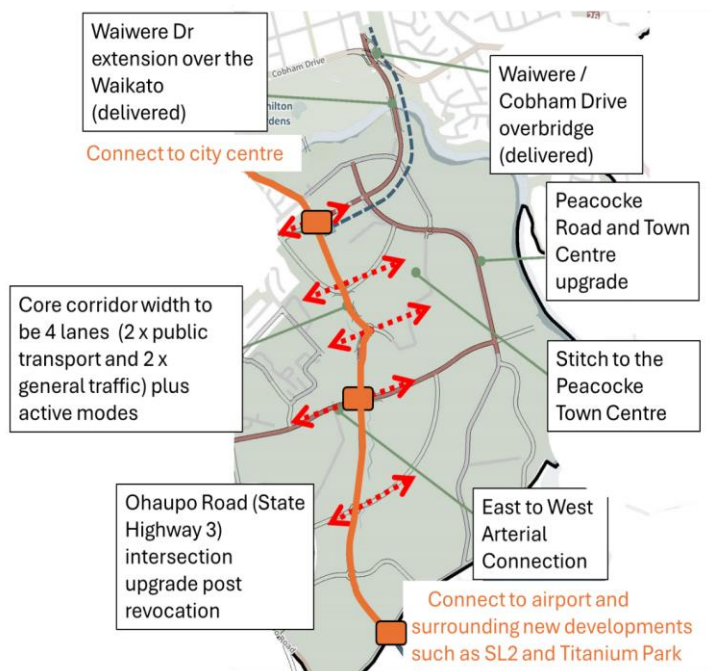


Figure 11 - Source: Aurecon – Challenges for the north south connection through Peacocke

Northern Corridor Multi-modal Study

The purpose of this study, commissioned in 2025, was to provide a comprehensive investigation and assessment of the Northern Corridor, or Te Rapa Road Bus Rapid Transit (BRT) corridor, a critical segment of Hamilton’s future public transport network as outlined in the 2022 Hamilton Waikato Metro Spatial Plan Programme Business Case.

This report aims to support Hamilton City Council by delivering detailed transport planning, traffic engineering, concept design, and economic analysis to inform the development and implementation of both interim and final BRT route options along the Northern Corridor, along Te Rapa Road and Ulster Street between the Te Awa Lakes development and Anglesea Street/Mill Street intersection.

The investigation will integrate previous BRT, freight, and public transport network studies to assess the corridor’s needs comprehensively, considering all users including active modes, freight, and private vehicles. It will evaluate network changes and frequency improvements to bus performance in the short term and develop a final route alignment designed to meet future demand by 2038, aligned with the PT Pathways network.

Commented [S24]: We aren't proposing any interim improvements anymore technically. Propose to remove this line.

- The Northern Corridor Multi-Modal study (Line 2 from the BRT Proof-of-Concept) is underway (Sept 2025), overlaying the 2038 link network from the Public Transport Pathways Report.
- Key routes: C Comet, M Meteor, 1 Pukete, 7 Northern Link, 8 Southern Link, 21 Northern Connector.
- Bus volumes are low in sections 1–2 (Comet, Northern Connector) but much higher in sections 3–5, especially near The Base shopping centre (Church Road to Wairere Drive).

Increasing priority →





	GPS Signal Prioritisation	Bus queue jump	Transit Lanes	Bus / Freight Lane	BRT (Bus only)
Options	SCATS GPS Prioritisation No physical changes to road environment				
Volumes		• 6 + buses per hour	• 15 + buses per hour	• 20+ buses per hour • Strategic freight corridor or high freight volumes	• 25+ buses per hour
Lane Width	No width requirements	Slip lane available at signalised intersection	• Less ideal – 3.4 m (kerbside, no cycle use, slower speed environment) • In between – 3.5 m to 4.3 m (no cycle use) • Wide – 4.4 m (if cycle use is expected, or part time use for parking)		

Figure 12 - Source: Aurecon – Te Rapa Road Needs Assessment Options

Section	Land Use	Public Transport Volumes (buses per hour)			Freight	Active Modes	General Traffic Performance	Indicative Priority Modes	Opportunity for Priority Provision	
		2025	2031	2038						
1	Te Awa Lakes to McKee Street	Te Rapa North Industrial Zone	3	8	9	High	No formal infrastructure	Good	Bus / Freight	Low Medium High
2	McKee Street to Church Road	Industrial	3	8	9	High	No formal infrastructure	Good	Bus / Freight	
3	Church Road to The Base Parade	Industrial / Business	3	20	20	Medium	Existing infrastructure	Moderate	Bus, Freight, Active Modes	
	The Base Parade to Wairere Drive	Business	10	26	31					
4	Wairere Drive to Bryant Road	Industrial	9	16	19	Low	Existing infrastructure	Moderate	Bus, Active Modes	
5	Bryant Road to Garnett Avenue	Industrial	7	16	19					
5	Garnett Avenue to Beerescourt Road	Residential – High density	7	16	19	Low	Existing infrastructure	Good	Bus, Active Modes	
	Beerescourt Road to Maeroa Road	Residential – High density	7	20	23			Poor	Bus, Active Modes	
	Maeroa Road to Anglesea Street Connection	Residential – High and medium density	8	16	19			Poor		

Figure 13 - Source: Aurecon – Te Rapa Road Needs Assessment – public transport outcomes

The needs assessment identified the future needs. The assessment used both existing and future:

- Modal demands (buses per hour, freight per hour etc.)
- Infrastructure provisions (bus and special vehicle lanes, cycle lanes, corridor widths)
- Land use (existing i.e. residential vs industrial areas + land use changes, e.g. PPC17 etc)

Northern Corridor BRT – Capacity of the corridor

For a comprehensive, and fundamentally unbiased, analysis to be carried out there needs to be an integrated approach to the needs of urban transport within the Te Rapa Road corridor, coupled with an understanding of the network needs for connection to the broader Hamilton network

In many cases this may be a combination of Public Transport (PT), Non-Motorised Transport (NMT), Intelligent Transport Systems (ITS) and the road infrastructure, operations, management and public transport service improvements to comprehensively address the urban transport problems including but absolutely not limited to congestion.

The analysis focuses on making public and non-motorised transport safer and more attractive; whilst trying to achieve the cost effectiveness for the user and the authority, and there are certain factors that will impact the mass transit mode requirements that range from Strategic goals and objectives (*Transport, Land use, Social, environment, economic etc*) to current and future general travel and any existing rapid transit market; to the future multi-modal transport network size, condition, performance and future land use patterns...offset against the financial resources, current and future needs.

- Bus and BRT on existing corridors, using road space reallocation and targeted new infrastructure, offer the most scalable and staged solutions for Hamilton and Waikato.
- Flexible corridor designs—kerbside or centre-running lanes—allow optimal land-use integration and BRT delivery.
- Previous network designs focused on improving accessibility around key areas: Rotokauri, Ruakura, Rototuna, Peacocke, R2 growth cells, and central Hamilton city intensification.

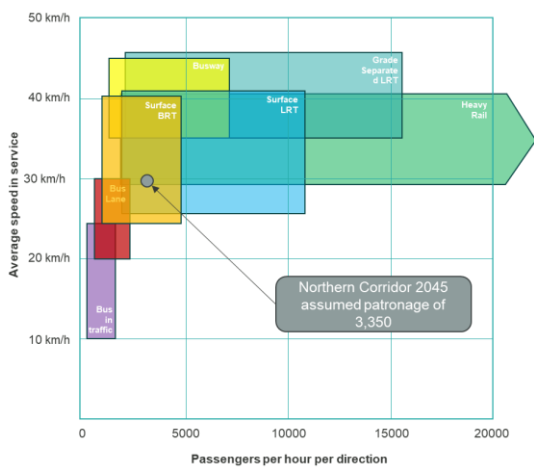


Figure 14 - Source: Aurecon – Te Rapa Road Corridor Assessment

Culmination of the PBC and subsequent assessment studies

This section summarises the culmination of the Programme Business Case (PBC) and subsequent corridor and network assessment studies undertaken to shape a coherent, deliverable future transport system for Hamilton and the wider sub-region. Together, this work establishes a shared regional vision for transport investment, confirms the role of rapid and frequent public transport in supporting growth, and provides a robust, evidence-based platform for future decision-making and delivery.

Commented [CG5]: This is just a bunch of bullet points? Doesn't really add to the story here?

The PBC process brought together central and local government partners to align on transport outcomes, land-use integration, and the sequencing of investment to support Hamilton's planned growth areas. Detailed corridor assessments have tested network performance, travel demand, and mode share opportunities, confirming where intervention is required to enable mode shift, improve accessibility, and manage congestion across the city's arterial network.

A core outcome of this work is the definition of a Rapid Transit Network (RTN), with Bus Rapid Transit (BRT) identified as the most scalable and adaptable solution for Hamilton's urban form. The Northern Corridor, centred on Te Rapa Road, has emerged as the linchpin of the RTN, while Anglesea Street has been confirmed as the central high-frequency spine through the City Centre, integrated with the Inner Access Fund (IAF) programme. Strategic Park & Ride locations have been identified to intercept car trips at the city edge, supporting public transport uptake and relieving pressure on key arterials.

The work also assesses southern connections to Hamilton Airport via Peacocke and the Hamilton Southern Links, alongside ongoing analysis of the Northern and Eastern Corridors to respond to growing bus demand and competing needs for freight and active modes. Collectively, this programme supports staged, flexible delivery aligned with growth, and positions the region for policy updates, funding decisions, and delivery planning through 2025–2026.

- **Regional Vision & Endorsement:** PBC unified transport vision and aligned stakeholders.
- **Evidence-Based Planning:** Corridor assessments supported mode shift, land-use integration, and investment priorities.
- **Rapid Transit Network:** BRT corridors defined, with Northern Corridor (Te Rapa Road) as the key linchpin.
- **Central Spine:** Anglesea Street confirmed as high-frequency BRT spine, integrated with IAF programme.
- **Park & Ride:** Five strategic sites identified to support mode shift and ease arterial congestion.
- **Southern Links:** Options assessed to connect City Centre to Airport, considering future SH3 changes.
- **Northern & Eastern Corridors:** Analysis underway to confirm growing bus demand and priority needs for bus, freight, and active modes.
- **Scalability & Flexibility:** Bus/BRT options confirmed as most adaptable for Hamilton's urban form.
- **Land Use Alignment:** Planning integrated with Rotokauri, Ruakura, Rototuna, Peacocke, and City Centre growth areas.
- **Staging & Sequencing:** Supports incremental delivery aligned with growth and demand.
- **Policy & Delivery Readiness:** Positions the region for policy updates, funding, and 2025–2026 delivery planning.

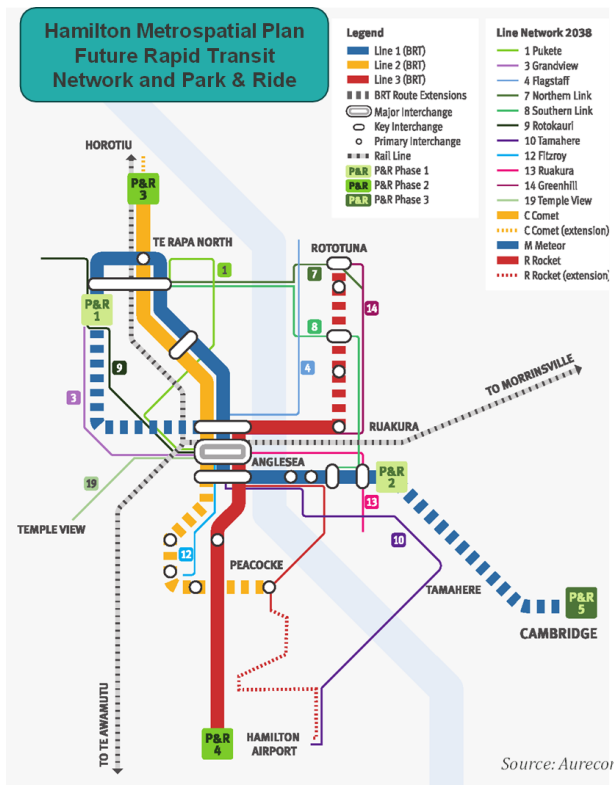


Figure 15 - Source: Aurecon – Te Rapa Road Future Integrated Network

The key outcomes for the body of work to date

- Public transport benefits are supported by strong ridership and post-PBC residential growth in Hamilton.
- MSP objectives are advanced through multimodal corridors, enabling further land-use intensification and connections to greenfield and brownfield sites beyond 2051.
- HCC is well positioned to co-develop funding and work programmes with IAF around utilities and land use.
- Integration of active modes with PT on key arterials is needed to improve accessibility near the city.
- Frequent services under the 2038 PT pathways support greenfield and brownfield links, with potential for expansion on Northern and Eastern BRT corridors.
- The city centre and Anglesea Street are critical to network delivery and must operate at full capacity by the mid-2030s, potentially requiring earlier IAF water infrastructure delivery.

Acknowledgements: The authors acknowledge the contributions of Hamilton City Council, WSP, Future Proof, and NZTA for their collaboration and technical inputs.