

# Building BRT through a scalable network for Hamilton: Refreshing the HWMSP Transport Programme Business Case (PBC)

Presented by:

Phil Haizelden (Hamilton City Council)

and

James Tinnion-Morgan (Aurecon)



# The HWMSP case for change (Pre-Transport PBC) - 2019

The plan should seek to **advance rapid transit, freight efficiency and active modes while addressing car dependence, poor urban form, climate impacts and inequitable access** through refined problem definition and transport-land-use integration.



Enhancing the health and wellbeing of the Waikato River in accordance with Te Ture Whaimana



Putting the Waikato River at the heart of planning



A radical transport shift to a multi-modal transport network



A vibrant metro core and lively metropolitan centres



A strong and productive economic corridor at the heart of the metro area



Thriving communities and neighbourhoods including quality, denser housing options



Growing and fostering water-wise communities

# The HWMSP Transport PBC Recommended Programme: 2021-2022



**1. Integrated bus network:** Deliver a range of services from a rapid transit system supported by new bus services, priority corridors and safeguarded routes to a regional and rural access programme.



**2. Active modes & access:** Expand active networks and 20-minute neighbourhoods to maximise equitable, accessible first- and last-mile connections.



**3. Land-use intensification:** Enable compact, affordable, safe communities through intensified development around transport corridors aligned with FPS outcomes.



**4. Freight access:** Shift freight toward rail and develop distribution hubs while improving short-term arterial freight efficiency.



**5. Park & Ride:** Use Park & Ride to grow demand now, with long-term transition to transit-oriented development.



**6. Staging & sequencing:** Align staging with multimodal initiatives and accelerate rapid transit corridors toward dedicated rights-of-way within 10–20 years.

# The “Counterfactual” scenario best reflects business as usual

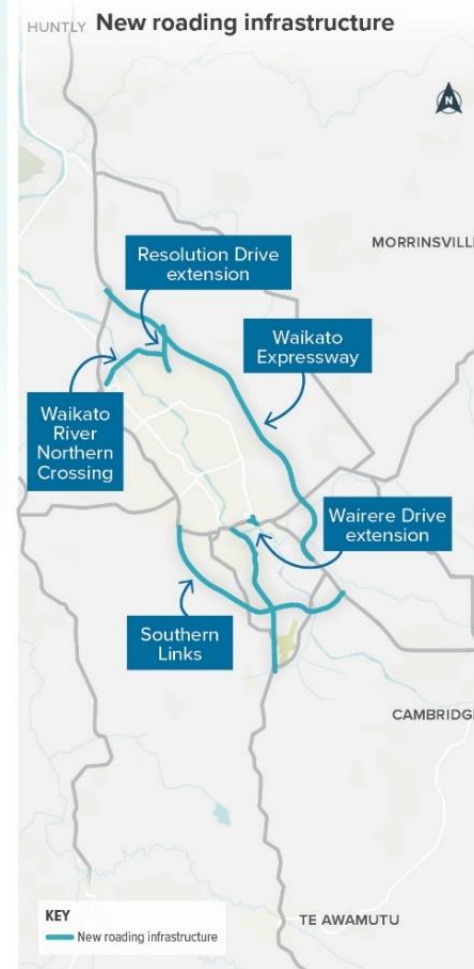
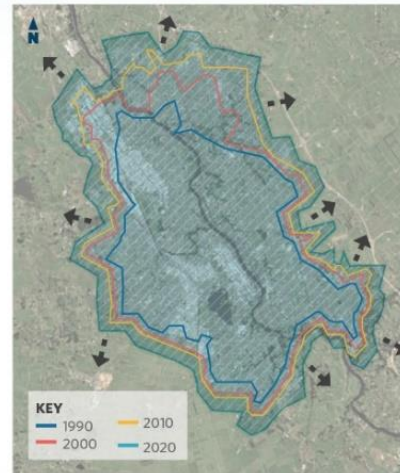
- The counterfactual future reference case includes major road, bus, and active mode upgrades, along with forecast land-use growth over the next 30 years.
- While it performs slightly better than a ‘do-nothing’ scenario, it still fails to meet MSP objectives.
- **Congestion continues to worsen at river crossings, key intersections, and approaches to Hamilton and regional centres.**
- **Emissions from private vehicles and freight rise annually.**
- **Public transport journey times and reliability decline, with minimal mode-shift.**
- **Parking pressures persist, increasing vehicle circulation in central areas.**

## FUTURE REFERENCE CASE

- New roading infrastructure
- Bus service frequency improvements and network changes
- Committed bike and micromobility projects including the HCC biking and micromobility programme
- Committed council led projects
- Travel demand management measures including parking management

## Land use pattern

- Sprawling urban form
- Historic dispersed land use patterns continue



Source: Aurecon

# The concept of scalability and responding to growth

- The PBC proposed **four rapid transit (RT) routes**. Each would gradually upgrade from normal bus services to frequent buses with bus lanes and signal priority then **Bus Rapid Transit (BRT)**, which provides faster, more reliable, high-capacity buses.
- RT1 North (Ulster St / Te Rapa Rd)** identified as the key enabler for higher-density development along the route supporting existing growth areas (Rotokauri).
- Long-term protection** of corridors, interchanges, and depot sites was considered essential to support future RT/BRT delivery.
- The BRT network would be **supported by frequent local bus routes** connecting surrounding suburbs to rapid transit corridors.

## HAMILTON NETWORK

### Options:

- Interchange stations at Rotokauri, Frankton, Hamilton Central City, Ruakura and Waikato Hospital
- Te Huia service included for information.
- Provision for route extension between Rotokauri West and Rototuna for future long term development of HT1 and northern river crossing.
- Access to airport to be via an alignment through Peacocke (possibly utilising portions of the southern links alignment)
- Access to T.A via SH3 and express from Glen View West to T.A.
- Access to Huntly to include Hopuhopu station and operate express from Te Awa Lakes to Ohinewai.
- Morrinsville service to be 20 frequency with limited stops to Ruakura (interchange).

### Key Infrastructure Delivery:

- Uses existing road corridors, with dedicated lanes and priority measures at intersections.
- New interchanges and stops.

### Service Provision:

Stop spacing: 600-800m  
 Dwell time: 20 seconds  
 Average speed: 35kph  
 Stop on demand service

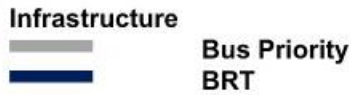



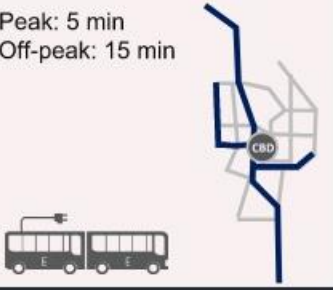
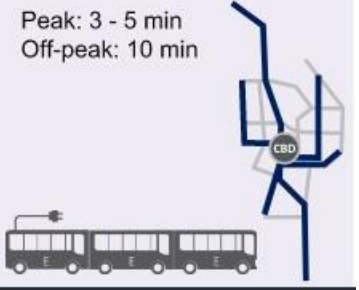
<b>RT1</b>	Te Awa	10 mins	Peacocke
	Huntly	20 mins	Te Awamutu
<b>RT2</b>	Rotokauri	10 mins	Tamahere
	Tamahere	20 mins (express)	Cambridge
<b>RT3</b>	Rototuna	10 mins	City
<b>RT4</b>	Glen View West	10 mins	City
	City	20 mins	Te Awamutu

### Park & Ride Opportunities

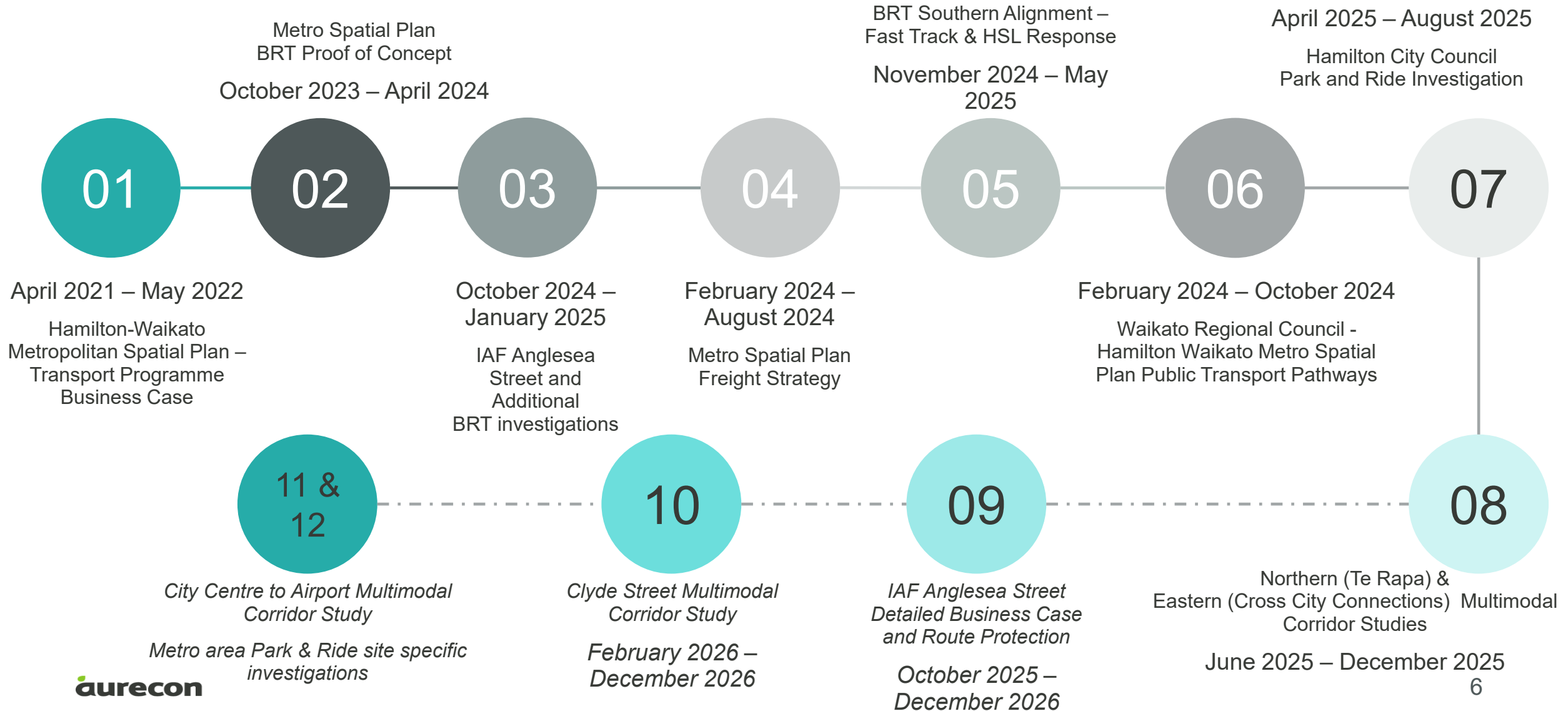
Te Awa Lakes | Cambridge | Airport | Ruakura



# HWMSP PBC – Developing a scalable network

	YEARS 1 - 3	YEARS 3 - 10	YEARS 10 - 15	YEARS 15 - 20	YEARS 20 - 50+	
Infrastructure and operations	<b>PT Operations</b> Span, frequency, vehicle type  <b>Infrastructure</b> 	<b>Bus service</b> 19 hour (12 hours peak)  Peak: 15 min Off-peak: 20 min  	<b>Bus service + priority</b> 19 hour (12 hours peak)  Peak: 10 min Off-peak: 15 min  	<b>BRT (RT1)</b> 24 hour (19 hours peak)  Peak: 5 min Off-peak: 15 min  	<b>BRT (RT1, RT2)</b> 24 hour (19 hours peak)  Peak: 5 min Off-peak: 15 min  	<b>BRT (RT1, 2, 3, 4)</b> 24 hour (19 hours peak)  Peak: 3 - 5 min Off-peak: 10 min  
	<b>Patronage</b> (AM peak/direction/hour) <ul style="list-style-type: none"> <li>Airport to Hamilton</li> <li>Te Awa to Hamilton</li> <li>Hamilton to Ruakura</li> </ul>	-	<b>930</b> <b>650</b> <b>1400</b>	<b>1450</b> <b>1000</b> <b>2150</b>	<b>1650</b> <b>1150</b> <b>2500</b>	<b>2250</b> <b>1550</b> <b>3350</b>
PT Performance	<b>PT Travel Time</b> (savings compared with general traffic) <ul style="list-style-type: none"> <li>Airport to Hamilton</li> <li>Hamilton to Ruakura</li> </ul>	<b>23 min</b> <b>19 min</b>	<b>22 min (-1 min)</b> <b>10 min (-9 min)</b>	<b>22 min (-3 min)</b> <b>10 min (-13 min)</b>	<b>22 min (-6 min)</b> <b>10 min (-17 min)</b>	<b>22 min (-10 min)</b> <b>10 min (-22 min)</b>
	<b>PT Reliability</b>	Low	Medium	High	High	High
Micro-mobility	<b>Micro-mobility network</b>  <b>Early implementation</b>	<b>10% of cycle network</b>  <ul style="list-style-type: none"> <li>Biking and micro-mobility 10 year programme</li> <li>Develop city centre traffic circulation plan and low traffic neighbourhoods</li> <li>Facilitate safe and easy active mode access to stations</li> </ul>	<b>40% of cycle network</b>  <ul style="list-style-type: none"> <li>Extend cross city connections to more peripheral centres and growth cells – Rototuna, Dinsdale, Rotokauri, Peacocke and R2.</li> <li>Begin to fill out network with build-out of cross city connections, community links and local links.</li> <li>Improve Te Awa River Ride cycle path to Ngāruawāhia and Cambridge.</li> </ul>	<b>70% of cycle network</b>  <ul style="list-style-type: none"> <li>Active mode network in town centres and growth cells</li> <li>Continue build-out of cross city connections, community links and local links</li> </ul>	<b>100% of cycle network</b>  <ul style="list-style-type: none"> <li>Complete build-out of cross city connections, community links and local links</li> </ul>	

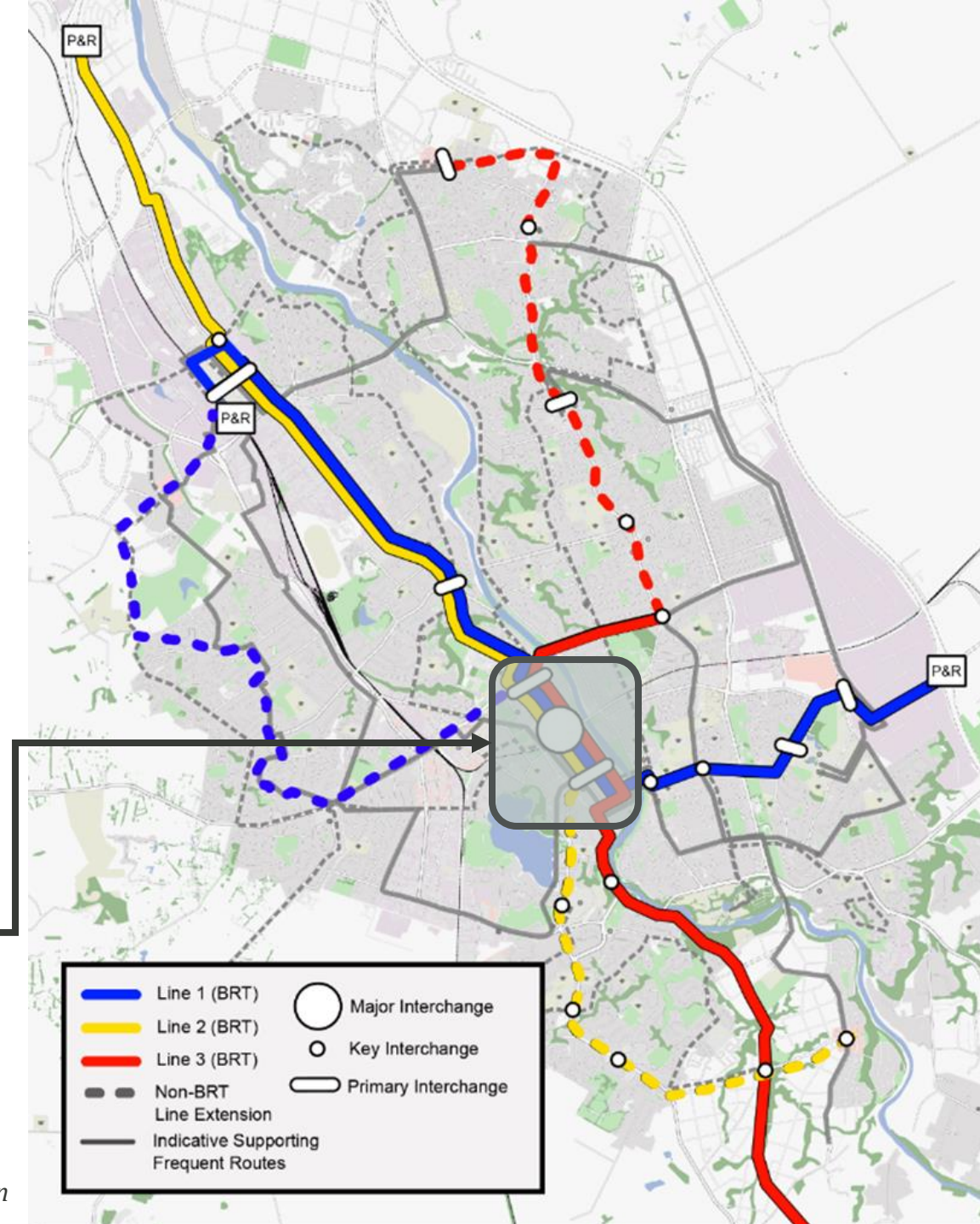
# Evolution of the PBC refresh



## BRT Proof of Concept – Service Plan

- Defined a **30-year BRT concept**, to guide Hamilton's long-term rapid transit network.
- **Three BRT corridors** serving key growth areas: Te Rapa/Te Awa Lakes (north), Hospital–Peacocke–Airport (south), and Ruakura–University (east).
- Enabled **intensification and improved access** along each corridor, supporting both existing urban areas and major greenfield developments.
- Established Anglesea Street as the **high-frequency central transit spine** for the city centre.

**It is this project that developed Anglesea Street as the key city centre public transport corridor and interchange**



## The city centre spine – Anglesea Street BRT

- Streamlined operations to strengthen **the BRT 'Central Spine'** and improve city-centre network efficiency.
- **Through-routing and a far-side termination model** were introduced to eliminate unnecessary out-of-service bus circulation.
- **By 2048, Anglesea Street will carry 48 buses per hour in each direction**, supported by a fully separated, centrally operated urban BRT corridor.
- This IAF project looked at **staging and sequencing of the water investment, and the BRT infrastructure** – and which would be best suited to lead

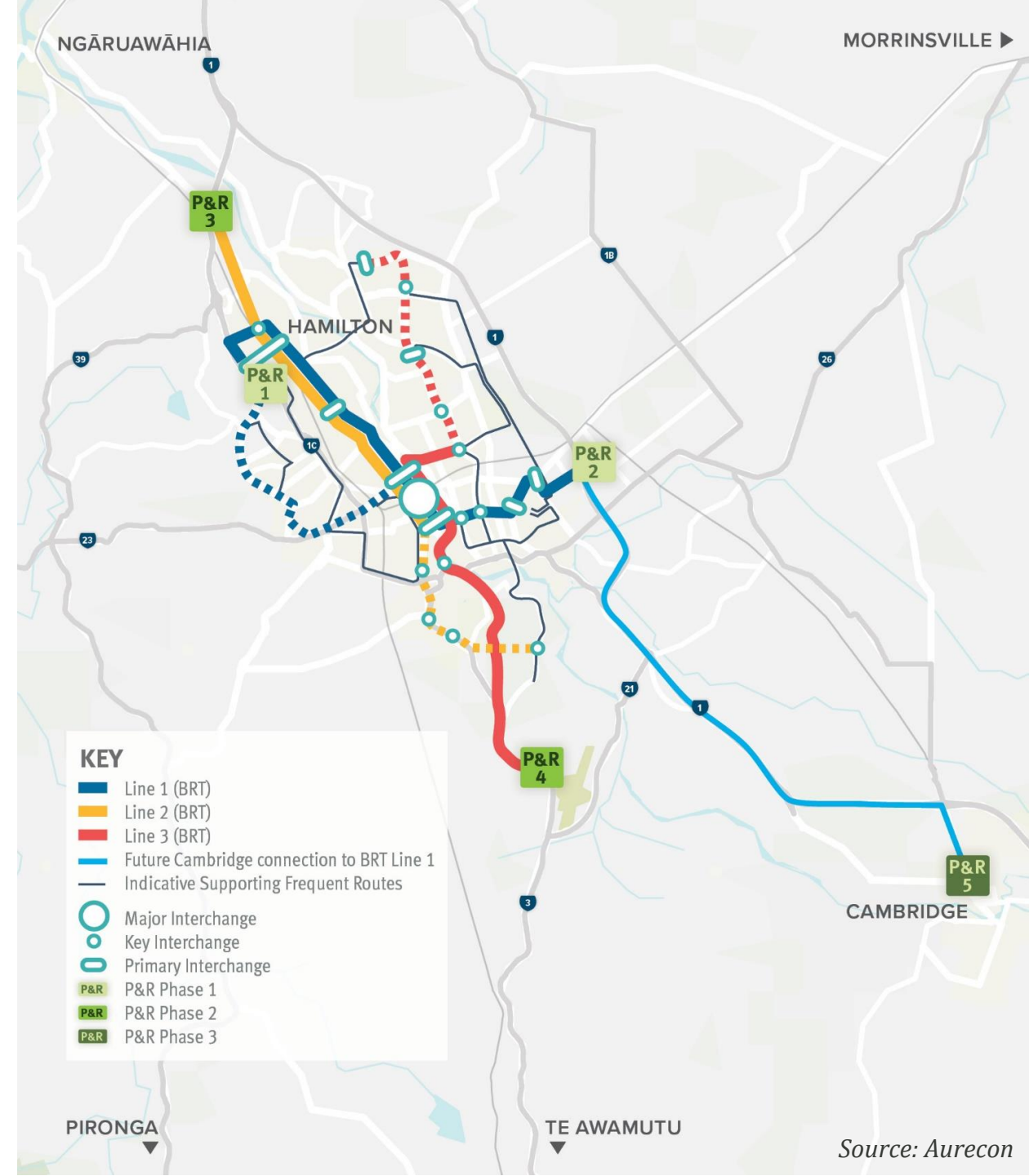


\* ALL BUS VOLUMES SHOWN ABOVE ARE PEAK HOUR ONE DIRECTION

# Hamilton City potential Park & Ride phasing

- **Five Park & Ride opportunities have been identified**—four in Hamilton and one in Cambridge.
- Site locations **aligned with the extents of the three proposed BRT corridors.**
- Early phases to consider **intercept parking needs to reduce congestion** and align capacity with mode shift.
- Success relies on strong integration with active modes, and land-use planning, structured into a **three-phase implementation pathway.**

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 Av 4. Mystery Creek / Hamilton Airport	5. Cambridge ( <i>In association with Waipa DC, seek opportunities to bring this into phase 2</i> )
BRT Link / Connection	<b>BRT Line 1</b>	<b>BRT Line 2 &amp; Line 3</b>	Future Cambridge connection to BRT Line 1

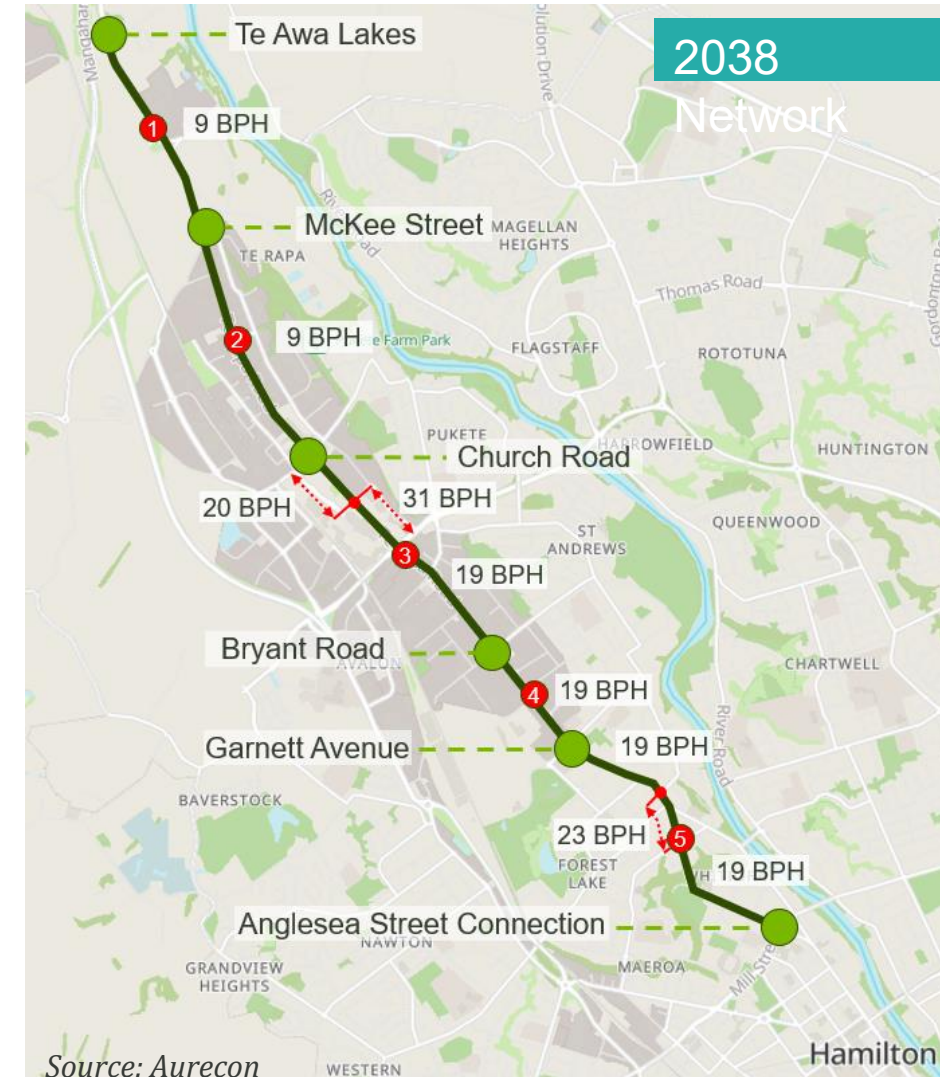


# Northern Corridor Multimodal corridor – Needs Assessment Key Findings

- Multimodal framework assessed future Northern Corridor transport needs.
- Evaluated demand, infrastructure, and land-use changes including PC 12 (NPS-UD) and PPC17 (Fronterra) and PC13 (Racecourse)

Opportunity for Priority Provision  
 Low Medium High

Section	Land Use	Public Transport Volumes (buses per hour – per direction)			Freight	Active Modes	General Traffic Performance	Indicative Priority Modes	
		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
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				
	Wairere Drive to Bryant Road	Industrial	9	16	19				
4	Bryant Road to Garnett Avenue	Industrial	7	16	19	Low	Existing infrastructure	Moderate	Bus, Active Modes
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	
	Maeroa Road to Anglesea Street Connection	Residential – High and medium density	8	16	19			Poor	Bus, Active Modes



Source: Aurecon

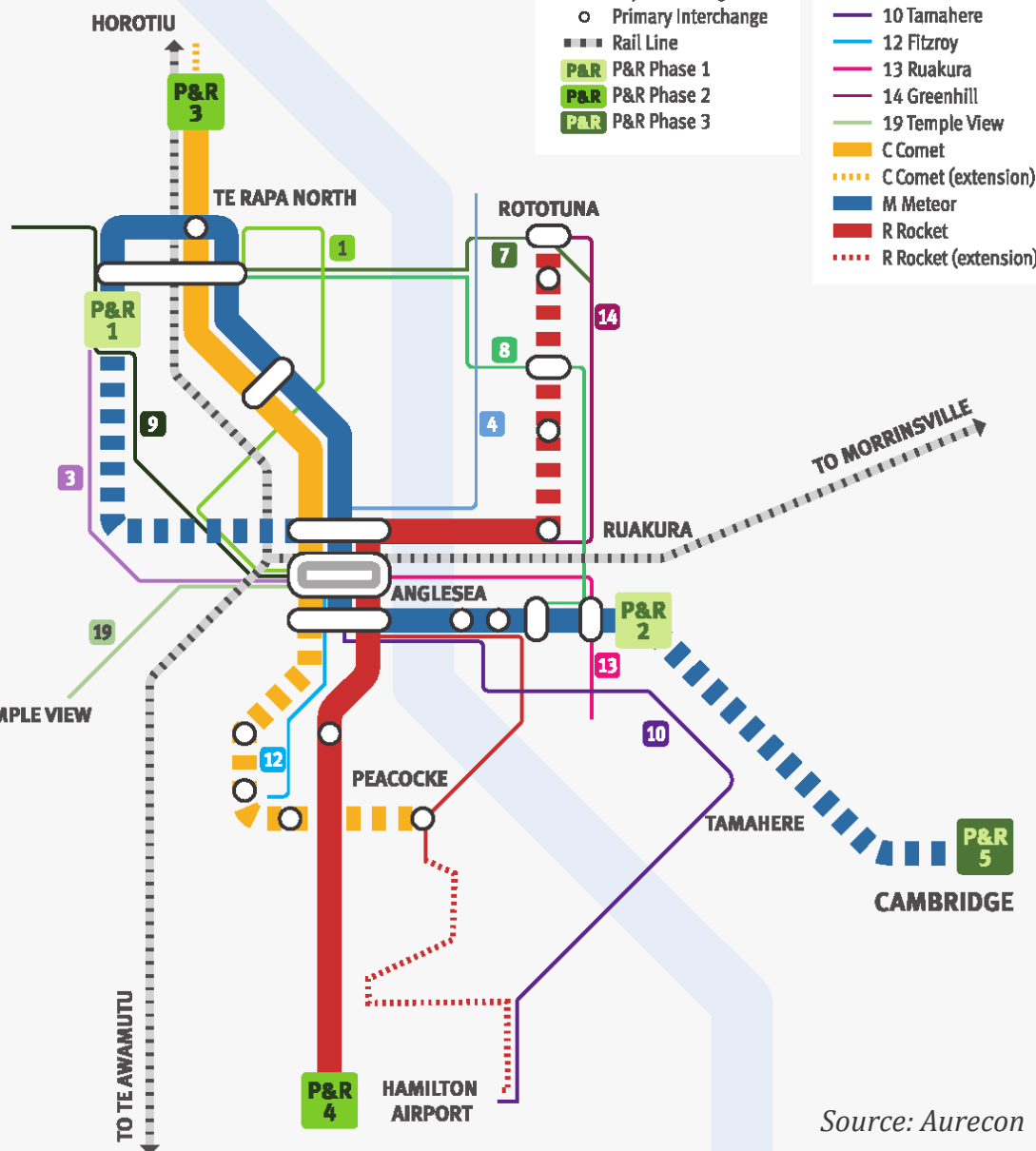
# Hamilton Metrospatial Plan Future Rapid Transit Network and Park & Ride

**Legend**

- Line 1 (BRT)
- Line 2 (BRT)
- Line 3 (BRT)
- BRT Route Extensions
- Major Interchange
- Key Interchange
- Primary Interchange
- Rail Line
- P&R P&R Phase 1
- P&R P&R Phase 2
- P&R P&R Phase 3

**Line Network 2038**

- 1 Pukete
- 3 Grandview
- 4 Flagstaff
- 7 Northern Link
- 8 Southern Link
- 9 Rotokauri
- 10 Tamahere
- 12 Fitzroy
- 13 Ruakura
- 14 Greenhill
- 19 Temple View
- C Comet
- C Comet (extension)
- M Meteor
- R Rocket
- R Rocket (extension)



Source: Aurecon

## Culmination of the 2022 PBC and refresh for corridor and network assessment outcomes

- **Shared Regional Vision & Strategic Alignment:** The PBC established a unified transport vision and secured regional alignment on long-term transport priorities.
- **Defined Rapid Transit Network:** BRT corridors were confirmed, with the Northern Corridor (Te Rapa Road) identified as the anchor for future intensification and connectivity.
- **Central Spine Endorsed:** Anglesea Street was validated as Hamilton's high-frequency rapid transit spine and integrated into the IAF delivery programme.
- **Southern Links Integration Assessed:** Options for connecting the City Centre to the Airport were evaluated, including future implications of SH3 revocation.
- **Scalable & Flexible Network Approach:** Bus and BRT solutions were confirmed as the most adaptable and scalable options for Hamilton's existing and emerging urban form.
- **Integrated Land-Use Planning:** Transport network planning was aligned with major growth areas, including Rotokauri, Ruakura, Rototuna, Peacocke, and the City Centre.
- **Staged Delivery Framework:** Findings support a phased delivery approach, enabling incremental investment aligned with growth and demand.

## The key outcomes for the body of work to date

- Benefits of the public transport system continue to be supported by the ridership
- MSP objectives have been supported by the delivery of multimodal corridors for Hamilton
- City centre and Anglesea Street critical to the delivery of the wider network and will feasibly need to be available and operating at its full capacity by mid 2030's; which in turn may mean that the IAF water pipes will need to be delivered earlier than expected.
- HCC exceedingly well positioned to respond to funding needs and can co-develop programmes of work with the IAF around utilities and land use
- Active modes integration with public transport on the key arterial corridors will be required to meet improved levels of accessibility for the sections closest to the city
- Greenfield development and brownfield links have all been catered for by the corridors and the level of frequent services delivered under the 2028 PT pathways – but this can be increased again for the Northern and Eastern BRT corridors as the designs progress
- Further opportunity for increased intensification and links to the greenfield and brownfield sites for public transport connection beyond 2051

**aurecon**

*Bringing ideas to life*

*Bringing  
ideas  
to life*

**in** [linkedin.com/company/Aurecon](https://linkedin.com/company/Aurecon)

**▶** [youtube.com/user/AureconGroup](https://youtube.com/user/AureconGroup)

**🐦** [twitter.com/Aurecon](https://twitter.com/Aurecon)

**f** [facebook.com/Aurecon](https://facebook.com/Aurecon)

**📷** [instagram.com/Aurecon](https://instagram.com/Aurecon)

**🎙️** [aurecongroup.com/podcast](https://aurecongroup.com/podcast)