

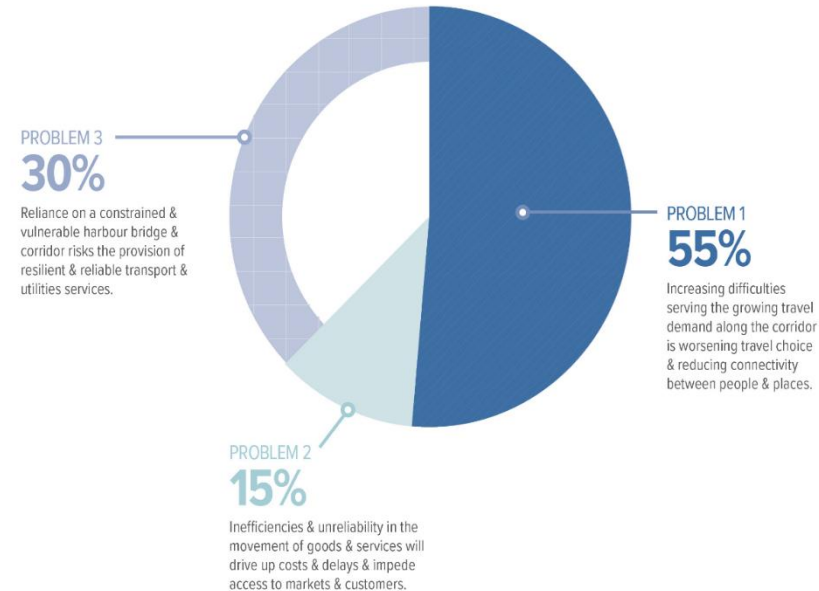
# Northern Connections

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Ministerial Briefing August 2021

# With Auckland Growing at pace there are a number of challenges facing cross Waitemata harbour connections

- There is significant **growth** forecast in the corridor (as per the Auckland Forecasting Centre model which is used for all projects in the greater Auckland region), with an additional population the size of Hamilton (NZ's fourth largest city) to be added to Auckland's North Shore in the next 25 years
- This is a key corridor for **goods and services** and unreliability of this corridor is impacting productivity
- The current structure is coming under increasing operational strain effecting the **resilience** of the crossing
- Regional growth forecasts and transport modelling have identified the significant scale of these challenges in this corridor, which is **New Zealand's busiest transport corridor**



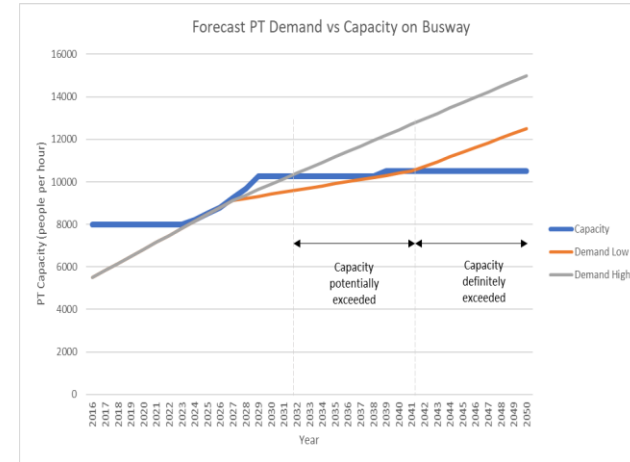
# We want greater choice and resilience in the corridor

- In addition to ferry services, the current bridge provides the main transport connection across the harbour for vehicles and the Northern Busway
- The current bridge also supports many lifeline utilities (water and gas pipelines and fibre-optic telecommunications cables)
- There is a need for the corridor to provide for all modes, including:
  - Mass Rapid Transit
  - Walking and cycling
  - Freight and commercial trips
  - Private vehicles



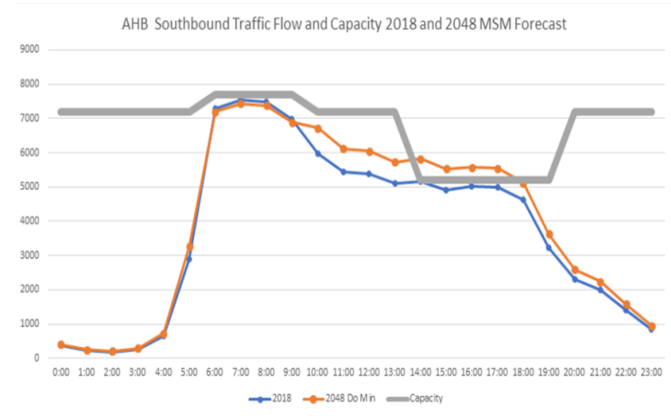
# Increased accessibility critical for the corridor, with rail based RTN a foundation of this accessibility

- With the forecast growth, a rail based **Rapid Transit** system is required to do the heavily lifting for this growth. This is needed in addition to the current busway
- The existing busway is due to reach capacity in less than five years, upgrades to busway are proposed to increase people movements by approximately 30% to its maximum capacity through:
  - Double Decker buses
  - Station upgrades
  - Improved mainline priority (eg Esmonde Road to Harbour Bridge)
- This delays the needed for an additional rail based RTN connection to the North Shore till approximately 2030, which will be a challenge to implement in time
- Upgrading the existing Busway to rail was examined but it does not provide sufficient long-term capacity (post 2048). It would also would create significant implementation challenges and disruption, hence a new RTN corridor is required.



# Freight and the provision of goods and services will become increasingly challenging

- Over the last five years, off-peak traffic has been steadily growing, inter peak flows across the Harbour Bridge have been observed to increase by approximately 1% per annum and pre-AM peak (4am to 7am) has increased by 53% across the five years.
- By 2048 the Harbour Bridge flows are forecast to be within 90% of capacity for up to 10 hours of the day (assuming road pricing in place). This level of demand will impact on travel times and reliability for inter peak trips including freight, business and commercial trips. These trips have limited ability to transfer to public transport compared to commuting trips to and from the city centre
- The existing structure will also need to allow for the increasingly intrusive maintenance requirements, which will see lanes closed for longer periods to undertake the necessary works to keep this 60+ year old piece of infrastructure continuing to operate safely.



# There is still a need to provide for freight and non PT trips

- Even with additional RTN capacity across the harbour and the increase in mode shift, with the growth proposed additional freight and non PT connection across the harbour is required to
  - Provide efficient movement of strategic freight connections
  - Enable asset resilience to the existing harbour bridge
  - Address seal level rise
- This connection would not be required till in the order of 5-10 years after the RTN connection
- It is important that any additional connections are provided in such a way as to not increase private vehicles into the central city



# What difference does road pricing and demand management make

- In relation to this programme, this analysis showed:
  - A general reduction in peak period private vehicle trips, with 500 less people travelling by private vehicle across the harbour in the AM peak period
  - An increase in public transport trips, with 1,300 more people travelling by public transport across the harbour in the AM peak period
  - Increase in public transport mode share (by people trips) across the harbour to 73%, from 70% without pricing in place
  - Private vehicle trips outside of peak periods increased marginally with in the order of 4,500 trips forecast to move from the peak period to 'non peak' times (peak spreading).

This analysis indicates that road pricing:

- Accelerates the need for the long term RTN intervention due to an increase in PT trips
- Slightly delays the need for additional non-PT and active mode interventions

# The required future connections across the harbour is a multi-modal suite of connections linking to the wider Auckland transport system

- The future connections across the harbour have been planned to operate in conjunction with each other as part of a system. The future connections would include:
  - The existing Harbour Bridge:
    - Traffic lanes dedicated to the city
    - Buses running from existing busway
  - **Tunnel**
    - New connection for rail based RTN (and supporting network on North Shore)
    - New connection with additional lanes for traffic bypassing Central City
  - **Bridge**
    - New dedicated walking and cycling link



# Northern Pathway is compatible with this long term strategy



Dedicated walking and cycling connection across the harbour needed and assumed in place with long term strategy

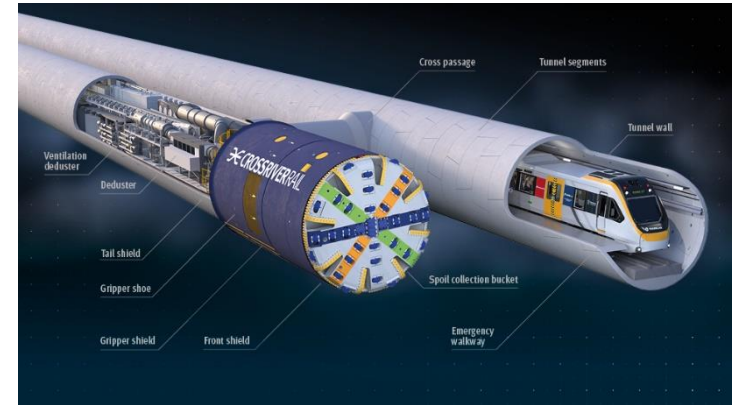
Tunnels not suitable for walking and cycling across the harbour

Do new tunnels provide sufficient relief to the existing bridge to allow it to be used for walking and cycling?

- 2050 transport demand on existing bridge is equivalent to six lanes, so there is theoretically two lanes of spare capacity
- However this spare capacity is needed to provide operational flexibility to undertake the increasing maintenance to the structure and could be used for busway operation
- So no the new tunnels do not provide sufficient relief to use the existing bridge for walking and cycling. Also the road tunnels (which provide this relief) are not due for another 20+ years and would take 10 years to construct

# The form has been considered with a tunnel preferred

- The previous work considered a tunnel and bridge for the additional connections
- Whilst the cost of a bridge was in the order of a third of the cost of tunnel options (\$9Bn vs \$3bn), the tunnel options were preferred due to:
  - Impacts and challenges in providing new connections with existing transport system
  - Consenting and approvals risk of the bridge option, including challenges with landing areas a both the north and south of the connection
  - Visual interface of a new bridge in the landscape



Example tunnel form for RTN

# Next Steps

- There are three key phases:
  - **Phase 1:** An additional rapid transit connection across the Waitematā Harbour.
  - **Phase 2:** Strategic transport networks (road and rapid transit).
  - **Phase 3:** Future proofing and route protection.
- The next phase of planning work will commence in late 2021. The indicative programme for this work is as follows:

• Business case planning work commences	Late 2021
• Community engagement – phase 1	Mid/Late 2022
• Recommended options confirmed	Mid 2023
• Community engagement – phase 2	Late 2023
• Draft business case provided for review	Late 2023/Early 2024
• Business case finalised for approval	Mid 2024
• Approved Business Case	Mid/Late 2024