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PROGRAMME VIEW MRT & STRATEGIC HIGHWAYS DISCUSSION ON EMERGING VIEW

Governance Reference Group Meeting

3 August 2020



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Workshop objectives

Our objectives for today are to:

- provide the most up-to-date perspective on the MRT and SHI packages
- highlight outstanding questions to be answered, including in particular areas of further investigation required to prove up the best value combination of investments.
- Get GRG input on implications and next steps, including:
 - getting wider partner and political input on the findings to date
 - implications for stakeholder and community engagement.

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Programme Context

Timeline of activities to date

- **Late 2018** - prepared a Programme Business Case (PBC): a multimodal package of transport investments called the Recommended Programme of Investment (RPI)
- **May 2019** - the government announced an **Indicative Package** (which contained most but not all the elements of the RPI).

The Indicative Package modelled required **capital investment at \$3.7B** delivered over 20 years, with a **total funding requirement over 30 years \$6.4B** (including net operating costs & financing payments, all P95 inflated).
- **2020-21** - the Programme, through the IBCs, is seeking to fully evaluate the benefits and costs of the Indicative Package, and what combination of projects will deliver the **greatest overall benefits for a given level of investment**

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Changes/updates to assumptions since PBC

Work undertaken by partners and consultants has resulted in some revisions to key assumptions

- Planning for Growth work now suggests growth preferred in south, west and north
 - Kilbirnie and parts of Miramar less preferred due to resilience concerns.
- Volume of trips to the airport reduced – future growth less certain post COVID
- Benchmarking offshore MRT routes has shown that the assumed average speed of the PBC Baseline MRT route may be optimistic.
- Bus Priority Action Plan has confirmed dual spine required to meet bus/MRT capacity targets
- Importance of integrating a new MRT with existing rail as part of the regional mass rapid transit system has become increasingly apparent
- Draft update to Regional Rail Plan shows that mode shift targets require significant investment in rail to reduce network constraints, and enable service frequencies of 10 min by about 2030
 - This will require more trains to provide the capacity and significant improvements in customer amenities to improve the customer experience and access to the rail mass transit system
- More detailed understanding of constraints around physical constructability and implementability.

Our Vision for Mass Rapid Transit for Wellington

*Deliver a step change
in public transport capacity, quality and performance
to drive mode shift
and support urban intensification.*

Noting that the draft **Government Policy Statement for Land Transport 2021** defines **Rapid Transit** as:

“A fast, frequent, reliable, and high capacity form of urban public transport that can move a large number of people. Rapid transit vehicles run on permanent routes, and are largely separated from other traffic to avoid being delayed by congestion.

Examples include rail, light rail, and bus rapid transit systems.”

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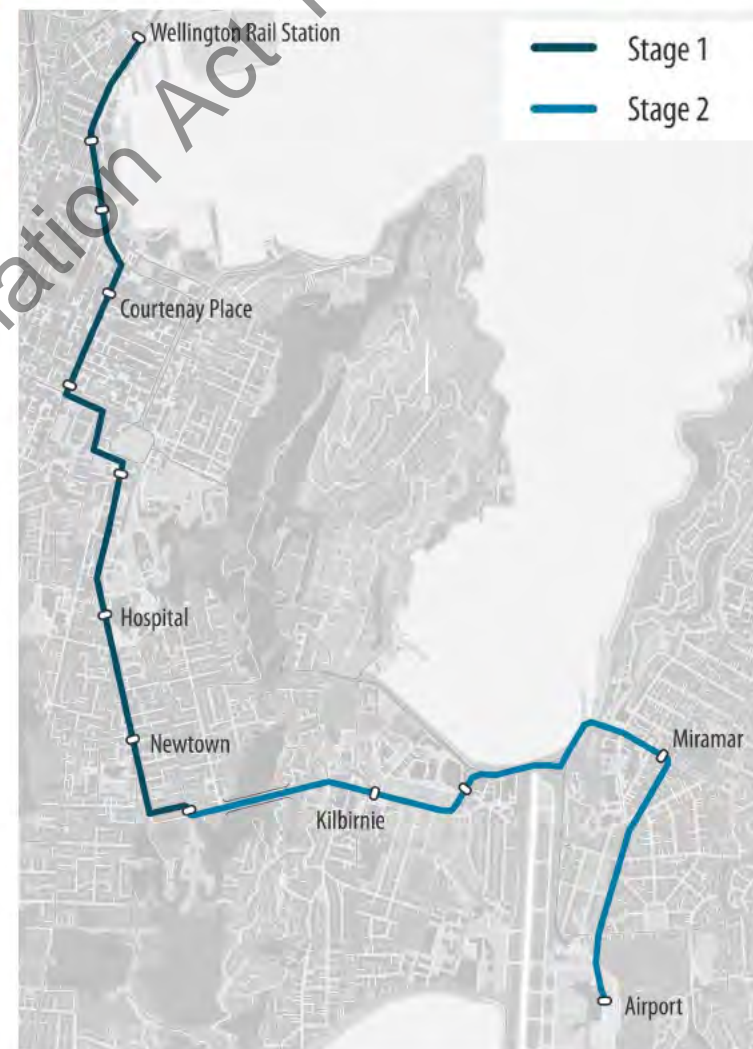
Scope of the Mass Rapid Transit IBC

- Develop an MRT system that contributes to the wider objectives of the LGWM programme
 - Review the PBC Baseline route as a starting point for business case options development
 - Develop route options and confirm a recommended route(s)
 - Recommend an MRT mode or modes compatible with the recommended routes.
- Demonstrate the viability of MRT with respect to cost, consentability, implementability and risk.
- Demonstrate the interface with the wider transport system and Wellington urban fabric.
- Present a scope and management case for the next steps in the investigation, delivery and staging.
- Provide Project Partners with information needed to inform LTP, RLTP and NLTP processes.

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Re-examining the Baseline Route

- The MRT Baseline Route was detailed in the Programme Business Case.
- The 10.2 km route was presented as two potential stages:
 - Stage 1: Wellington Rail Station to Newtown travelling via the waterfront quays through the CBD, Taranaki Street, Memorial Park, Tasman Street, Adelaide Road and Riddiford Street (hospital).
 - Stage 2: Newtown to Wellington Airport travelling via a new tunnel through Mt Albert to Kilbirnie and Miramar.



Baseline Route Observations

Route directness

- The Baseline route adds more than 20% to bus travel distances for some trips.

Operating speed

- An operating speed of 30km/h for the service was previously assumed.
- A speed of 17-20 km/h is more likely unless there are changes to the alignment or other investments in infrastructure.

Requirement to transfer

- Baseline route planning assumed more than 50% of customers from Miramar would transfer from local feeder services.

Ability to deliver network integration benefits

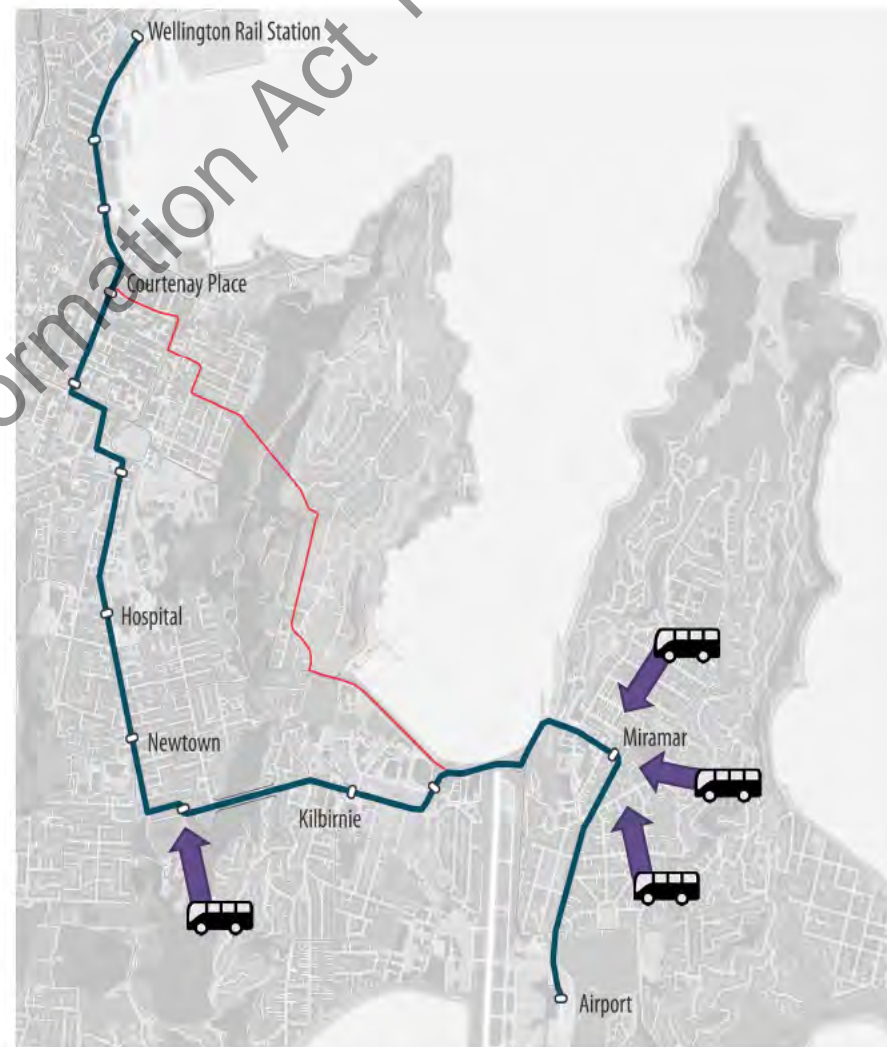
- The Baseline route overlaps several existing, frequent bus routes, but is unlikely to completely replace any of them.

Ability to achieve patronage forecasts

- Indicative modelling suggests that, without significant urban intensification, the Baseline route would achieve a peak load lower than previously assessed.

Resilience and development potential

- Development potential in Kilbirnie and Miramar is less than previously believed, due to the compound affects of multiple resilience issues in these areas.



MRT System Options Development and Assessment

- Mass Rapid Transit is being planned as a system for the whole city.
- Current planning is focused on regionally important destinations as recognised in the Baseline route, in three sections:
 - Section 1 - Wellington Railway Station to the Hospital & Newtown
 - Section 2 - Route extension to the Airport and eastern suburbs
 - Section 3 - Route extensions, including future options, beyond Newtown to the southern suburbs
- The design of the MRT system will be future-proofed, to enable future extension to the south, west (Karori) and/or to the northern suburbs if desired at some future date.

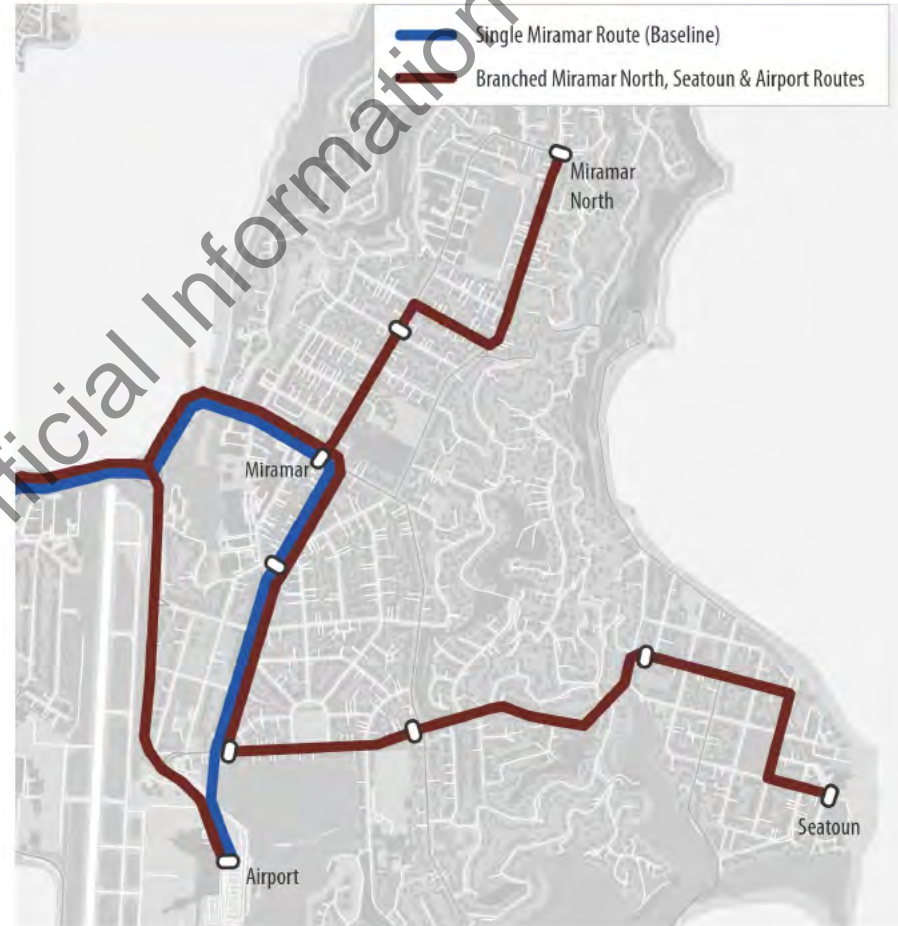
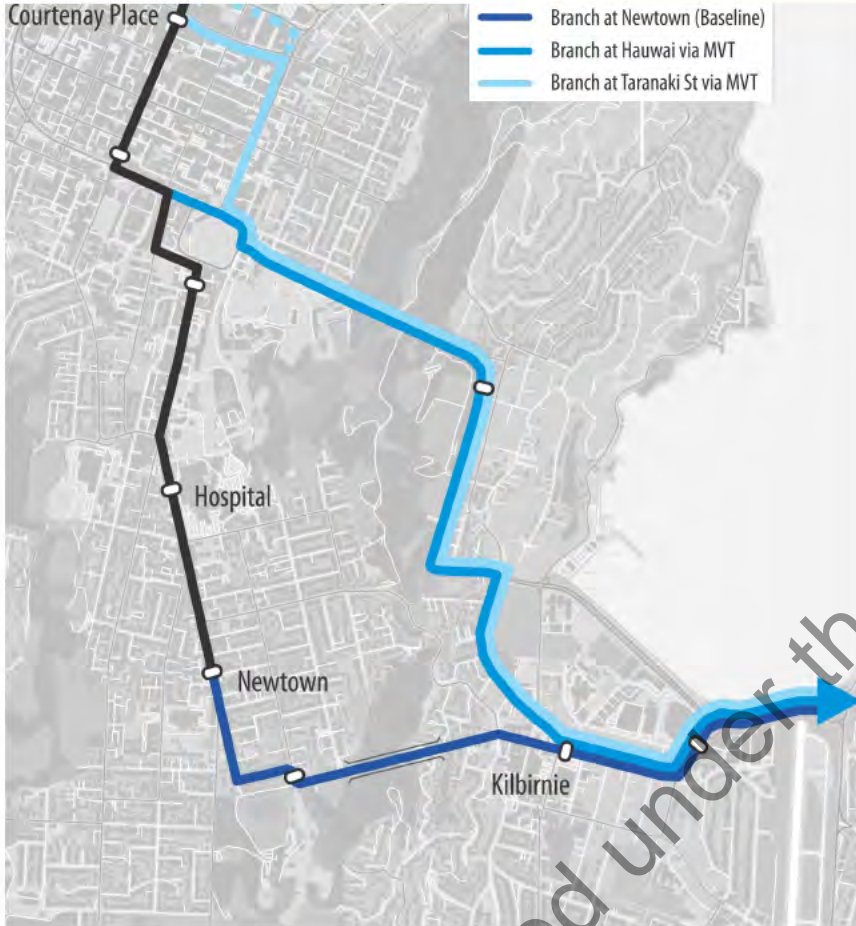
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Route Options: Section 1

- Section 1 of the Baseline route is generally well supported.
- It provides a logical and relatively direct connection between the city centre and Newtown, including Wellington Hospital.
- Three options were shortlisted, plus a sub-option to completely avoid the Basin Reserve.
- Section 1 to Newtown was assessed to determine if it could operate as a standalone service. It was found to:
 - be too short to be effective in attracting customers, and
 - would still require most of the bus network to continue to operate, meaning the operational cost to run the service would be additional to the existing cost rather than in place of, but
 - would make sense as a first phase of construction of an MRT system



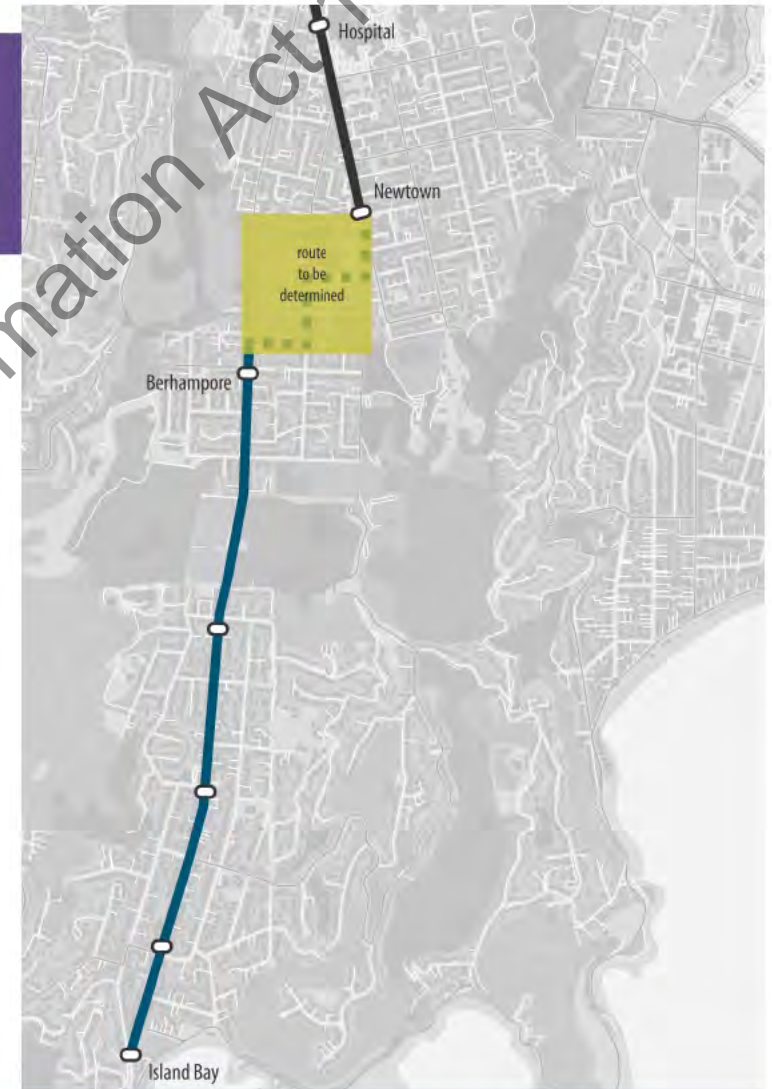
Route Options: Section 2 to the East, & within the East



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Route Options: Section 3 Possible Future Extension to the South

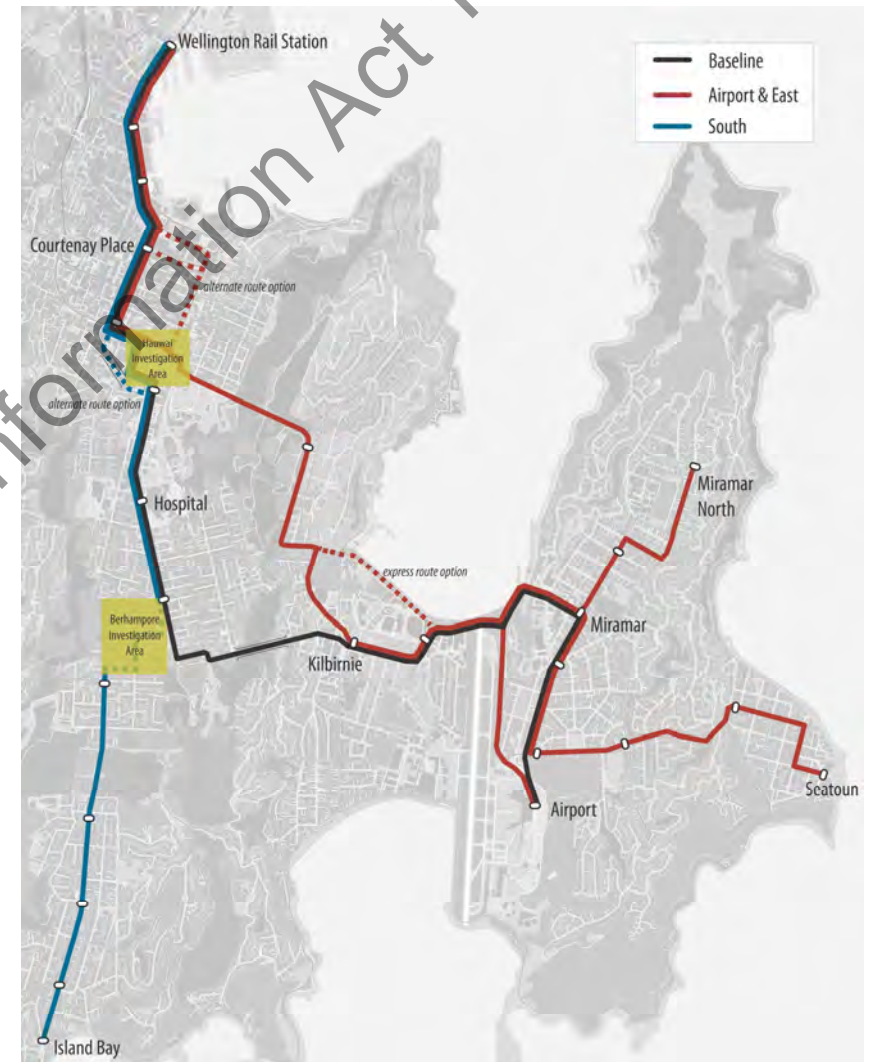
- While our first priority is MRT to the airport, a possible future route extended to Island Bay would replicate and replace the existing successful bus service.
- This route is attractive as the urban footprint is within 500m of the corridor:
 - the entire catchment can be served with a single route
 - urban development can be focused around stations.



Route option summary

The route options recommended for investigation as part of the IBC are:

- Option 1: the Baseline route, via a Mt Albert tunnel to the airport
- Option 2: to Miramar North, Seatoun and the airport, via the Mt Victoria tunnel
- Possible future route extension option south: to Island Bay via Newtown and Berhampore
- Note: Both Option 1 and 2 could be combined with a southern route extension
- *Evaluating all of the options above will provide us with a rich picture of costs and benefits*





Articulated Bus 18m



Bi-Articulated Bus 24m



ART 'Trackless Tram' 30m



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Light Rail 33m

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SHI Scope – Draft Vision

People and goods are moved locally and regionally to, from, and through Wellington using an efficient strategic corridor that enables a city of attractive streets and places.

THE FOLLOWING ARE DESIRED OUTCOMES FOR SUCCESS:

DIRECTIVE NETWORK



Directs freight and high volume vehicle movements to a corridor that frees up more city streets to become attractive places to spend time.

ACCESSIBLE CITY



Enables people to move by public transport and active modes safely into and around the city by multiple attractive access points.

FOR PEOPLE + PLACE



Responds innovatively and positively to the city's different characteristics and cultural values.

ENABLING OF GROWTH



Enables opportunities for growth in the city supported by Mass Rapid Transit and active modes.

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SHI - Overview of Study Areas

1

Ngauranga to Terrace Tunnel

2

Terrace Tunnel

3

Te Aro/Karo Drive

4

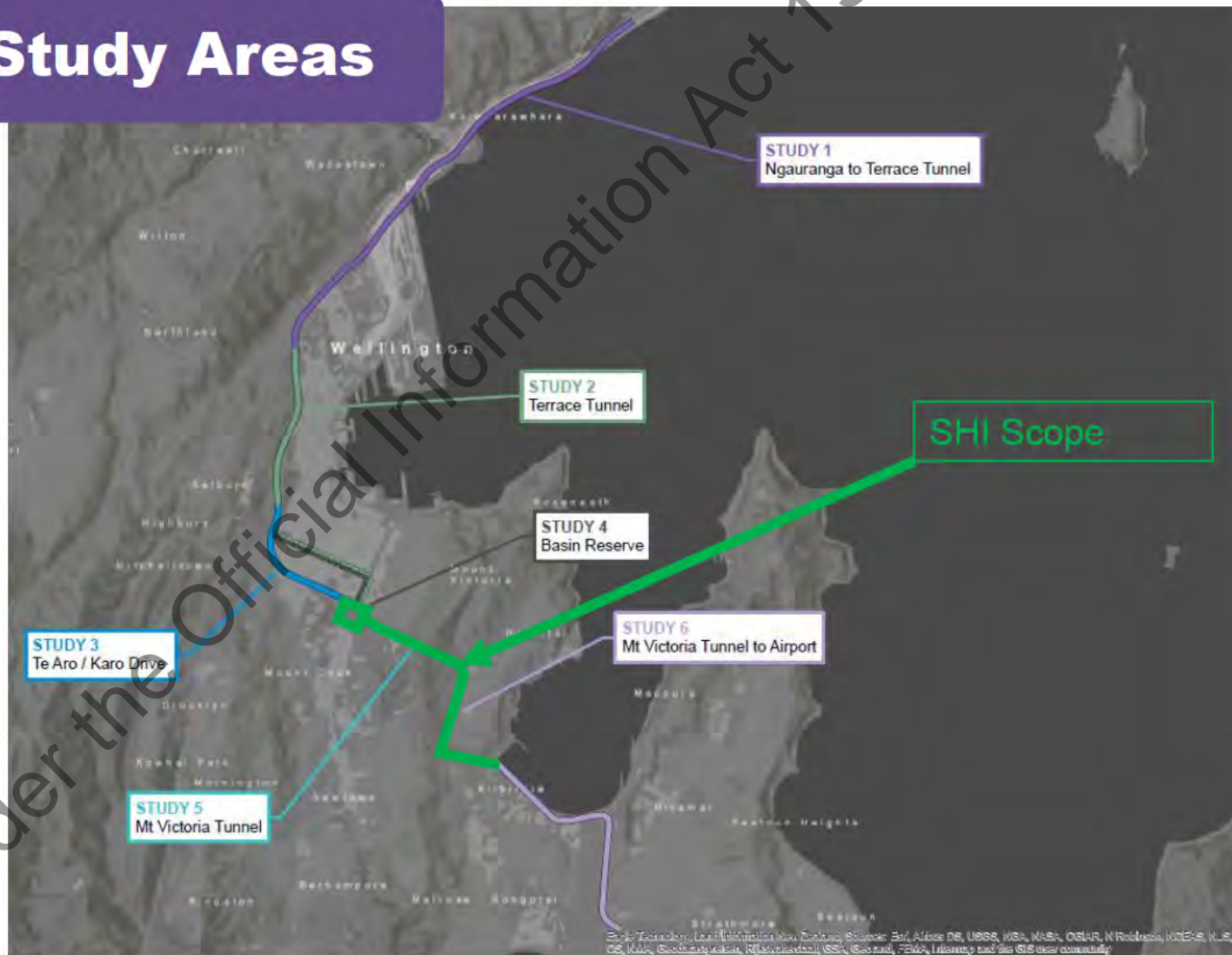
Basin Reserve

5

Mt Vic Tunnel

6

Mt Vic Tunnel to Airport



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Basin Reserve – Grade Separated

Grade Separated Arras Tunnel Extension options:

1. Effectively one road network solution.
2. Provides variable amenity, landscaping, and development opportunities.
3. Flexible to accommodate MRT options.
4. Flexible to interface with existing (Vivian St and Kent Tce) and potential future (Te Aro) southbound State Highway alignments.
5. Similar to PBC option.

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Summarise findings and next steps

Summary of findings to date

Overall

- Stronger than forecast growth in the north (already the highest volume corridor).
- Airport (at least in the short-medium term) less of a demand driver.
- Planning for Growth has noted there are a number of hazard issues for Kilbirnie and Lyall Bay relating to sea level rise, flooding, ground shaking, liquefaction and tsunamis. These may mean the 6-storey minimum building height required by the NPS-UD is not appropriate across these areas.

Mass Rapid Transit

- Further design work underway to enable faster MRT speeds.
- Investigating ways to minimise requirements to transfer from local feeder buses to the MRT service.
- Significant intensification would need to be assumed to deliver required level of economic benefits.
- Options emerging:
 - railway station to Airport – route from PBC, or variation along Kent/Cambridge, with significant intensification along the route
 - route that splits at/around Basin – one through Newtown, one to airport with variations potentially extending coverage to wider Miramar Peninsula
 - potential future extension from Newtown through Berhampore to Island Bay.

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Summarising the findings to date

Strategic Highways

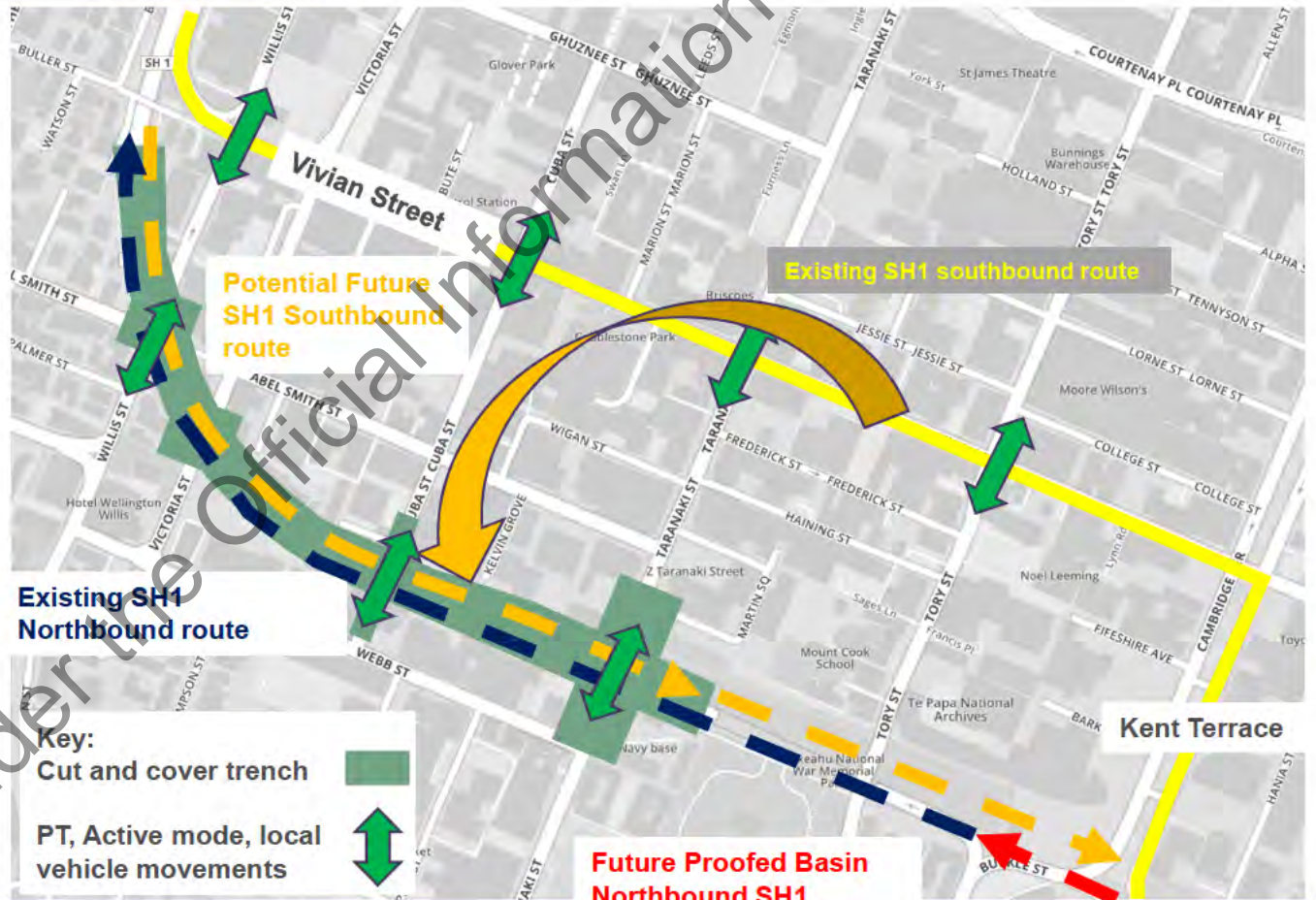
- There are physical workable options for the Basin Reserve and additional Mt Victoria Tunnel, and these can be physically integrated with different MRT options, however the performance of each of these options is still required to be assessed to confirm if they achieve the LGWM outcomes sought, and detailed modelling is now underway.
- The options are 'future-proofed' to respond to possible future upgrades (particularly through Te Aro).
- Improvements at the Basin and Mt Victoria Tunnel will primarily benefit those travelling to/from the South and East
- City Streets is an important Programme component – to encourage sufficient mode shift to reduce the number of local trips on the state highways in combination with MRT
- Retaining the existing SH1 alignment on Vivian Street and Kent Terrace means that only minimal improvements to PT or active mode safety and efficiency outcomes can be made for the high number of north and south conflicts trips across SH1.

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State Highway Alignment

Indicative Package

- retains SH on existing Vivian Street
- reduced safety, active mode, PT outcomes.



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Next steps: Transport performance evaluation

In the next phase of evaluation, outputs from the Wellington transport/traffic model will be used to understand how well the physical options perform from a transport view. Broader evaluation of benefits and costs to follow. Some of the questions we are seeking to answer are:

1. How do we best configure a new MRT system, together with investments into City Streets, such that sufficient trips are taken out of the network to counteract the loss of lane capacity along the Quays?
2. How many trips are removed from the city network due to the investments proposed in the Strategic Highways IBC?
3. Do key regional trips see a reduction in total travel time?
4. How effective might a Parking Levy be as a tool on top of other measures to induce mode shift?
5. How effective are the options in reducing conflicts between modes, or between traffic travelling north to south (the dominant direction of travel in Wellington) versus traffic travelling west to east?
6. What is the optimal usage of capacity through a new Mt Victoria tunnel?
7. What is the impact of changes to key assumptions, in particular impact of Covid, population growth changes and other matters relating to the current or future network operation

Questions / Discussion

General level of comfort with the shortlist options identified?

Guidance for how we engage with wider Councils?

Particular further information that you would like to see?

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