

MINISTERIAL BRIEFING NOTE

Subject	Wellington Long Tunnel Option
Date	26 January 2024
Briefing number	BRI-2946

Contact(s) for telephone discussion (if required)				
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Action taken by Office of the Minister

- ☐ Noted
- ☐ Seen by Minister
- ☐ Agreed
- ☐ Feedback provided
- ☐ Forwarded to
- ☐ Needs change [please specify]
- ☐ Withdrawn
- ☐ Overtaken by events

26 January 2024

Hon Simeon Brown – Minister of Transport

WELLINGTON LONG TUNNEL OPTION

Purpose

1. This briefing provides you with information on the Long Tunnel option. It outlines the Long Tunnel's broader transport benefits, why it was discounted by the Let's Get Wellington Moving (LGWM) programme and provides potential next steps for your consideration.

Introduction

2. The Long Tunnel is the working name given to a piece of infrastructure that would enable state highway traffic to bypass the Wellington city centre. It would start at the Terrace Tunnel in the north and travel under the city centre and exit onto Wellington Road in Kilbirnie.
3. The Long Tunnel would address a larger range of issues than the Basin Reserve and Mt Victoria Tunnel projects. Whereas those projects seek to improve access between the CBD, south (to the hospital) and east (to the airport), the Long Tunnel addresses the fundamental issue of state highway traffic conflicting with local transport movements in all directions, for example at the Terrace Tunnel and along Vivian Street and Karo Drive in the city.
4. The Long Tunnel has been subject to only limited investigations to date, which means that additional work would be required to confirm technical feasibility and bring it up to the same level of detail as the Basin Reserve and Mt Victoria Tunnel options.

Background and strategic context

5. State Highway 1 (SH1) is the main arterial that connects the hospital and the airport with the city centre and the wider region; however, it is subject to congestion, safety and resilience concerns due to the many intersections with local transport routes. These in turn inhibit efficient and effective access and limit economic growth and productivity. Population growth in the city and the region also means that these issues will get progressively worse over time.
6. Improving SH1 from the Wellington Urban Motorway through the city centre to the airport has consistently been part of Wellington's transport strategies. The strategy has typically included four projects: a duplicate Terrace Tunnel, improvements through Te Aro, grade separation at the Basin Reserve and duplicating the Mt Victoria Tunnel.
7. All four projects were included in the Wellington Regional Corridor Roads of National Significance and then the 2019 LGWM Programme Business Case (PBC) 'Recommended Programme of Investment'.
8. Due to affordability constraints, the Terrace Tunnel duplication and the Te Aro Trench projects were not identified for delivery in early years and whilst retained for the long term, were not subject to detailed investigation as part of the Indicative Business Case (IBC).
9. The Long Tunnel option was identified during early IBC phases as an alternative to completing all four projects on SH1. However, it was then discounted in 2021 as it did not align strongly with LGWM's objectives due to its carbon footprint and its function of increasing general traffic capacity. It was also estimated to be substantially more expensive than the Mt Victoria Tunnel and Basin Reserve upgrade and fell outside LGWM's affordability threshold.

Options to address traffic conflict challenges

10. There are two ways to address the congestion, resilience and safety concerns on SH1. One is the staged approach as per the LGWM PBC Recommended Programme of Investment, which includes the four projects referred to above.
11. An alternative approach is twin two-lane long tunnels, four kilometres in length, from north of the Terrace Tunnel to Wellington Road. This removes the resilience and safety concerns and provides a seamless connection to the south and the east. The existing tunnels would be repurposed to provide vital functions in the local transport network to connect the city centre with the highway and outer suburbs.
12. More comparative information is detailed in Appendix 1.

Early assessment of the Long Tunnel option

13. The broader qualitative benefits of the Long Tunnel not only provide transport system benefits but also improve the urban amenity and pedestrian experience in the city. It would facilitate greater reallocation of surface level road space to active modes and public transport across Wellington and would provide greater regional connectivity to the airport and hospital with reduced city and state highway congestion.
14. From data analysis, the current proportion of vehicles carrying on past the city centre from the north to the south and east ranges between approximately 25% and 35%. It is expected that the Long Tunnel will attract all these movements plus traffic from other routes and for shorter journeys.
15. Removing traffic from the central city will allow road space reallocation and activate urban development opportunities. These opportunities are expected to be greater than the alternative of delivering the four projects.
16. Models indicate that travel times, particularly for vehicles travelling southbound, would be reduced by up to 15 minutes, compared to 2-3 minutes for just the Mt Victoria Tunnel and Basin Reserve.
17. On 19 December 2023, a briefing was provided to you (BRI-2928 refers) which included a table comparing the Parallel and Diagonal Tunnel. This has been updated to include the Long Tunnel in Appendix 1.
18. The Long Tunnel does limit the number of accesses from the state highway into the city centre south of the Terrace Tunnel compared to the existing situation. However, removal of traffic from the at-grade network will improve access to key destinations. Further investigations are needed to confirm the cost, benefits and impacts of providing connectivity from the tunnel to the hospital.
19. The cost of the Long Tunnel option (\$2.8-\$3.5B) would be more expensive than the Basin Reserve and Mt Victoria Tunnel options **Out of Scope**, but significantly less than the cost of all four state highway projects (>\$5.0B), none of which would be needed if the Long Tunnel was progressed.

Risks

20. Due to the Long Tunnel being discounted early into the LGWM business case process, further work would need to be carried out to properly understand its costs, benefits and impacts. This includes:
 - Technical feasibility assessment in relation to ground conditions
 - Assessment of tunnel infrastructure, tie-ins with the other tunnels, earthquake hazards etc.
 - Development and testing of sub-options in relation to its start and end points, the exact alignment and its connectivity to the surrounding road network at each end

- Consideration of the costs, benefits and impacts of an intermediate interchange in the vicinity of Adelaide Road
- Modelling of the transport effects of the options and also its inter-relationship with other regional and local transport projects
- Concept design and cost estimation
- Benefit Cost Ratio calculation
- Economic, social, cultural and environmental impacts assessments to understand its consentability and to understand any likely costs associated with mitigation.

21. This additional investigation will assist in understanding the true cost of the Long Tunnel option and its viability. There is a risk that the additional investigation will identify unknowns that significantly impact deliverability and cost.

Next steps

22. Initial work to further investigate the above areas will be undertaken to ensure proof of concept and technical feasibility. This could then be incorporated into a Detailed Business Case if it was proposed to progress this option further.
23. This initial work will be reported back to you in June 2024.

It is recommended that you:

1. **Note** the information in this briefing



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Brett Gliddon

Group General Manager Transport Services

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Hon Simeon Brown, Minister of Transport

Date: 2024

Appendix 1 – Comparison of options for SH1 through Wellington central city

Note: All options assume some bus priority measures (not yet determined or described in detail in the table)
Preliminary information from DBC investigation to date. Information to be confirmed for DBC completion.

Option	A		B	C*
	Out of Scope			<ul style="list-style-type: none">Basin and Te Aro remains largely unchanged.LONG Tunnel from north of the Terrace Tunnel, under the city to Wellington Road, Kilbirnie. State Highway traffic passes under the city
Map				

* Investigation of Option C is not as advanced as investigation of Options A and B

Option	Out of Scope		C
Description			<p>Long Tunnel</p> <p>New twin bored tunnel (4km long).</p> <p>Includes:</p> <ul style="list-style-type: none">Two general traffic lanes in each directionNo improved walking and cycling facility through Mt VictoriaNo changes required to existing Mt Victoria tunnel or Basin (potential for lane re-allocation at the Basin).

Transport Benefits	<div>Out of Scope</div>	High
Economic Benefits		High
Other benefits		
Private property impact ¹		
Public property impact ²		

Transport benefits:

- General traffic: travel time saving of up to 15 minutes for journeys between the region and the airport (compared with 2-3 minutes for A and B)
- Public transport TBC (by removing conflicts with state highway traffic)

Providing a long tunnel in isolation may have some negative impacts in terms of induced traffic and therefore other improvements are needed:

- Changes to reallocate road space in the central city – may include WCC strategy for the network and other bus and walking/cycling improvements
- Public transport improvements to the east and south, and across the central city.
- Some form of road pricing may also be beneficial.

- Improved safety
- Regional benefits – improved regional connections to the airport and hospital
- Liveability greatly enhanced by removing through traffic from Wellington streets (including waterfront quays) – WCC would be able to reallocate road space if desired
- Alternate route improves resilience more than A and B
- Opens up development potential through Te Aro
- Removes need for future duplication of Terrace Tunnel and Te Aro trenching.

Least

- 50-60 properties required
- Least heritage impact

Impacts properties:

- In Kilbirnie (Wellington Rd, Kilbirnie Cr)
- Potential additional properties required at northern end
- Potential additional properties required if intermediate connection

Least

- Requires Town Belt land at the eastern portal.
- Requires land at Terrace Tunnel

¹ The assessment of private and public property impacts for all options does not include an analysis of subterranean rights. The assessment of the long tunnel assumes the northern portal can be built without requiring private property or additional public property. Design work on the long tunnel to date has been preliminary only. Impacts on private and public property would need to be investigated further should this option progress.

	Out of Scope	
Construction disruption		Least <ul style="list-style-type: none">• Impact during construction for works at the tunnel portals
Other risks		<ul style="list-style-type: none">• Limited optioneering and design development undertaken to date• Geotech• Intersection design at eastern end – large impact on urban environments
2023 Option Cost		Long Tunnel \$2.8 - \$3.5B *Low cost certainty Compares to over \$5.0B to deliver the Mt Victoria Tunnel, Basin Reserve, Te Aro Trench and Terrace Tunnel projects.