

**BOARD PAPER**

**Paper no:** 16/06/1029

**Meeting date:** 10 June 2016

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**Board function:** Significant planning, investment and operational matters

**Subject:** **Auckland – Rapid Transit to the Airport**

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## PURPOSE

1. The purpose of this report is to recommend that further investigations into options for a rapid transit network from South West Auckland to the airport are limited to bus rapid transit and light rail transit options (and not heavy rail).



## SUMMARY

2. To address the projected 30 year growth in Auckland Airport's operations, adjoining airport developments, and associated jobs, a reliable high capacity public transport service is needed from the Airport to the Central Business District and the wider region. Auckland Airport has sought to know by June 2016 what form a future rapid transit network will take in order to accommodate this in its airport expansion programme and, if possible, to avoid the higher costs of a heavy rail option – which would require tunnelling and an underground station to serve the airport terminal.
3. The rapid transit corridors are State highway 20A (Onehunga to Airport) and State highway 20B (Airport to Manukau).
4. For reasons of achievability, cost and scalability, we consider that light rail transit and bus rapid transit are the likely preferred options. We do not consider heavy rail to be a viable option on the grounds that it would be difficult to achieve and carry significant cost. We therefore propose to rule out further investigations of heavy rail as an option for a future rapid transit network from the Airport. Auckland Transport will make the same recommendation to its Board in June.

5. The priority and timing/staging of options for rapid transit networks will be considered as part of the Auckland Transport Alignment Project.



## RECOMMENDATIONS

6. That the New Zealand Transport Agency Board **agrees** that further investigations for a rapid transit network from the Airport along State highway 20A (Onehunga to Airport) or State highway 20B (Airport to Manukau) should be limited to light rail transit or bus rapid transit options (and not heavy rail).



## BACKGROUND

7. The projected growth of Auckland Airport will result in significant development over the next 30 years. Passenger numbers are set to grow from 14.5 million currently to 40 million by 2040. The development of the Airport precinct will result in the creation of 27,000 fulltime jobs.
8. The Airport company has embarked on an airport expansion programme and has asked Auckland Transport to clarify by June 2016 what provision they should make for any future rapid transit network in the Airport expansion plans.
9. The Sub-regional Strategy that arose from the South Western Airport Multi Modal Corridor Project prepared in 2011 concluded that investment in high capacity public transport services will be needed as part of an investment strategy, in combination with State highway and local transport improvements.

10. For the public transport component, the 2011 Strategy concluded that heavy rail options would be expensive compared to a package incorporating bus services operating mainly on the existing State highway network. However the latter option is likely to be less effective in the long run. It therefore recommended the development of a public transport corridor that has the flexibility to accommodate the progressive development of attractive, high capacity public transport services in future across a range of options – including heavy rail.
11. State highway improvements include upgrades to the State highway 20A and SH20B corridors serving the Airport. The SH20A to Airport project will improve capacity by grade-separating the Kirkbride intersection. This is part of the Auckland accelerated package announced by the Prime Minister in 2013. A companion paper addresses a proposal to widen parts of this corridor to allow for a future rapid transit network (Board paper 16/06/1031 refers).
12. The link from Manukau to the Airport (via State highway 20B) has been identified as a high priority, and upgrades to this corridor will be the subject of a report to you in August 2016.



## HEAVY RAIL OPTION

13. The 2011 work identified a heavy rail connection along State highway 20B connecting into the main trunk line would face significant challenges in navigating State highway 20 and its interchanges, and then connecting in close proximity to the Manukau Branch line and Electric Multiple Unit train yard. This connection is likely to require a significant land take, and engineering issues relating to horizontal and vertical gradients are very problematic. In addition, the volume/frequency requirement for heavy rail means it is not scalable. Finally, heavy rail comes at a significantly greater cost than for bus rapid transit or light rail transit.

14. Work by Auckland Transport following the Sub-regional Strategy has not been able to demonstrate value for money from investing in a heavy rail option by 2046. The latest advice from Auckland Transport, comparing various rapid transit modes, signals a heavy rail line along State highway 20A could cost as much as \$2.4 billion with a benefit cost ratio of 0.6.
15. The heavy rail alignment is also significantly different within the Airport precinct when compared to other rapid transit options. It requires tunnelling and an underground station to serve the airport terminal. The different alignments have made the intent of the Sub-regional Strategy (to progressively develop up to heavy rail) problematic for the Airport company as they now have to hold options for two different routes over their land holding (one for a 100% at-surface option, bus or light rail; and the other a combined at-surface and underground option for heavy rail). This has prompted the Airport company to request clarity on the corridor, as this impacts their development plans.



## BUS AND LIGHT RAIL OPTIONS

16. The Auckland Transport work has identified that both light rapid transit and bus rapid transit offer similar transport benefits within the 30 year planning horizon as heavy rail, but at a significantly lower level of investment. The difference between light rail transit and bus rapid transit corridors won't impact immediate planning and development issues faced by the Airport company, allowing more time to consider optimal value for money between these two modes.
17. On the State highway 20A corridor (Airport to Onehunga), bus rapid transit or light rail transit are also the preferred options for investigation.
18. Auckland Transport is progressing work to develop a bus rapid transit option to the same level of detail as they have already developed for light and heavy rail options. This will allow a value

for money comparison between bus and light rail options, and will be submitted for consideration as part of the Auckland Transport Alignment Project. Auckland Transport has advised that their indicative cost for a light rail option is \$1.115 billion (with a benefit cost ratio of 1.72). They are still work to develop a cost estimate for a bus option.



## CONCLUSION AND NEXT STEPS

19. Based on the evidence to date – that a heavy rail option to the Airport would present poor value for money, and that better value for money options (bus rapid transit or light rail transit) are still available – we recommend that heavy rail is not included in further work to investigate options for a future rapid transit network from the Airport.
20. Auckland Transport will also brief their Board on this matter in June, and will recommend that heavy rail is discarded as an option.
21. This will not prejudice any future decision by the Transport Agency on whether (or not) to proceed with light rail or bus rapid transit. The priority and timing/staging of options for rapid transit networks (including any network from the Airport) will be considered as part of the Auckland Transport Alignment Project.
22. If you agree, we will communicate this decision to Auckland Transport, Auckland Council, and the Airport company in coming weeks.



## ATTACHMENTS

23. There are two attachments:
- Attachment 1: Reasons for recommendation
  - Attachment 2: Location map

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## ATTACHMENT 1: REASONS FOR RECOMMENDATION

The 2011 Sub-regional Strategy arising from the South Western Airport Multi Modal Corridor Project identified the need for high speed and high capacity public transport service from Auckland airport to the Central Business District.

The Strategy also identified the need for a progression plan for public transport, and suggested that in the short term shoulder-running buses would be the likely solution. As capacity of the system constrains effectiveness of the service, we would look to move to a higher capacity option of busway, light rail or heavy rail.

Auckland Airport is seeking confirmation by June 2016 about which rapid transit options will be further investigated, so that these can be accommodated in its immediate Airport expansion programme.

Auckland Transport estimates that a heavy rail line along State highway 20A could cost as much as \$2.4 billion with a benefit cost ratio of 0.6. Auckland Transport has identified that both light rapid transit and bus rapid transit would offer similar transport benefits within the 30 year planning horizon as heavy rail, but at a significantly lower level of investment.

We therefore recommend that heavy rail is not included in further work to investigate options for a future rapid transit network from the Airport.



## ATTACHMENT 2: LOCATION MAP

