

Auckland City Centre Rail Link Business Case Review

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Auckland City Centre Rail Link Business Case Review Report

The Business Case for the City Centre Rail Link proposed a rail tunnel serving the Auckland CBD and recommended next steps of lodging a Notice of Requirement (NoR) to protect the route and investigating funding and procurement.

Following a review of the Business Case, central government agencies agree that:

- the case for investigating funding and procurement has not been made, but Auckland Council could undertake a range of actions to provide greater confidence about the growth projections needed to make the project viable
- the wider mix of options for meeting transport needs in the Auckland CBD (of which rail would only be a part) have not been sufficiently explored
- there is a strategic case for lodging a NoR and it would make sense for Auckland Council to proceed with this

1. In November 2010, Auckland Council and Auckland Transport presented the Business Case for the CBD Rail Link (now the City Centre Rail Link (CCRL)) to the government. The project comprises a rail tunnel from Britomart to Mt Eden with three new stations at an estimated capital cost of \$2.4 billion (including additional rolling stock and additional network infrastructure).
2. The Minister of Transport asked the Ministry of Transport to lead a review of the Business Case with the Treasury. The Minister agreed that the Ministry of Transport should convene a working group comprising the Treasury, the NZ Transport Agency (NZTA), KiwiRail, Auckland Council and Auckland Transport.
3. All references to the Review in this report refer to the views of central government officials (the Ministry of Transport, the Treasury and the NZTA) unless otherwise stated. The report sets out where findings have been agreed between all organisations involved in the Working Group and identifies the alternative views of Auckland Council and Auckland Transport.

Strategic context

4. Auckland's current population of 1.4 million is forecast to grow to 2.1 million (or 40 percent of New Zealand's population) by 2041¹ with consequential impacts for transport demand. If unaddressed, growth in transport demand, particularly in the CBD, will increase congestion and travel times.

¹ 2010 Auckland Regional Land Transport Strategy.

5. The Auckland economy has considerable potential to make a greater contribution to New Zealand's economic growth. Increasing accessibility to the CBD will assist with improving Auckland's economic performance.
6. Auckland Council and Auckland Transport consider completing the CCRL by 2021 is critical to address constraints in the rail, bus and road networks within the Auckland CBD. They also consider the project will help achieve aspirations for a faster growing and larger Auckland economy, in particular, a stronger CBD with significant employment, residential and tertiary student growth, and improved quality of life.
7. The NZTA assessed the project against its low/medium/high strategic fit criterion and considers that the project has a 'medium' profile. The NZTA considers this could change to 'high' once it is clear how the project fits with the Auckland spatial plan and if more evidence could be provided on land use integration, how the project will attract new patronage, reduce congestion and better integrate with buses and ferries.

Background

8. The Business Case started out as preparation for route protection (NoR) following correspondence from the Minister of Finance, under the previous government, to the Chair of the then New Zealand Railways Corporation.
9. It later developed into a business case, but has not incorporated some of the elements that are required for significant funding requests to the government. All parties agreed that the Business Case did not meet the standards required for an application to central government for a funding contribution².

Project costs

10. The Review found the project costs in the Business Case to be largely sound. All parties agreed revised project costs at \$2 billion for construction costs of the tunnel, \$240 million for additional rolling stock needed at opening, and \$120 to \$130 million for additional rail network costs. This gives a total initial capital cost of \$2.4 billion.
11. Additional operational costs are \$18 million per annum (rising to \$37 million per annum from 2030 when further rolling stock is introduced). The net present value of capital and operating costs is \$1,699 million (up from \$1,580 million).

Transport benefits

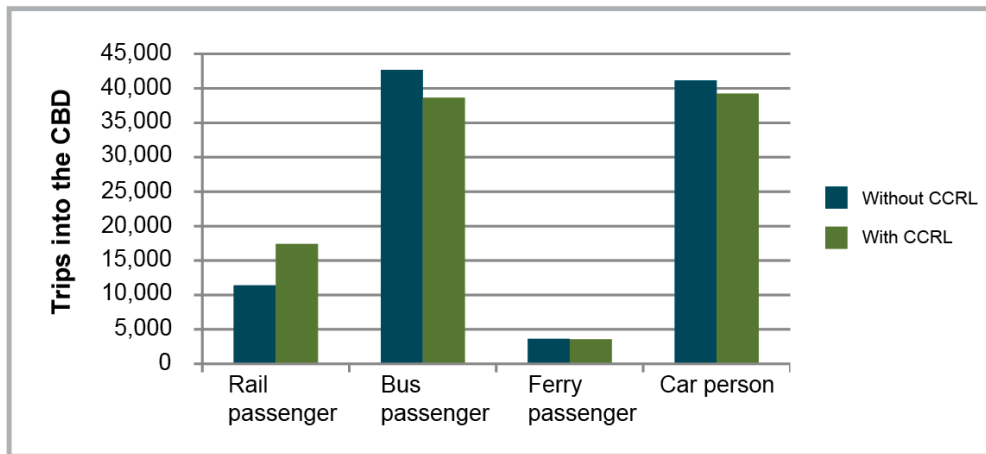
12. The Review assessed the project using Auckland Council's models and the regionally generated land use and transport forecasts included in the 2010 Auckland Regional Land Transport Strategy (ARLTS), which includes the CCRL.
13. The Review found that transport impacts in the Business Case were overstated. The CCRL will provide a relatively modest part of the solution to projected growth in demand for CBD trips. The project would cater for around

² The Business Case does not comply with the NZTA's Economic Evaluation Manual or the Treasury guidelines on Better Business Cases for Capital Proposals. The Treasury's guidelines were published in July 2010, part way through the preparation of the Business Case.

6,000 (approximately 19 percent) of the extra 32,000 car person and public transport passenger journeys expected into the CBD in the 2041 morning peak. It would remove approximately 4,000 bus passenger trips (approximately 10 percent of total bus passenger trips) and around 2,000 car person trips (5 percent of car trips) into the CBD. The majority of the increase in travel is expected to be met through bus trips.

14. Figure 1 provides a breakdown of projected change in trips into the CBD in the morning peak period in 2041 with and without the CCRL. This makes it clear that a wider and more cost effective set of solutions needs to be developed that deal with the whole of the transport demand faced by the CBD over the next 20 to 40 years.

Figure 1: Estimated CBD bound car person and passenger transport trips in 2041 morning peak



15. The Review assessed transport benefits at \$387 million compared to the Business Case's \$1,319 million. The Business Case and the Review both assume a further \$43 million in bus cost savings. The difference between these two figures is largely the result of correcting technical issues in the Business Case economic modelling and a more robust approach to calculating decongestion benefits.
16. The Review considered the analysis of potential alternatives to the CCRL set out in the Business Case. This analysis did not meet the Treasury's Business Case guidelines for evaluating significant capital projects that require Crown funding. It was also insufficient to conclude that the CCRL represents the most effective means of providing additional transport capacity into the CBD.

Auckland Council/Auckland Transport view on transport benefits

17. Auckland Council and Auckland Transport note that the Review has identified and corrected issues with the way that the transport benefits were estimated in the Business Case. They consider that, combined with a number of other initiatives not included in the Business Case, the benefits would be significantly greater than the Review concludes.
18. Towards the end of the Review, Auckland Council and Auckland Transport presented a new policy case which estimates transport benefits between \$1.2 and \$1.4 billion.

19. The Review's purpose was to assess the Business Case and there was insufficient time to consider the policy case as it was presented while the final report was being developed. Central government agencies note that it may make sense to apply some of the changes set out in the policy case, such as more park and rides, and reconfigured bus routes, to the future electrified network as well as the CCRL. This issue would need to be explored and clarified in any future business case.

Britomart and network constraints

20. The Business Case assumed that all growth on the rail network would cease in 2024, largely as a result of the Britomart bottleneck and the limited walking catchment around Britomart.
21. KiwiRail has advised that while the current rail network upgrade and electrification will meet the objective of generally reliable 10-minute peak frequencies, limited network resilience means operational risks will not be fully mitigated by these projects. These problems will be exacerbated by the proposed addition of a station at Parnell.
22. Auckland Council and Auckland Transport consider that the network will be operating at its maximum capacity once electrification is complete, which, when combined with future patronage growth, will lead to service delays across the network. This will result in reduced patronage growth and strengthens the case for early construction of the CCRL to improve the network's overall resilience.
23. The Review found that while there will be increases in standing times (with some reduced patronage growth), total capacity constraints on existing train lines and stations were unlikely to be exceeded until about 2026 for the Western Line and 2041 for the Southern Line, with no constraint identified for the Eastern Line. Capacity constraints will only apply for an hour during each of the morning and afternoon peak periods.
24. The Review concluded that the emerging constraints were not as significant as set out in the Business Case, and rail patronage would continue to grow beyond 2024 with the post 2013 network configuration.

Wider economic benefits

Additional jobs

25. The 2010 ARLTS includes Auckland's employment growth forecast for the CBD. This estimates that the number of full time employees in the CBD will grow from 63,800 in 2006 to 122,105 in 2041 — an increase of 58,305 (or 91 percent more than the 2006 figure). This will require an annual CBD employment growth rate of 1.9 percent per annum compared to the 1.7 percent per annum achieved between 1996 and 2006.
26. The Business Case estimated that:
- the CCRL would result in 22,000 additional full time equivalent jobs locating in the CBD (above the ARLTS's forecast of 58,000) by 2041. This would increase total CBD employment to 144,000 jobs, which is more than double the ARLTS's estimate for 2006 CBD employment.

- these additional jobs would result in urban regeneration benefits, a form of wider economic benefits (WEBs), of \$3,333 million
27. Estimating additional employment directly attributable to transport infrastructure projects is difficult as there is no established theoretical basis and limited empirical data. Although some change seems likely, the evidential basis for claiming large job location effects as a direct result of the project is weak.
 28. Given future constraints on transport accessibility into the CBD, the Review considered that the additional patronage provided by the project could support up to a maximum of 5,000 full-time jobs locating into the CBD, within the ARLTS forecast of 58,000 additional jobs. This figure has been used by the Review to calculate WEBs from job relocation, which are assessed at \$148 million.
 29. Auckland Council and Auckland Transport consider that the project will generate in the range of 5,000 to 20,000 CBD jobs in excess of Auckland's current ARLTS forecast. These numbers are reflected as low and high growth scenarios in the alternative policy case proposed by Auckland Council and Auckland Transport. Achieving these growth scenarios requires an average annual growth rate of 2.0 to 2.3 percent, which is well above historical trends.

Agglomeration benefits

30. The Business Case estimated agglomeration benefits of \$185 million. Agglomeration benefits (essentially the benefits to firms from increases in effective employment density) are a form of WEBs over and above conventional transport benefits.
31. The combined figure from conventional transport and agglomeration benefits is used to report on all transport projects, which are assessed for funding from the National Land Transport Fund.
32. The Review estimated agglomeration benefits at 33 percent of conventional transport benefits, or \$128 million.

Other wider economic benefits

33. The NZTA has undertaken an extensive research programme to develop a robust, international best practice, methodology for assessing WEBs beyond agglomeration. While this methodology has yet to be approved for project assessments by the NZTA Board, all parties agreed to use this approach to assess WEBs from imperfect competition, increased labour supply and job relocation.
34. The Review assessed these benefits at \$177 million, made up of \$148 million from job relocation, \$19 million from additional labour supply and \$10 million from imperfect competition benefits.

Auckland Council/Auckland Transport view on wider economic benefits

35. Applying the WEBs and agglomeration calculations to the benefits and employment assumptions included in the new Auckland Council and Auckland Transport policy case 5,000 (low) and 20,000 (high) employment growth scenarios would result in total WEBs of between \$628 million and \$1,146 million respectively.

36. Auckland Council and Auckland Transport officers also consider that the Business Case and subsequent additional work has only partially captured the potential WEBs. This is because it has not assessed the growth in the regional economy through efficiency gains in Auckland's spatial economic structure as a result of the project. They estimate that this growth could result in up to \$1,300 million in benefits for the project, although they note that only a component of this number is additive to other benefits.
37. Auckland Council and Auckland Transport have advised that combining the conventional transport benefits from their policy case, and estimating WEBs based on the policy case equates to total benefits of \$1,863 million or up to \$3,868 million if regional economic benefits are included. This equates to a total benefit to cost ratio of between 1.1 and 2.3.
38. Central government officials have considered these additional WEBs in light of best practice and conclude that due to a number of evidential and methodological issues they are not appropriate for inclusion in the economic assessment.

Further information

39. Further information is provided in the appendices and the workstream reports. Background information is outlined in Appendix A, costs in Appendix B, and project effectiveness and benefits in Appendices C through F. The benefit to cost ratio (BCR) calculation and sensitivities are presented in Appendix G, with potential timing of the project discussed in Appendix H.

Conclusion

40. The Review estimates a BCR from the project of 0.4, including additional WEBs agreed as part of this Review. The combined benefits and costs are set out in Table 1 below.

Table 1: Overall costs and benefits of the City Centre Rail Link

Benefit category	Benefits, \$m, NPV		Review costs (\$m, NPV)	Review benefit to cost ratio
	Business Case	Review		
Transport benefits	1,319	387		
Bus cost savings	43	43		
Agglomeration benefits	185	128		
Combined total (consistent with NZTA methodology)	1,547	558	1,699	0.3
Imperfect competition	Not estimated	10		
Labour supply	Not estimated	19		
Productivity gains from job relocation	3,333	148		
Total including WEBs outside of the NZTA's Economic Evaluation Manual	4,695	735	1,699	0.4

41. Overall, the Review concludes that, on current projections, the net benefits of building the CCRL are much less than the expected costs.
42. The Review concludes that the case for the CCRL does not justify further consideration for central government funding at this point in time because the project does not currently represent an economically effective investment.
43. With the additional capacity from electrification still to arrive, significant patronage growth is needed to meet the targets set for electrification. Therefore patronage losses due to the Britomart constraint are expected to be some time away and the Review concludes the project is not urgent.
44. It is not yet clear that the CCRL represents the most appropriate solution for providing additional transport capacity into the CBD, or that the opportunity costs associated with an investment of this size are justified. The Review found that a full examination of alternatives and of the strategy for meeting the whole of transport demand in the Auckland CBD is also needed.

Improving the case for the CCRL

45. Ultimately, many of the key justifications for the project reflect expectations about the ability of rail investment to lead rail patronage demand, residential intensification, and re-generation of the Auckland CBD. Evidence of this occurring as a result of the major current investment in rail, and as a result of current spatial planning, would strengthen the case for reconsidering the merits of the CCRL.
46. The Review concludes that there is a range of actions that could be undertaken or facilitated by Auckland Council and Auckland Transport which will improve confidence in considering outcomes expected from the CCRL.

- Finalisation and implementation of the Auckland spatial plan and City Centre Masterplan to establish achievable growth projections for the CBD and to quantify where the growth projected for the CBD will occur.
 - Demonstrating commitment to resolving current and emerging CBD access issues, for example by improving bus operations and addressing capacity issues.
 - Development of a robust and achievable multi-modal programme for transport in the CBD, which considers a thorough analysis of alternatives and identifies the optimal mix of modes to meet demand.
 - Beginning implementation of large scale residential developments along the rail corridors.
 - Implementation of additional park and ride sites, and changes to bus feeder services where appropriate in terms of overall public transport demand.
47. The implementation of these measures, combined with rail patronage above forecasts and a robust economic case, would provide a strong signal that the conditions are in place to drive the necessary benefits from the project and therefore to reconsider the case for investment.

The case for route protection now

48. While the Review has concluded that the project currently does not warrant consideration for a central government funding contribution at this point in time, all organisations agree that there are three key reasons why it would make sense for Auckland Council to undertake a NoR process.
- The project is a strategic priority for Auckland Council and Auckland Transport and has been assessed by the NZTA as medium strategic fit against the NZTA criterion.
 - It will provide certainty about development on sites along the proposed route and avoid inappropriate development that would need to be undone or modified in order to build the CCRL. Failure to designate early could prevent the construction of the CCRL in the future for both legal and practical (engineering) reasons.
 - There are a number of key elements of policy and planning within Auckland Council's control which could act to significantly shift the expected benefits and their timing.

The Review concludes that it would make sense for Auckland Council to proceed with NoR, provided it is prepared to meet the costs of doing so.