



30 October 2020

Senior Transport Planner
Auckland Transport
Level 6, 20 Viaduct Harbour Avenue

Peer Review – Airport to Botany and 20Connect Combined SSBC

1-C1854.01

Dear [REDACTED]

This letter summarises our check of the combined Airport to Botany and 20Connect Single Stage Business Case (A2B + 20Connect SSBC), prepared by Aurecon for Auckland Transport (AT).

Scope of the review

The peer review has been undertaken in accordance with the Waka Kotahi NZ Transport Agency Peer Review Guidance and funding application / business case requirements. With the SSBC now joint with 20Connect, this includes a check of the following elements:

- Conformity
- Credibility
- Choice of do-minimum
- Identification and selection of alternatives and options
- Results alignment rating
- Risk assessment, analysis and mitigation.

Peer review comments from May 2020 have also been checked against the combined SSBC to determine if they have been addressed.

A review of the cost estimates and economic assessment have been excluded as these are being undertaken by third parties.

Summary of peer review findings

In general, the SSBC has been produced to a high quality and we are pleased to see that the Covid-19 impacts on demand have been addressed. Most of our peer review comments only require minor edits to the document, the most noteworthy findings are outlined below:

- Outstanding items that are not addressed or responded to from the previous review:

- [REDACTED]
- [REDACTED]

-
- | Government | Percentage of respondents |
|---------------------|---------------------------|
| Current government | ~80% |
| Previous government | ~20% |

Please do not hesitate to contact us, should you have further questions or comments regarding the peer review. We would be happy to discuss it with the project team.

10. *Journal of the American Medical Association*, 2000; 283: 2686-2692.

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Document Title	Airport to Botany Rapid Transit and 20Connect Single Stage Business Case – Southwest Gateway Programme
Document Codification:	502334-8000-REP-JJ-0007
Document Revision:	A
Date:	25.11.2020

Item No.	Document Filename/Reference	Reviewer's Comments	Reviewer	Date (commented)	Comment Category	Source (incl. date comment received)	Author's Response (Aurecon)	Author	Date Responded	Agreed Outcomes	Open / Closed
1	Throughout SSBC	OUTSTANDING ISSUE FROM PREVIOUS REVIEW: References to both Eastern Busway project and AMETI project still exist throughout the document. They refer to the same project so should be consistent to avoid any confusion. [Phil Harrison 07/5/2020]	Phil Harrison	07/5/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. Updated to 'Eastern Busway' throughout SSBC	Aurecon Team	20/11/2020	Refer to author's response.	Closed
2	Management Case	OUTSTANDING ISSUE FROM PREVIOUS REVIEW: Assumption that AIAL will continue with its share of the project in parallel needs to be confirmed in light of Covid-19 effect on AIAL operation and income. Is there a contingency plan if AIAL pull out or defer? [Phil Harrison 07/5/2020]	Phil Harrison	07/5/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Comments #2, #17 and #33 related. Funding availability from Southwest Gateway programme partners (Waka Kotahi, AT, Auckland Airport, and Te Ākitai Waiohū) is a strategic risk discussed in the Commercial Case. The AIAL investment is critical component of the current recommended option, and is recognised as a risk to monitor. However, the staging plans and investment gateway approach are developed in a way such that other components can be progressed if required.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
3	-	Considering the number of acronyms throughout the SSBC, it might be worth inserting a glossary of terms or abbreviations page at the beginning to make it easier for the reader. [Hayley Byun – 20/10/2020]	Hayley Byun	20/10/2020	1	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Included	Aurecon Team	20/11/2020	Refer to author's response.	Closed
4	Throughout SSBC (pages 143, 212, 213, 227, 247)	There are several references to "Section 0" throughout the SSBC which lead to different sections and are not clear what they are referring to. There should not be a Section 0. [Hayley Byun – 20/10/2020]	Hayley Byun	20/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	removed/updated	Aurecon Team	20/11/2020	Refer to author's response.	Closed
5	Executive Summary, figure numbering	Figure numbering in the executive summary is prefixed with 1, the same as for Part A section 1. This means there are figures in the document with the same figure number. Prefix should probably be 0 or use different numbering system for executive summary figures. [Nerissa Harrison – 24/10/2020]	Nerissa Harrison	24/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Agree. Updated, prefixed with 0	Aurecon Team	19/11/2020	Refer to author's response.	Closed
6	Executive Summary, page 1	First introductory sentence of the executive summary is very lengthy: "The Airport to Botany Rapid Transit (A2B) and 20Connect projects aim to greatly improve multi-modal access for south and east Auckland (which includes some of Auckland's most socio-economically deprived communities), significantly enhance access to Auckland International Airport and major employment areas and support urban regeneration and whole-of-Government investment in jobs, housing and education in Manukau Central." Suggest breaking up this sentence. [Hayley Byun – 27/10/2020]	Hayley Byun	27/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. Sentence structure amended.	Aurecon Team	24/11/2020	Refer to author's response.	Closed
7	Executive Summary, page 3	Figure 1-2 is orphaned from its caption. [Hayley Byun – 20/10/2020]	Hayley Byun	20/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed

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8	Executive Summary, page 5 & Section 4.1, page 53	The word 'Current' is capitalised in the 3rd bullet point under combined problem statements. [Hayley Byun – 20/10/2020]	Hayley Byun	20/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated to 'The current...'	Aurecon Team	23/11/2020	Refer to author's response.	Closed
9	Executive Summary - Options assessment, page 6	The Options assessment section provides very little information. For example, the sentence, "A comprehensive assessment was carried out. A range of potential options were tested as to their ability to meet the objectives." tells the reader nothing about the assessment. Either delete generic option assessment text, expand, or reference to the relevant appendices or sections for further detail. [Nerissa Harrison – 24/10/2020]	Nerissa Harrison	24/10/2020	1	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Expanded to include greater detail on assessment approach	Aurecon Team	23/11/2020	Refer to author's response.	Closed
10	Executive Summary, page 7	Sentence "Walking, cycling and multi-modal facilities to complement the public transport system, providing quality to access stations, which could be expanded to further improve accessibility in the area" should be changed to "Walking, cycling and multi-modal facilities to complement the public transport system, providing quality access to stations, which could be expanded to further improve accessibility in the area". Also, it is not clear what specific 'facilities' are being referred to. Is it paths, in which case how is it different to the following sentence? Or is it parking and other support facilities? In which case, specify as such. [Nerissa Harrison – 24/10/2020]	Nerissa Harrison	24/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. Updated with some examples of specific facilities.	Aurecon Team	19/11/2020	Refer to author's response.	Closed
11	Executive Summary, page 13/14	'Horizons' is mentioned for the first time in Table 1-2 (page 13) but is introduced with more detail under 'Implementation planning' (page 14). Providing more context around horizons prior to Table 1-2 would be useful. [Hayley Byun – 20/10/2020]	Hayley Byun	20/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Agree. Added year for context.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
12	Executive Summary, page 14	Under 'Risks', "However, some 286 properties are likely to affected by the..." should be "However, some 286 properties are likely to be affected by the..." [Hayley Byun – 23/10/2020]	Hayley Byun	23/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
13	Section 12.10.1, page 218	The existing layout/style of bullet points currently do not reflect that additional catchments fall into two categories. Suggest amending this format to make it clearer. [Hayley Byun – 20/10/2020]	Hayley Byun	20/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated and added blank line for emphasis.	Aurecon Team	19/11/2020	Refer to author's response.	Closed

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14	Table 1-1 Investment objectives and benefits, page 5	Waka Kotahi defines investment objectives as ...” Take: [the effect of the problem] + [the wording of the benefit] + [the baseline/ estimated outcome from investment of the KPI] = SMART investment objective (The outcome is not the investment objective. The outcome is ultimately the benefit in less detail.)” There is some variation across the industry as to how investment objectives are written. The investment objectives written in this SSBC are simplified and do not strictly follow the Waka Kotahi definition but that makes for easier reading and when paired with ILM appendix it is clear what the full SMART investment objective are – so we agree with this approach. However, the value of reporting both the simplified investment objectives and benefits is low, so it could be simplified by reporting just one in the main body of the SSBC. Also, a reference to the ILM appendix for the SMART objectives may be useful. [Nerissa Harrison – 24/10/2020]	Nerissa Harrison	24/10/2020	1	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated with reference to Appendix A ILM with SMART objectives. Our interpretation is that she is referring to the business case approach guidance: https://www.nzta.govt.nz/assets/planning/process/business-case-approach/5-ilm-overview.pdf . "It will also help to ensure that the objectives are SMART (ie specific, measurable, achievable, relevant and time-bound). "	Aurecon Team	17/12/2020	Refer to author's response.	Closed
15	Section 1.0, page 19/20	Why are potential improvements mentioned in the introduction? All other parts of the introduction talk about context and touch on problems not solutions. “Possible improvements include: Extending and optimising the existing and future state highway and RTN Identifying ways to influence the demand on the network and optimise active and public transport mode uptake in line with wider objectives Providing more choices as to how people and goods travel safely to and from the study area Improving the capacity and connections on, or alongside, the state highways for cars, trucks, buses and bicycles” Recommend deleting the quoted text above. [Nerissa Harrison – 24/10/2020]	Nerissa Harrison	24/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Potential improvements gives the reader background information/context, and links to the Programme Business Case. Based on peer reviewer and AT preference, we will delete this.	Aurecon Team	17/12/2020	Refer to author's response.	Closed
16	Section 2.2, 2.3, 2.4, 2.5 headers	Section 2.2, 2.3, 2.4, 2.5 headers are very long, which makes for difficult reading. Could they be simplified? For example, Section 2.2 could be “2.2 A Large gap on the RTN” and then the first sentence of the section could expand out to the full issues “There is currently a large gap in the RTN resulting in a lack of rapid, efficient and reliable public transport and poor mode share in the south-west, south and east of Auckland”. [Nerissa Harrison – 24/10/2020]	Nerissa Harrison	24/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. Updated with shorter headings.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
17	Section 2.4.3 Effects on state highway and Section 4.4.4	It is good to see the capacities compared with demands; however, there is no commentary about the impact of the AIAL areas on these capacities. The capacity of SH20A and 20B is dependent on what happens within the airport precinct (especially in the AM peak) ie capacity is only as good as the weakest link (bottleneck point). If AIAL don't invest in their end of the network, does this limit the potential capacity improvement in the AM peak? May be best addressed when discussing the solutions and capacity gained. [Nerissa Harrison – 24/10/2020]	Nerissa Harrison	24/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Comments #2, #17 and #33 related. Funding availability from Southwest Gateway programme partners (Waka Kotahi, AT, Auckland Airport, and Te Ākitai Waiohua) is a strategic risk discussed in the Commercial Case. The AIAL investment is critical component of the current recommended option, and is recognised as a risk to monitor. However, the staging plans and investment gateway approach are developed in a way such that other components can be progressed if required.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
18	Section 2.4.3 Effects on state highway and Section 4.4.4	It would be good to see what components are restricting capacities ie what are the bottleneck points? For example, a merge from 2 to 1 lane typically has a lower capacity than the single lane, so this would be a bottleneck point. Similarly, signalised intersections typically have lower capacities than the approach lanes because of the red time. It's not clear where the capacity restrictions are on each SH and therefore what solutions might be viable. [Nerissa Harrison – 24/10/2020]	Nerissa Harrison	24/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Agree. To be updated with text/diagram on known network capacity constraints which include merges, signalised intersections and ramp signals.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
19	Section 2.4, page 33	Reference to ‘Section 2.4.3’ in the paragraph is incorrect and should be 2.4.1. [Hayley Byun – 27/10/2020]	Hayley Byun	7/10/2020]	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed

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20	Section 4.4.1 Poor East-West travel choices	The following sentence is lengthy: The 45-minute public transport catchment for the airport in the base case scenario, so includes the AirportLink bus service proposed in 2021 (Figure 4-18) excludes all of Auckland's east and south and only parts of the central Isthmus and the immediate suburbs around the airport such as Māngere and parts of Papatoetoe". Suggest rewriting or breaking this up for clarity of the reader. [Hayley Byun –29/10/2020]	Hayley Byun	29/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted and updated.	Aurecon Team	19/11/2020	Refer to author's response.	Closed
21	Section 4.3.2, page 64	Footnote 48 within the first paragraph requires a format fix. [Hayley Byun – 27/10/2020]	Hayley Byun	27/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
22	Section 4.4.4, page 80	First sentence of the last paragraph is missing a reference to Figure numbers 4-25, 4-26 and 4-27: "illustrate the increase in hourly traffic volumes and growing peak period spread along SH20, SH20A and SH20B between 2013 and 2018". [Hayley Byun – 20/10/2020]	Hayley Byun	20/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	19/11/2020	Refer to author's response.	Closed
23	Section 4.4.5 Figure 4-30, page 84	SH labels in the figure (20A, 20 20B) are not clear. [Hayley Byun – 27/10/2020]	Hayley Byun	7/10/2020]	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	24/11/2020	Refer to author's response.	Closed
24	Section 5.2.3, page 1-2	The content of this section from “The IAF also provides guidance on priorities, for the “Regional, local road and state highway improvements” activity class (p. 24). Does not relate to environment and so should have a separate header. [Nerissa Harrison – 28/10/2020]	Nerissa Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Agree. To update and restructure assessment profile section to better integrate “Regional, local road and state highway improvements” activity class.	Aurecon Team	23/11/2020	Refer to author's response.	Closed

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25	Section 10.3.1 Page 119, and Sections 12.4.3 and 12.4.4	The statement is made that ... "In line with the SWGP operating principles and the NOP, all long list options include: widening of SH20 north of SH20A to eight lanes (A) and widening of SH20 between SH20A and SH20B (B), principally, to enhance network efficiency and support the function of the WRR; " but it is not clear why these measures are required to meet the principles e.g. can benefits on SH20a and B only be realised with widening of SH20? Is there a specific constraint that must be addressed? These have been adopted across all options without clearly stating the strong case for the widening. I would expect to see something to more clearly demonstrate the critical nature of these elements that means they cannot be excluded from any option, especially as they are so substantial – the omission of any assessment is stark when compared to the level of assessment across other aspects of the project. There also appears to be no comment or consideration of what the additional lanes should function as T2/T3/bus or just general traffic. A reference to the significantly improved accessibility mentioned in the Transport planning longlist assessment (REF: 501094-4401-TEC-KK-0010) would help but still doesn't answer the question of lane use. [Nerissa Harrison – 28/10/2020]	Nerissa Harrison	28/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Comment #25 and #76 related. Noted. Additional options that excluded widening of SH20 (between SH20A and SH20B) were assessed in the shortlist stage. For some relevant technical notes relating to SH20 widening please refer to Appendix N2 - 20Connect Design Philosophy Statement (Appendix A - Transport Modelling Report and Appendix C - SH20 Widening Assessment (SH20A to Puhinui Road) Technical Note) We will update the SSBC to include/demonstrate key considerations, such as: -Additional traffic demand on SH20 with the introduction of SH20A to SH20 ramp. -Predicted future traffic volumes, congestion, and travel time along SH20 In addition to the above, the widening of SH20 is proposed in the last horizon (Horizon 5 in 2040), hence allows time for further confirmation of the preferred option following the monitoring of demands and effectiveness of the earlier PT focused interventions, prior to investment. Lane classification (T2/T3/bus/GT etc) can be and should be investigated at a later stage closer to implementation, following the review of the effectiveness (e.g. induced mode shift) of the earlier PT interventions. Staging plans and the investment gateway approach are further outlined in the Management Case.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
26	Section 10.4.1, page 127	"By the 2040s, in order to maintain a reliable service of no more than 20 buses per hour, a large, high capacity BRT vehicle will be required. In Figure 10-1, the green bars indicate the "desirable" headways (3-5 minutes), while in blue headways are at a level that would result in poor reliability with an at-grade system. The vertical red lines indicate forecast demands by decade. All figures are hourly." - It would be useful to also explain what the yellow bars indicate as well. [Hayley Byun – 23/10/2020]	Hayley Byun	23/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. Included description for yellow bars - 'yellow headways present low service levels that would result in longer passenger wait times'	Aurecon Team	24/11/2020	Refer to author's response.	Closed
27	Section 10.4.5, page 132	Minor typo under bullet point 'B3 Puhinui to Manukau via Ronwood, B5 Puhinui to Manukau via Manukau Station' - 'progresses' should be 'progressed'. [Hayley Byun – 23/10/2020]	Hayley Byun	23/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	24/11/2020	Refer to author's response.	Closed
28	Section 10.5.7, page 146	Formatting error regarding reference to 'Figure 10-6' under the 'Emerging preferred option' sub-heading. [Hayley Byun – 27/10/2020]	Hayley Byun	7/10/2020]	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	24/11/2020	Refer to author's response.	Closed
29	Section 10.5.8, page 150	When introducing the summary of the shortlist summary assessment, a bit more written explanation regarding the ranking system provided in Tables 10-10 and Table 10-11 would be useful. This will make it more apparent for the reader what '1', '2' and '≤' means. [Hayley Byun – 27/10/2020]	Hayley Byun	7/10/2020]	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed

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30	Section 10.5.7 and Section 10.5.8	The shortlist assessments of the SH improvement and RTN improvements are presented in different table formats, with the RTN showing scoring and the SH improvement not. This style change makes for slightly more difficult reading than if they were in the same style. [Nerissa Harrison – 28/10/2020]	Nerissa Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted, this is as a result of the business cases being undertaken separately but in parallel. We will add the shortlist MCA summary in the supplementary information document.	Aurecon Team	17/12/2020	Refer to author's response.	Closed
31	Section 10.5.8 Table 10-11, page 152/153	First column labelled as KPI, but it is an objective or benefit. [Nerissa Harrison – 28/10/2020]	Nerissa Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
32	Throughout the SSBC – e.g. Section 11.5 Rapid transit corridor, page 161	There appears to be mixed use of references to 'RTN corridor' and 'RTC route'. For example, 'RTN corridor' is mentioned in the last paragraph of page 161, but figures 11-3 and 11-4 refer to a central-running RTC route and side-running RTC route respectively. Suggest sticking with one throughout the SSBC for consistency. [Hayley Byun – 28/10/2020]	Hayley Byun	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Agree. Suggest update to 'RTC' - rapid transit corridor. RTN also used in different context.	Aurecon Team	17/12/2020	Refer to author's response.	Closed
33	Section 12.3.1, page 192	States "There is a merge remaining east of the Pūkaki Creek Bridge that will cause time delays, reduced capacity and reliability" but presumably the preferred option doesn't address capacity issues west of the bridge (which is AIAL), so there is still a bottleneck point if AIAL don't make improvements ie the bottleneck has been shifted not removed. Should it be noted that its only worth widening bridge when AIAL come to the party and do work on their side? [Nerissa Harrison – 28/10/2020]	Nerissa Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Comments #2, #17 and #33 related. Funding availability from Southwest Gateway programme partners (Waka Kotahi, AT, Auckland Airport, and Te Ākitai Waiohū) is a strategic risk discussed in the Commercial Case. The AIAL investment is critical component of the current recommended option, and is recognised as a risk to monitor. However, the staging plans and investment gateway approach are developed in a way such that other components can be progressed if required.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
34	Section 12.3.1 Figure 12-13, page 193	Assume greyed out works west of bridge are AIAL works. It would be worth pointing this out on diagram. [Nerissa Harrison – 28/10/2020]	Nerissa Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Greyed out area represents indicative network. Refer to Figure 1-2 for project partner network elements.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
35	Section 12.3.2, page 194	Not sure what the first bullet point means: "Achieves a balance of general traffic and public transport provision on the corridor ". Assume this means provide for high quality public transport whilst not reducing general traffic and freight capacity. [Nerissa Harrison – 28/10/2020]	Nerissa Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated to 'Provides high quality public transport whilst not reducing general traffic and freight capacity'.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
36	Section 12.2.3, page 185	Reference to 'Figure 12-6 and Figure 12-7 A2B cross-section -' should be corrected to 'Figure 12-6 and Figure 12-7'. [Hayley Byun – 28/10/2020]	Hayley Byun	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed

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37	Section 12.1, Figure 12-1	Suggest reviewing colour coding against key. A2B shown in blue same colour as SH in key, while other proposed rapid transit lines are in red. This is the same as Figure 12-4. [Phil Harrison 28/10/2020]	Phil Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. To update with more clarify for next issue of the business case.	Aurecon Team	17/12/2020	Refer to author's response.	Closed
38	Sections 12.2.1 and 12.2.2, pages 198 and 199	Section 12.2.1 suggests patronage demand requires 4 min headway, 12.2.2 states 3 min headway. Should be consistent. Should also state if 2,000 people per hour is one- or two-way demand. 12.2.5 is back to 4 min. [Phil Harrison 28/10/2020]	Phil Harrison	28/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated to 3 minutes. Will do a sweep of SSBC to ensure consistency.	Aurecon Team	19/11/2020	Refer to author's response.	Closed
39	Section 12.2.5 Figure 12-8	PM Peak and Inter Peak patronage graphs would be valuable to compare and assess demand differences across the day. [Phil Harrison 28/10/2020]	Phil Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Ok. Will add PM and interpeak graphs.	Aurecon Team	17/12/2020	Refer to author's response.	Closed
40	Section 12.4.2 page 196	<i>“Southbound freight movements from the Airport Oaks/Ascot area will only travel through three signalised intersections instead of eight” should say “up to eight”.</i> [Phil Harrison 28/10/2020]	Phil Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated to 'up to eight'.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
41	Section 12.4.4	Should this section not also note “The improvement will involve the addition of a pedestrian/cycle shared path.” As for 12.4.3? [Phil Harrison 28/10/2020]	Phil Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
42	Section 12.5	Have the authors forecast cycle or pedestrian flows? Are they certain that shared paths are the most appropriate form to cater for potential flows into the future, eg compared to a segregated facility for increased safety? [Phil Harrison 28/10/2020]	Phil Harrison	28/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Regarding forecast demands, yes, refer to Appendix N2 - 20Connect DPS (Appendix E Walking & Cycling Strategy Technical Note and Appendix F Walking & Cycling SH20 Options Technical Note). High level forecast cycle demand was undertaken via EEM and GIS forecast population supplemented with a comparison of similar facilities in Auckland. The assessment suggests that shared paths along SHs are appropriate. Flow's Southwest Gateway Walking and Cycling Improvements Economic Benefit Evaluation also provides forecast cycling and pedestrian demands for the full study area (A2B and 20Connect). These forecasts and therefore preferred treatment align with the earlier assessment outlined above. We will provide this as an appendix to the economics with next issue of SSBC. We will add commentary on cycle model work completed, and cross-reference to technical report.	Aurecon Team	17/12/2020	Refer to author's response.	Closed
43	Section 12.6.1 Figure 12-22, page 200	Figure is orphaned from its caption. [Phil Harrison 28/10/2020]	Phil Harrison	28/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed

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44	Section 12.6.2 Figure 12-23, page 202	Text and Figure should note this is the peak demand section between Airport and Puhinui rather than infer it may be all along the route. Also the figure indicates demand above capacity for AirportLink (H1) service, but this is because of straight line interpolation of demand between 2018 and 2028. The demand in 2028 is substantially due to improved service frequency and coverage so it is very unlikely to increase steadily from 2018 as indicated – this should be noted in text. Is there no forecast demand arising from opening of Puhinui and associated STAAI improvements? [Phil Harrison 28/10/2020]	Phil Harrison	28/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated text, "In reality, demand is unlikely to trend linearly, and will rather increase directly as a result of future interventions, like the introduction of the Airport to Botany medium term service (H2). "	Aurecon Team	19/11/2020	Refer to author's response.	Closed
45	Section 12.7.3, page 204	<i>"the do minimum for the Medium Term involves a new bus route between Manukau and Botany via Te Irirangi Drive, with stops at each of the long term A2B station locations"</i> Is that not the medium term recommended option? [Phil Harrison 28/10/2020]	Phil Harrison	28/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated. Do-min includes STAAI and existing route 35.	Aurecon Team	20/11/2020	Refer to author's response.	Closed
46	Section 12.7.4, page 205	Under "Stations". Should note importance of these being the long term station locations, which gives certainty to the public and developers for first wave TOD. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated to include 'long term', and 'induce early TOD along those stations'.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
47	Section 12.7.4 Figure 12-27, page 206	Figure and caption missing. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Figure and caption both show up on our versions, please review and let us know.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
48	Section 12.7.4, page 207	Text at start of page 207 – missing text page 206? [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Page 206 shows up on our versions, please review and let us know.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
49	Section 12.7.4 Figure 12-28, page 207	Figure needs units (mins) and reliability / variability needs explanation of measurement (standard deviation?) and method of calculation. This may exist on blank p206? [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Agree. Units and measure added in graph. Travel time in minutes, and variability in 85%ile - 50%ile.	Aurecon Team	20/11/2020	Refer to author's response.	Closed
50	Section 12.7.6, page 208	This section would benefit from including an introductory sentence prior to Table 12-3 which outlines the A2B medium term cost estimates. [Hayley Byun – 23/10/2020]	Hayley Byun	23/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed

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51	Section 12.8 Figure 12-29, also 12.8.5 heading	To be precise, outcome should refer to Western Ring Route not Road. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	20/11/2020	Refer to author's response.	Closed
52	Section 12.8.2, page 210	Is there not a quantification in access improvement? Bullet 4 missing a number of additional more Aucklanders. Also rewrite this bullet. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. Quantification is provided in Section 12.10 for various KPIs to avoid repetition. Updated bullet point.	Aurecon Team	20/11/2020	Refer to author's response.	Closed
53	Section 12.8.6, page 211	Bullet 1 and footnote 110, why Horizon 4 model and not 5 used to forecast this? [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. We will provide H5 CO2 emissions also.	Aurecon Team	17/12/2020	Refer to author's response.	Closed
54	Section 12.9.1, page 212	Journey time and Reliability section. Second sentence: "In many cases, journeys by public transport are expected to be halved". Assume should say "journey times"? Otherwise not much of a benefit. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated to 'journey times'.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
55	Section 12.9.1, page 213, and 4 other instances	Mode Share section. Refers to Section 0? Plus 4 other instances [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	To update for next issue of SSBC.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
56	Section 12.9.2, page 213-214	Daily Traffic Flow difference. "Southbound traffic volumes along SH20 will reduce by approximately 2,600 vehicles due to rerouting". Can the author confirm all rerouting is on to SH20a or SH20B (ie no rerouting onto local roads is expected) as this is an important difference. Are there any significant increases or decreases on the local road network predicted? (Now Found in Fig 12-38), refer? [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Added reference to Figure 12-38. Most rerouting is on to SH20A and SH20B, with very minimal rerouting on local road. Diagram shows key flows for emphasis. For more detailed demand flow diagram, refer to Appendix L of Appendix N2 20Connect Design Philosophy Statement. Will add cross-reference to relevant appendix.	Aurecon Team	17/12/2020	Refer to author's response.	Closed
57	Section 12.10.1, page 217	Last line, amend to order of magnitude. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
58	Section 12.10.1, page 220	"vulnerable people in terms of socio-economic, age, physical and mental deprivation" Not "depravation", could use deprivation or reword. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	20/11/2020	Refer to author's response.	Closed

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59	Section 12.10.2, page 222	Figure 12-34 and text – shows one travel time for general traffic – is this do min or with A2B / 20Connect? Presumably they are different? Should both not be shown here? KPI is not just about PT travel time. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Travel time for general traffic is existing. Refer to Section 12.10.3 for general traffic travel times along SH20B. We can obtain general traffic travel time from airport to Botany. We will also update graph for clarity.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
60	Section 12.10.2, page 222	Capacity and Demand. "managed through provision of a combination of increased headways to a maximum of 3 minutes" Should be decreased headways and a minimum of 3 minutes. (Or an increased frequency to a maximum of 20 bph) [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
61	Section 12.10.3 Table 12-7, page 226	A number of KPIs are not reported on in this sections, such as Vehicle travel time for key journeys: City-Airport, Papakura-Airport, Botany-Airport, Albany-Airport, Westgate-Airport. If these are KPIs, should they not all be reported on rather than just a selected few? [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. We reported on KPIs that are most useful for the assessment and business case. They are reported primarily within the most relevant study area extent. Other journeys extend beyond the study area/modelling extent. As no interventions are proposed outside of this area associated with this business case, the routes chosen are therefore considered appropriate.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
62	Section 12.10.3, page 228	Fig 12-39. Not clear what this means - Does this show changes compared to do min or to Horizon 3? Shows increase in traffic on Massey Rd north of SH20, but not quantified. Inset includes forecast flows on Massey Rd, should indicate if north or south of SH20 and would be useful to also show Horizon 3 flows on these roads for comparison. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. Changes are compared to pre Horizon 5 (ie. compared to post Horizon 4). There are minor increases in traffic on Massey Rd. Stats are shown for key flows for emphasis and clarity. Can further clarify in text.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
63	Section 12.10.3, page 229-230	Trying to compare Figures 12-40 and 12-41. Presumably 12-40 shows TT changes with H3 compared to 2048 do min (please clarify) and 12-41 is the same for H5 (against do-min). However, the comparison doesn't add up eg Route A northbound H3 TT is 8:55, states a decrease of -1:45 – so the do min TT is 10:40? On 12-41 H5 TT for this journey shown as 6:55, decrease stated as -2:50, so do min was 9:45? This appears to be the same for other journeys, would be useful to show the do-min TT for clarity and also check the claimed decreases. [Phil Harrison 29/10/2020]	Phil Harrison	29/10/2020	3	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. Travel time savings for each horizon are compared to the respective horizon's do-min. For example, travel time in Horizon 3 with interventions, compared to travel time without Horizon 3's interventions (i.e. post Horizon 2). Can further clarify in text.	Aurecon Team	20/10/2020	Refer to author's response.	Closed
64	Section 12.10.4, page 232-233	Caption orphaned from Figure 12-45 Forecast population and employment growth along A2B and 20Connect corridors is shown at the expense of reductions across large parts of the Auckland Isthmus. I understand this is how the model works (ie no new population or jobs are created, just redistributed). But I think it is worth noting that in the text, ie it is not expected that the project will actually lead to population or employment loss across the Isthmus, where population and employment is arguably more sustainable and leading to a more compact city outcome. [Phil Harrison – 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated. Added description around Isthmus projection.	Aurecon Team	24/11/2020	Refer to author's response.	Closed
65	Section 12.10.6, page 237	Why is the Airport station not included on this table? [Phil Harrison – 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Airport Station is not explored in the Transit Oriented Development Study. Auckland Airport has its own development visions, and A2B will support the airport precinct development by improving access for travellers and employees. Add Mel's recommended text on TOD study.	Aurecon Team	17/12/2020	Refer to author's response.	Closed

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66	Section 12.12, page 239	Route protection bullet - : the SH20B designation will expire, leading to commercial / industrial development". Should say potentially leading to... [Phil Harrison – 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
67	Section 12.16	Should note that Economics peer review is also being completed as separate exercise (by Richard Paling?) [Phil Harrison – 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
68	Section 13.6, page 248	'Capital expenditure' should be a sub-heading (heading style format). [Hayley Byun – 20/10/2020]	Hayley Byun	20/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
69	Section 15.1.2 Table 15-1, page 260	Suggesting removing 'm' for \$million next to figures in Table 15-1 for consistency with the rest of the tables. It is already clear from the headers that it is \$million. [Hayley Byun – 20/10/2020]	Hayley Byun	20/10/2020	1	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
70	Section 15 Table 15-8, page 267	Figure missing for Waka Kotahi including admin cost (same as previous column). [Phil Harrison – 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Noted. 5.7% admin cost is relevant for AT only. Waka Kotahi has advised not to include an admin cost.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
71	Section 17, page 275	Second bullet point should be indented. [Phil Harrison – 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
72	Section 22.3.1, page 288	Bullets 3 and 4 should be indented. [Phil Harrison – 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Updated	Aurecon Team	23/11/2020	Refer to author's response.	Closed
73	Section 25.1, page 303-304	Section should reiterate that this delivery structure applies only to A2B, Fig 25-1 Caption states SWGP but only relates to A2B element. [Phil Harrison – 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Comment is relating to 'Proposed route protection and resource consents phase delivery structure and programme'. Delivery structure should apply to the 20Connect components as well.	Aurecon Team	23/11/2020	Refer to author's response.	Closed

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74	Section 27.4.3, page 312	Economic case second bullet. Not include review of strategic optioneering "unless there has been a substantive change identified in the strategic case review that is likely to alter the assessment of alternatives" or similar wording suggested. [Phil Harrison – 29/10/2020]	Phil Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Comment is relating to 'Implementation business case's economics case'. Noted. Updated as per suggested wording. The Economic Case involves the 'Confirmation of the preferred option and micro level option refinement. Note, it will not include the review of the strategic optioneering unless there has been a substantive change identified in the strategic case review that is likely to alter the assessment of alternatives'	Aurecon Team	23/11/2020	Refer to author's response.	Closed
75	Appendix B2 - Transport Planning longlist assessment (REF 501094-4401-TEC-KK-0010	The SH Transport Planning longlist assessment (REF 501094-4401-TEC-KK-0010) Figure 5 page 7 shows a "30-minute driving catchment". Should the word "driving" be in there? Is it really only showing access by car? Why is that relevant? we should be considering access by all modes. [Nerissa Harrison – 29/10/2020]	Nerissa Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	The KPI for 20Connect is specifically "...30 minute drive...". PT access KPIs are assessed with the A2B/RTN components of the business case.	Aurecon Team	23/11/2020	Refer to author's response.	Closed
76	Appendix B2 – 20connect longlist assessment	This appendix does not seem to address why widening of SH20 is included in all shortlist options. [Nerissa Harrison – 29/10/2020]	Nerissa Harrison	29/10/2020	2	2020-10-15_502334-8000-REV-JJ-0007 A2B 20C SSBC Review Register (Received via email on 18.11.20)	Comment #25 and #76 related. Noted. Additional options that excluded widening of SH20 (between SH20A and SH20B) were assessed in the shortlist stage. For some relevant technical notes relating to SH20 widening please refer to Appendix N2 - 20Connect Design Philosophy Statement (Appendix A - Transport Modelling Report and Appendix C - SH20 Widening Assessment (SH20A to Puhinui Road) Technical Note) We will update the SSBC to include/demonstrate key considerations, such as: -Additional traffic demand on SH20 with the introduction of SH20A to SH20 ramp. -Predicted future traffic volumes, congestion, and travel time along SH20 In addition to the above, the widening of SH20 is proposed in the last horizon (Horizon 5 in 2040), hence allows time for further confirmation of the preferred option following the monitoring of demands and effectiveness of the earlier PT focused interventions, prior to investment. Lane classification (T2/T3/bus/GT etc) can be and should be investigated at a later stage closer to implementation, following the review of the effectiveness (e.g. induced mode shift) of the earlier PT interventions. Staging plans and the investment gateway approach are further outlined in the Management Case.	Aurecon Team	23/11/2020	Refer to author's response.	Closed

Airport - Botany and 20Connect

Economic Evaluation Peer Review

Updated 11 January 2021

by



Richard Paling Consulting

January 2021

Airport - Botany and 20Connect Economic Evaluation

Peer Review

Updated 11 January 2021

1 Introduction

The peer review of the economic evaluation for the combined A2B and 20Connect project has taken place over an extended period of time. This has involved the review of a number of reports and working papers and considerable interaction with the consultants undertaking the economic evaluations, including discussions about the details of the approach and the methodology to be applied. Over this period the EEM has been replaced by the new Waka Kotahi Monetised Benefits and Costs Manual (MBCM). In addition the Covid pandemic has emerged with major implications for the demand for transport especially to the airport area but also to the major employment centres in the region. The pandemic has also had a major impact on levels of economic activity. With both these, the short and longer term impacts are difficult to predict, resulting in greater uncertainty being attached to the forecasts for the future.

This note is an update of the position reported earlier on 25 August 2020.

2 Evaluation periods

The most recent parts of the evaluation have taken place over the transition from the EEM to the new Waka Kotahi Monetised Benefits and Costs Manual (MBCM). In general the parameters in the new MBCM are the same as those in the EEM, with possibly the most significant changes being in the discount rate and in the evaluation period. The interim guidance published in November 2019 indicated that these should be changed to 4 per cent and 60 years without qualification but the advice in the more recent MBCM is more nuanced indicating that because of the difficulty in assessing benefits over the longer term the standard evaluation period remains at 40 years but with an option of an extended evaluation period of 60 years "to ensure that the whole-of-life costs and benefits of long-lived infrastructure activities are captured."

The economic evaluation for the combined A2B and 20Connect project has been undertaken on the basis of a 4 per cent discount rate and a 60 year evaluation period in line with the interim guidance. Given the mix of activities within the full A2B and 20Connect package for which the different horizons combine bus priority measures, the provision of an at grade busway and new highway infrastructure it is uncertain as to what would be an appropriate evaluation period. However with the proposed timeline of development and the likely continued growth in some form of the Auckland region a 60 year evaluation period is not unreasonable. The effects of a 40 year evaluation period combined with a 4 per cent discount rate have now been included in the analysis as one of the elements of a wide range of sensitivity tests.

3 Impacts of Covid

Given the current Covid outbreak, it is important that the possible effects of this are recognised, especially for the early elements of the programme. Analysis of the employment in the airport zone suggests that 35 per cent of employment may be associated with aviation with up to 75 per cent in the smaller airport precinct and terminal area, where the A2B services terminate. Of these the majority are likely to be associated with international travel for which the prospects over the short term seem fairly limited.

The impact of Covid on the airport operations has also meant that proposed infrastructure works in the airport precinct to be undertaken by AIAL and forming part of the assumed DM network have been put into abeyance.

To address the issues with Covid particularly at the airport the consultants have:-

- Identified the share of total benefits that accrue to trips to and from the airport. These amount to about 20-30 per cent of the totals for Horizon 2, the first stage of the development of the A2B services in 2028.
- Have recommended that as part of the investment gateway approach, particularly for Horizon 2, the following investment drivers should be considered:
 - What road infrastructure is expected to be provided by AIAL and when.
 - Changes in number of air travellers and employment numbers in the airport precinct.
 - If necessary updated MSM runs to incorporate updated longer term thinking on the possible effects of Covid

Gaining a better understanding of the effects of Covid through the investment gateway approach would therefore provide a more robust basis for determining the nature and scale of future investment in the services and would provide a good way forward.

4 Assessment of the individual benefit components

Benefits were determined separately for the highway, walking and cycling and public transport components.

In general the review of the walking and cycling and road user components of the analysis has indicated that these typically follow fairly well-defined approaches and with some adjustment through the peer review process the results from these components can now be considered to be well founded and robust.

For public transport, the issues are more challenging, reflecting in part the complexity of the schemes proposed and in part limitations with the modelling on which the analysis has been undertaken. For this part of the analysis, there has been a degree of variation from the procedures set out in the EEM. Because of this complexity, this peer review has been the subject of detailed interaction between the peer reviewer and the consultant team, both to obtain more detailed descriptions of some of the elements of the appraisal and also to discuss and review the approaches used to calculate the benefits.

5 Issues with the public transport assessment



Table 1 Breakdown of estimated benefits by component 2028				
	Horizon 2	Horizon 3	Horizon 4	Horizon 5
Public transport user benefits	32%	3%	30%	0%
Public transport reliability benefits	10%	1%	51%	0%
Health benefits from added walking to stations	9%	0%	10%	0%
Road user travel time benefits (from MSM)	7%	61%	-15%	58%
Vehicle operating cost benefits	0%	6%	0%	11%
Crash reduction benefits	0%	4%	0%	3%
Vehicle emission benefits (from MSM)	2%	0%	3%	0%
Reduced driver frustration benefits	0%	8%	0%	8%
Trip reliability benefits	0%	3%	0%	3%
Cycling travel time benefits	0%	0%	0%	0%
Health and environmental benefits from walking facilities	0%	0%	0%	1%
Health benefits from cycling facilities	0%	0%	5%	1%
Safety benefits from cycle facilities	0%	0%	0%	0%
Pedestrian safety benefits	0%	0%	1%	0%
Decongestion benefits from active mode shift	0%	0%	1%	0%
Agglomeration benefits	36%	13%	12%	13%
Imperfect competition benefits	1%	0%	0%	1%
Tax wedge on increased labour supply	3%	1%	3%	1%
Total	100%	100%	100%	100%
Benefits by broad category				
Total conventional benefits	41%	85%	17%	84%
Walking and cycling from model	0%	0%	7%	2%
WEBS	40%	15%	14%	14%
PT reliability	10%	1%	51%	0%
Walking health benefits	9%	0%	10%	0%

The **conventional benefits**, those accruing to road users and for public transport travel time savings, are based on the straightforward application of the MSM model either directly or as inputs to the SATURN modelling. There is considerable experience in the application of these models and the techniques used for the economic evaluation are relatively mature and reasonably well founded. These benefits account for about 17-41 per cent of the total benefits for the PT focussed Horizons (2, and 4) as set out in Table 1. For the highway focussed Horizons the share of the benefits is much higher at about 84-85 per cent,

The walking and cycling benefits from the model are fairly small and have been reviewed in detail in the peer review. While there are some uncertainties with the modelling of cycling and more particularly walking trips, it is considered that the benefit estimates are reasonably robust.

The next set of benefits to be considered are the **WEBS**. These comprise a relatively large share of the benefits, in the range of 14-44 per cent for the public transport focussed components and are typically of a magnitude similar to that of the conventional benefits.

The approach used to assess WEBS particularly the agglomeration benefits was initially developed to assess the impacts of major transport schemes in the larger urban areas and detailed guidelines for their assessment are set out in the EEM.

The estimation of WEBs associated with the A2B components has been undertaken in line with the processes set out in the EEM/MBCM, and for agglomeration benefits, the largest component of the WEBs, the approach has been checked in detail to confirm its accuracy. The spatial distribution of the agglomeration benefits has concentrations at locations where relatively high benefits would be expected and so the approach taken appears well founded and robust in the context of the EEM/MBCM approach.

[REDACTED]

The next component to be considered is the **benefit from improved public transport reliability**. Again as can be seen from Table 1 this can form a substantial part of the total benefits, especially for Horizon 4. For this, an approach has been developed which takes advantage of considerable information on the reliability of current bus services but which follows a different approach to that set out in the EEM/MBCM. This has been considered in the peer review in some detail and it is considered that this produces reasonable results.

Because of the nature of the improvements proposed there is forecast to be a substantial improvement expected in the reliability of the services and the benefits calculated for Horizon 4 are therefore large. However the need to achieve the high reliability improvements required to generate the large benefits, especially with the interaction with general traffic flows at points along the routes, introduces a further element of uncertainty into the evaluation. The sensitivity testing undertaken again highlights the range of this uncertainty associated with the results.

The final element to be considered is the **health benefit from the additional walking trips**. While there is some guidance on the health benefits from walking in the EEM these are in the context of end to end walking movements rather than those which are part of a longer journey. Since the routes for these are not specifically identified there is an element of uncertainty about the scale of these journeys. Sensitivity testing has explored alternative assumptions about the average journey length and the benefits that would be obtained which allows the envelope of outcomes to be explored.

6 Other issues

As well as dealing with general evaluation issues a number of specific issues have been considered in the course of the peer review process. [REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

For all of these, the approach that has been adopted following discussions, and in some cases a review of the initial proposals, appears reasonable.

One area of benefit that was explored earlier in the course of the evaluation was the incorporation of dynamic WEBS, in line with the recent Waka Kotahi guidance. An initial assessment was made of the potential impacts to help give an indication of the scale of benefits that might be generated and any issues that might result. [REDACTED]

7 Summary and conclusions

The current economic evaluation of the A2B and 20Connect project has been reviewed in detail and appears to be soundly executed. While some of the benefits have been determined using approaches that are outside the guidelines set out in the MBCM introducing an element of uncertainty into the process, a detailed review of these shows that these alternative techniques in general produce estimates of benefits that appear reasonable.

[REDACTED]

The economic appraisal as it currently stands therefore provides a robust assessment of the benefits of the project and takes into account the wide range of uncertainties that arise for a project of this type and location and at this point in time.