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Peer Review

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# Glossary of terms and abbreviations

Table 1-1 Glossary of terms and abbreviations

Term / Acronym	Definition / Meaning
APT Model	The Auckland Public Transport Model
AT	Auckland Transport
AWHC	Additional Waitemata Harbour Crossing project
BCR	Benefit Cost Ratio
BRT	Bus Rapid Transit
CAP	Central Access Programme
CCFAS	City Centre Future Access Study
IBC	Indicative Business Case
KPI	Key Performance Indicator
LRT	Light Rail Transit
LTP	Long Term Plan
NZTA	New Zealand Transport Agency
PAUP	Proposed Auckland Unitary Plan
PT	Public Transport
PBC	Programme Business Case
RTN	Rapid Transit Network
RLTP	Regional Land Transport Plan
STM	Stage Timing Model

# Scope and project understanding

The Central Access Plan has been established to address predicted issues with the capacity and reliability of public transport to the Auckland City Centre. We understand that this Central Access Plan (referred to hereafter as CAP) is a partnership between Auckland Transport (AT), The New Zealand Transport Agency (NZTA) and Auckland Council.

We note that the Strategic Case was supported by the three partner organisations with the following problems identified:

- Inability to meet current and projected transport demand on key corridors will sustain unreliable travel and poor access to productive city jobs.
- Blockages and delays in central bus services worsen travel times and customer experience for those using public transport.
- High and increasing traffic volumes on residential and inner city streets create adverse urban amenity and environmental effects.

# 2. References and benchmarks

In reviewing the programme business case, we have referenced NZTA's guidance. The CAP is not a state highway, however NZTA is a project partner, a potential investor and has published guidance on programme business case development. We are aware that AT typically adopts NZTA's guidance in developing its business cases. We do note that some differences exist even within NZTA's guidance with the Highways and Network Operations Group and Planning and Investment Group having separate, but related guidance. Recognising that the CAP is not a state highway, the Planning and Investment guidance has been used. To this end, the following outlines what NZTA's guidance suggests the PBC should contain and is used as a benchmark against which the PBC has been measured in terms of scope and content:

"The programme business case will:

- Confirm (or disprove) that the problems or opportunities identified in the strategy strategic case are valid and, through data collection and analysis, identify potential risks, dependencies and constraints:
- From the long-list of all possible programmes, select a short list and then a preferred
  programme through analysis of cost estimates, risks, trade-offs and the potential benefits
  expected to be realised;
- Determine time frames, potential benefit realisation returns, costs, risks and dis-benefits of the preferred programme or long list;
- Ascertain whether the network is fully optimised at present, before any new activities or improvements are considered;
- determine the full assessment profile of the preferred programme, including the indicative efficiency rating;
- identify any potential activities that are expected to be in the preferred programme; and
- identify phasing of options that will support the programme outcomes.

 A series of workshops, similar to those used for the strategic assessment, will be held to identify alternatives and options."

# Summary

In terms of meeting the requirements of a PBC specified in NZTA's guidance, the following points are a summary of this review:

- The structure and process of the PBC development has been consistent with expectations in that
  a clear governance structure has been in place and actively implemented and workshops held at
  the appropriate junctures involving problem owners and stakeholders.
- It is noted that a strong evidence base exists from current and previous related studies and business cases and this has been presented clearly and concisely.
- There is a strong connection between problems, benefits, KPIs and measures and this has been made evident and transparent through assessment.
- A sufficient range of strategic alternatives has been explored, including demand, productivity and supply.
- The rationale for selecting the strategic alternatives and options is clear through the transparent use of KPIs and measures linked directly to the defined benefits of investing.
- To the degree appropriate for a PBC, it is clear that the proposed alternatives and options are likely to be an effective response to the defined problems. There is a high degree of evidence of effectiveness in addressing the problems relating to transport demand, capacities and performance and the connection to economic productivity. At a qualitative and logical level, there is reasonable certainty as to the effectiveness of the proposed response in terms of the problem relating urban amenity.
- Given that the PBC has considered options or strategic responses within each programme that
  are based on known and proven technologies and is supported by some technical feasibility
  studies, there is confidence that the alternatives and options are technically feasible.

There are some issues to be aware of, although it is likely that these can be readily addressed through inclusion in the IBC phase:

- Urban amenity is clearly the hardest to measure and as a result is generally qualitative. The point
  is well made and logic is easy to follow, however future stages may benefit from creation of an
  improved evidence base here, including some more quantitative analysis.
- Affordability has not been considered. The scale of this investment means that this is likely to be
  a consideration. Recognising the concurrence of the ATAP process, which is a fair reason for not
  addressing the issue in detail, affordability should be addressed as soon as possible. It is noted
  that NZTA considers PBCs "living documents" and as a result this can be added once the ATAP
  process is completed and affordability can be addressed.

# Peer review approach

# 4.1 Establishing understanding and requirements

As an initial step we met with the project partners and business case manager to understand their drivers and expectations from the business case and the peer review. These meetings enabled us to

understand particular areas of concern and focus for each of the project partners as well as the status of the evidence base and the methodology proposed. Meetings were held with:

- NZTA's Planning and Investment group
- AT's Programme Manager
- The Business Case Manager
- Members of the consultant technical and advisory team

We reviewed the Strategic Case and the evidence base presented therein and as a result, formed an understanding of strategic and organisational drivers as well as the strategic context and evidence base.

As an interim deliverable, provided at the time the CAP held a key workshop to identify a recommended programme, we reviewed the programme alternatives and provided a paper that covered:

- The breadth of options developed
- The depth to which options had been developed and considered
- The manner in which programme alternatives and options had been developed

Finally, the Programme Business Case has been reviewed.

# Process for development and governance

A significant body of current and relevant evidence exists through a range of recent and current processes that has meant the PBC has been able to drawn on this and provide greater confidence in a shorter time than is typically the case. Examples of sources of evidence and option understanding include:

- The New Network for Public Transport
- The City Centre Future Access Study (1 and 2)
- The City Rail Link Business Case
- The light rail technical work currently under way
- Various bus public transport studies including the Wynyard-Fanshawe Street IBC

As noted earlier in this Peer Review, the CAP process is jointly governed by AT, NZTA and Council. Co-ordinated and formalised decision making and direction is important to a logical and well structure business case. We note that a governance structure is in place involving investors and problem owners and this structure is actively engaged in co-ordinating and directing the process in a structured manner.

The methodology applied by the PBC is in alignment with the process described in NZTA's Planning and Investment Knowledge Base and interviews with participants and review of material provided indicates the following:

- A well planned and professionally facilitated series of workshops and intervening technical assessment has been used to generate the options.
- Attendance and engagement in the process appears to be appropriate and is evidenced in the breadth of options and alternatives identified.

In this respect, in our view the process meets the expectations set out in NZTA's guidance for the manner in which a PBC should be governed and decisions made.

# 6. Review of business case

### 6.1 Overview

Overall, the PBC conforms to NZTA's prescribed structure and sets out the required elements logically and transparently. There is a clear link between the strategic case, the evidence, options and the recommended programme. There are some points of note in this review at a detailed level, most, if not all of which are likely to be capable of being addressed at IBC stage.

There is a recognition of NZTA's view, both written and that obtained through conversations with NZTA representatives during the peer review that a PBC is a relatively brief document, the primary purpose of which is confirm the strategic case, the effectiveness of a range of programmes and a recommended direction.

# 6.2 Strategic alignment

Given the problem statements, being driven primarily by an underlying dynamic of rapid growth, the PBC covers the strategic context appropriately through referencing:

- Recent trends and forecasts in land use, employment and residential location and growth.
- Mode share and public transport usage and performance drawing a connection with the above growth dynamics.
- Strategic drivers of the decision making organisations, in particular the Government, NZTA, Auckland Council and AT.

The PBC acknowledges the Auckland Plan as a strategic driver of change. However the PAUP is the primary implementer of such change, particularly in the first ten years of the Auckland Plan's view. Its current status and the timing and urgency associated with the recommended programme may warrant greater recognition of the PAUP as part of the strategic context.

It is noted that the transport context covers almost entirely public transport developments which given the problem statements for the PBC is probably appropriate. Given the scale and strategic significance of the investment recommended in the PBC, comment on a range of modes and their strategic relationship may be beneficial. For example the AWHC project may influence travel patterns to the city centre, while the Western Ring Route for example may affect travel behaviours and add risks and opportunities, particularly on the Isthmus.

# 6.3 Evidence to support problems and benefits

Of the three problem statements, two relate strongly to capacity and reliability of public transport access to the city centre. This places a high degree of importance on evidence underpinning growth as a primary driver of demand and public transport service planning and corridor capabilities as primary drivers of capacity and delay.

The third problem is quite different and more qualitative in its assessment and in many respects could be seen as a consequence of the first two.

#### 6.3.1 Growth

The PBC sets out simply and effectively the case for growth in the city centre, both in terms of its scale and the connection with transport demands. Section 2.1 of the PBC lacks references to many of the figures quoted, so verification has been difficult, however our involvement in projects such as CRL and other Auckland City Centre public transports provides confidence that the figures quoted are accurate and sourced from accepted and robust work.

# 6.3.2 Public transport performance and reliability

Having established the case for the City Centre's growth and importance of an effective public transport system to deliver the high value labour force to the centre, the problem statements require the clear establishment of a connection to public transport capacity, reliability and performance.

A Stage Timing Model (STM) appears to be primary method of establishing the capacity and performance of the public transport system and consequentially the timing and significance of the problems identified in the strategic case.

The STM is referenced in section 5.3 and further information is included in Appendix F of the PBC. Typically, transport models used to underpin core elements of a major business case would be reviewed in their own right to establish the credibility of forecasts. It is noted that the APT model, which provides the source for demands has been reviewed and accepted in the normal way. We have reviewed the paper describing the STM and the Bus Reference Case which is a key input to the STM.

In establishing the points, both in location and time that the problems eventuate in terms of capacity being reached, unreliability reaching unacceptable levels and effectiveness is similarly reduced, the STM has adopted a set of assumed limits for particular corridors and stops. The point at which a corridor reaches its capacity and reliability limits is critical to the extent and timing of the problems one and two and as a result the scope and timing of potential interventions. The STM has used accepted bus stop and corridor capacities and has reference the Transit Capacity and Quality of Service Manual (TCQSM) which is an internationally accepted and appropriate source for defining transit service capacities and levels of service.

The STM can be described as a relatively generic replication of bus stop and corridor capacity and is considered appropriate for a PBC stage. It is noted that with the complexity associated with city streets relating to traffic signal interaction, timing and interaction of buses with other road users, the use of a microsimulation model in future, more detailed stages of the business case may further develop understanding of capacities and operational constraints.

The second problem introduces customer experience as a consequence of blockages and delays. From an investment perspective, the question is raised as to whether customer experience is in itself a consequence justifying investment. There are probably consequences of poor customer experience such as people choosing not to work or invest in the City Centre that are relevant consequences of poor customer experiences.

Overall, the above notes taken into account, the evidence presented provides a clear link between growing demands, capacity issues and a degradation in access to the City Centre. The PBC outlines empirical evidence over the last ten years as a sound base for forecast trends which is considered important given the rate of growth forecast. The reduction in accessibility and labour pool for the city centre provides a clear connection between economic performance of the Auckland City Centre and public transport network performance.

### 6.3.3 Urban amenity

The third problem statement provides a transportation business case with a challenge to provide evidence in a measurable manner. We note however, that through several strategic documents referenced, including the City East West Transport Study, which is underpinned by the City Centre Masterplan and the Waterfront Plan among others, there is a consistency to Council valuing the creation of urban amenity as part of a broader strategy to support city centre investment and living. This body of work can be considered supporting evidence to the PBC.

Appendix D provides a detailed and transparent explanation of the assessment of the options in relation to urban amenity. While qualitative, the assessment is considered sound, and robust.

### 6.3.4 Observations on scope

This peer review has attempted to focus on a clear link between the evidence base, problems, benefits and options considered. Figure 3 (page 21) provides a core illustration of the problem by showing both the reduced accessibility to the City Centre and the loss of effective labour force based on a 31% degradation in bus speeds from today's timetable. This shows a considerable reduction on the southern Isthmus and most notably on the North Shore.

All of the interventions considered in the PBC are intended to address accessibility to the Isthmus, which, *is* supported by the evidence and indeed by this illustration, however the business case does not acknowledge the North Shore issue to a great extent and in particular in the alternatives and options.

The approach to focus on the Isthmus-originating routes initially and the reasons for only including options addressing Isthmus-originating routes could be explained to reduce risk of this question being raised. It is noted that the North Shore is currently being investigated by AT and this is acknowledged in section 12.5 as a risk to the programme.

Accepting the focus on Isthmus- originating routes, there is also a clear focus on the Auckland City Centre in the PBC. While the PBC is clearly intended to address access to the Auckland City Centre, the effects of the interventions proposed both in beneficial and non-beneficial terms are likely to occur well beyond the City Centre and on the Isthmus in particular. The PBC does not, for example address accessibility benefits that may accrue to trips not accessing the city centre, nor does it address disbenefits to accessibility that may be imposed on the Isthmus, for example through increased severance. These may be capable of being addressed at the IBC stage.

# 6.4 Investment objectives and measures

It is noted that investment objectives have not been developed for this PBC. NZTA's Planning and Investment business case guidelines do not require the development of investment objectives. A suite of investment KPIs and measures have been set that relate directly to the problems and benefits.

The measures are used effectively in the assessment of options.

# 6.5 Development of programmes and options

### 6.5.1 Do-minimum and assumptions

It is noted that the do-minimum and the core assumptions underpinning the options are the same as those adopted by ATAP. This provides for consistency with a related strategic process and consistency with concurrent studies that have also adopted the same approach.

# 6.5.2 Option structure and approach

Grouping the six potential programme options into three broad approaches is consistent with NZTA's guidance in the formation of programme alternatives which suggests that alternatives should investigate both supply and demand. The three approaches are:

- Maximising the use of existing assets
- Bias towards new or enhanced infrastructure
- Demand management

Further, the adoption "strategic interventions" as a means of breaking up the programme alternatives and applying a percentage emphasis (section 11.4) allows a clear articulation of the composition and principles of each option.

This approach is consistent with NZTA's guidance on programme business cases which envisages a range of "options", packaged as "programme alternatives". There is a slight difference in terminology in that the PBC refers to "programme options", which can be correlated with NZTA's term "programme alternatives". In this case, the PBC has adopted "strategic interventions" as a means of articulating the component options within each programme. Some of these are relatively specific, for example particular rail or light rail alignments and other policy mechanisms are described more in principle. This is considered appropriate for a programme business case. The "strategic interventions" can be considered "options" in language adopted by NZTA's guidance.

### 6.5.3 Options not considered further

As noted in our earlier paper on the subject, several potential programme options identified at workshops in December 2015 were not taken forward to the final list of six programme alternatives. These are:

- Reliance on technology
- Land use change
- Road expansion

The reasons provided for discarding reliance on technology are largely related to risk associated with the ability of the partners to implement the interventions. Inclusion of options that are feasible is a consideration in NZTA's Investment Decision Checklist. The conclusion acknowledges that technology may have a role over the period of the programme as it is rolled out.

Land use changes of a significant nature as a "headline" programme have been discarded on the basis that Auckland Council has an established policy framework. Given the body of evidence underpinning the Auckland Plan and the PAUP and the particular land use options identified, for the purposes of the programme business case, this is a sound conclusion.

The conclusion that road expansion, involving multi-deck motorways, additional carparks and wider arterials has been discarded on the basis that it would harm the city's character, would be expensive, environmentally damaging and contrary to well-established policy. For the purpose of a programme business case and given the extensive history of transport studies in the Isthmus and City Centre area the judgment is considered appropriate.

# 6.5.4 Options considered

As noted in our earlier paper, the breadth of programme options identified is appropriately wide. Programme options have included supply, demand and productivity related interventions, including a range of modes in the supply-related options.

One issue, which is consistent with programme cases is the gap in technical development between various strategic interventions. In particular, there is a very good understanding of the costs, risks, technical feasibility and requirements of light rail and the Mt Roskill heavy rail line as well as enhanced surface bus options due to pre-existing information. The BRT option and a range of demand related interventions are not developed to the same level, although the depth to which they are developed is considered appropriate for a PBC.

# 6.6 Assessment of programmes

NZTA's guidance on assessment of programmes suggests that "The depth of the analysis undertaken should be tailored to the relative size, impacts, and risks of the proposal. It is important to document all options considered".

While the PBC document reviewed does not provide all of the detailed evaluation that was carried out, we are aware through our overview during the PBC process that the assessment of options has been

robust and carried out to an appropriate level for this programme business case. We consider that given the depth of previous studies, data, evidence and tools available, together with specific work for this PBC, the assessment is appropriate for the situation.

NZTA's guidance is based around a workshop-led process to enable sound buy-in and an ability of key owners of issues and stakeholders to influence the process. In particular, the guidance suggests:

"A facilitated workshop is recommended to ensure that key stakeholders are engaged early and can challenge and shape the direction of the proposal."

We attended the options assessment workshop on 22 February 2016 and reviewed the option development and assessment in advance of this workshop.

In our view the workshop and the assessment process was well-run and the partners in the process and stakeholders were engaged and had adequate opportunity to influence the outcome. The assessment was transparent and with the measures and KPIs well connected to the benefits of investment and problems, it is our view that the assessment meets the expectations of a PBC.

# 6.7 Integrated Programme

It is noted that the Integrated Programme (IP), which is the "recommended programme" in NZTA's terminology is a programme that combines elements of several programme options (alternatives) into a single, integrated programme. The optimisation of the best performing options in the context of the assessment framework into an integrated, optimised programme is an entirely appropriate response, and one expected by NZTA's guidance for PBC development. This demonstrates a robustness and openness in the process to optimising the outcomes and remaining connected to the problems.

# 6.7.1 Costs and affordability

Typically at PBC stage, costs are relatively high level and as a result the level of capital costs provided are considered appropriate, noting the issue raised with respect to the variation in technical development and as a result in costs across options.

Affordability is not addressed to a significant extent, noting the current ATAP process along with the next version of the RLTP and LTP are still at large. This is considered valid due to the currency and significance of the ATAP process, although the PBC would be assisted by some assessment of affordability based on the current forecasts in the interests of providing some understanding of affordability. The CAP is a potentially large investment and affordability is likely to be a significant factor in decision making and timing.

# 6.7.2 Benefits and economic analysis

The range and depth of evaluation of benefits outlined appears to be typical for a programme such as this and aligns with expectations of a PBC which are that these are "indicative". Clearly there is an expectation that these will be further explored in an IBC, however the range of benefits suggests the IP has value in an economic sense.

We do note that we have not specifically reviewed the economic analysis, underpinning the explanation in the PBC document.

### 6.7.3 Risks and uncertainty

The PBC does not contain a detailed risk register or uncertainty log, however we are aware that NZTA's guidance does not specifically require this. Rather, it requires that risks and uncertainties are considered and included in the PBC.

Section 12.5 contains a description of risks to the programme that is considered fit for purpose and can inform the scoping of an IBC.

# 6.7.4 Stakeholder engagement

The guidance for PBCs does not specifically outline expectations for public and wider stakeholder engagement.

The process to develop this PBC engaged closely with core stakeholders such as Auckland Council and NZTA, along with AT's internal stakeholders. These were generally engaged throughout the technical work streams and key workshops.

The PBC notes that public consultation has not been specifically undertaken. Instead, the PBC has relied on consultation processes for the RLTP and RPTP 2015 variation each of which allowed comment on key themes considered in the CAP PBC. This is considered appropriate for this stage of the process.

# 7. Closing remarks

Taking into account some observations and suggested areas for further development, this PBC is considered to be fit for purpose. There is a strong evidential base with a good connection to well described measures, KPIs, benefits - all highly relevant to the problems identified. The breadth and depth of options considered is appropriate and the level of assessment of more than adequate depth for a PBC.

The process for development is consistent with NZTA's published guidance and the product itself is similarly aligned.

# 7.1 Conclusions

In terms of meeting the requirements of a PBC specified in NZTA's guidance, the following points are the main conclusions:

- The structure and process of the PBC development has been consistent with expectations in that a clear governance structure has been in place and actively implemented and workshops held at the appropriate junctures involving problem owners and stakeholders.
- It is noted that a strong evidence base exists from current and previous related studies and business cases and this has been presented clearly and concisely.
- There is a strong connection between problems, benefits, KPIs and measures and this has been made evident and transparent through assessment.
- A sufficient range of strategic alternatives has been explored, including demand, productivity and supply.
- The rationale for selecting the strategic alternatives and options is clear through the transparent use of KPIs and measures linked directly to the defined benefits of investing.
- To the degree appropriate for a PBC, it is clear that the proposed alternatives and options are likely to be an effective response to the defined problems. There is a relatively high degree of evidence off effectiveness in addressing the problems relating to transport demand, capacities and performance and the connection to economic productivity. At a qualitative and logical level, there is reasonable certainty as to the effectiveness of the proposed response in terms of the problem relating urban amenity.
- Given that the PBC has considered options or strategic responses within each programme that
  are based on known and proven technologies and is supported by some technical feasibility
  studies, there is confidence that the alternatives and options are technically feasible.

There are some issues to be aware of, although it is likely that these can be readily addressed through inclusion in the IBC phase:

- Urban amenity is clearly the hardest to measure and as a result is generally qualitative. The point
  is well made and logic is easy to follow, however future stages may benefit from creation of an
  improved evidence base here, including some more quantitative analysis.
- Affordability has not been considered. The scale of this investment means that this is likely to be a consideration. Recognising the concurrence of the ATAP process, affordability should be addressed as soon as possible. It is noted that NZTA considers PBCs "living documents" and as a result this can be added once the ATAP process is completed and affordability can be addressed.



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