

North West Recommended Transport Network Cost Report

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Version 1

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Disclaimer

This is a draft document for review by specified persons at Auckland Transport and the New Zealand Transport Agency. This draft will subsequently be updated following consideration of the comments from the persons at Auckland Transport and the New Zealand Transport Agency. This document is therefore still in a draft form and is subject to change. The document should not be disclosed in response to requests under the Official Information Act 1982 or Local Government Official Information and Meetings Act 1987 without seeking legal advice.

Cost Estimate Summary Table

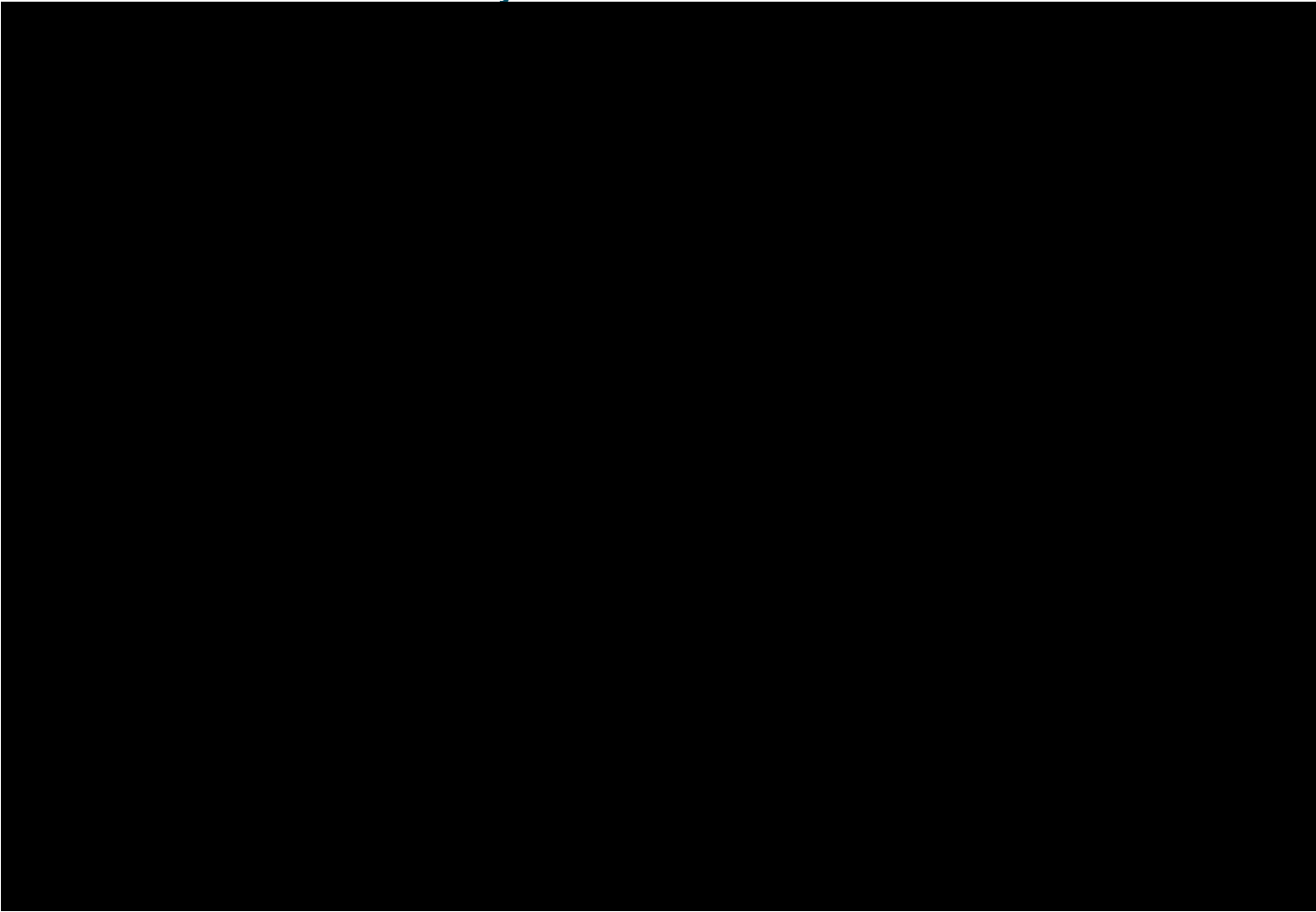


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Glossary of Terms

Acronym/Term	Description
AMC	Active Mode Corridor
ASH	Alternative State Highway
AT	Auckland Transport
CH	Chainage
DBC	Detailed Business Case
FTN	Future Transport Network
HV	High Voltage
IBC	Indicative Business Case
LV	Low Voltage
MV	Medium Voltage
MSE	Mechanically Stabilised Earth
NZTA	Waka Kotahi New Zealand Transport Agency
PWA	Public Works Act
RCRRJ	Reinforced concrete rubber ring jointed (pipes)
RTC	Rapid Transport Corridor
SGA	Supporting Growth Alliance
SH16	State Highway 16

1 Introduction

The Supporting Growth Alliance (SGA) (Te Tupu Ngātahi) has been established to identify the transport requirements to support the predicted level of growth forecast to occur in Auckland beyond a 30-year time frame. As such, the Detailed Business Case has been developed for route protection only, and these projects are not expected to be constructed for a number of years. Therefore, the cost estimate will need to be revised and reconfirmed at that time in order to reflect any changes in standards, planning conditions, network demands, and/or any other construction related matters.

Figure 1 shows the recommended network for the North West Transport Corridors. The estimates have been prepared to reflect the following projects:

- Kumeū-Huapai Arterial Projects
 - Access/Tawa Road Upgrade
 - Station Road Upgrade
- Redhill Arterial Projects
 - Fred Taylor Drive FTN Upgrade
 - Northside Drive East Upgrade
 - New Northside Drive West
 - Don Buck Road FTN Upgrade
 - Royal Road FTN Upgrade
- Riverhead Arterial Projects
 - Coatesville-Riverhead Highway
 - Riverhead Road
- Whenuapai Arterial Projects
 - Brigham Creek Road Upgrade
 - Mamari Road FTN Upgrade
 - Trig Road Upgrade
 - New Spedding Road West
 - New Spedding Road East
 - Hobsonville Road FTN Upgrade
- State Highway16 Strategic Projects
 - SH16 Access Road to Huapai West Upgrade
 - Rapid Transit Corridor – SH16 Access Road to Huapai West Upgrade
 - Alternative State Highway – Brigham Creek Road to West of Huapai
 - Rapid Transit Corridor - Brigham Creek Road to West of Huapai

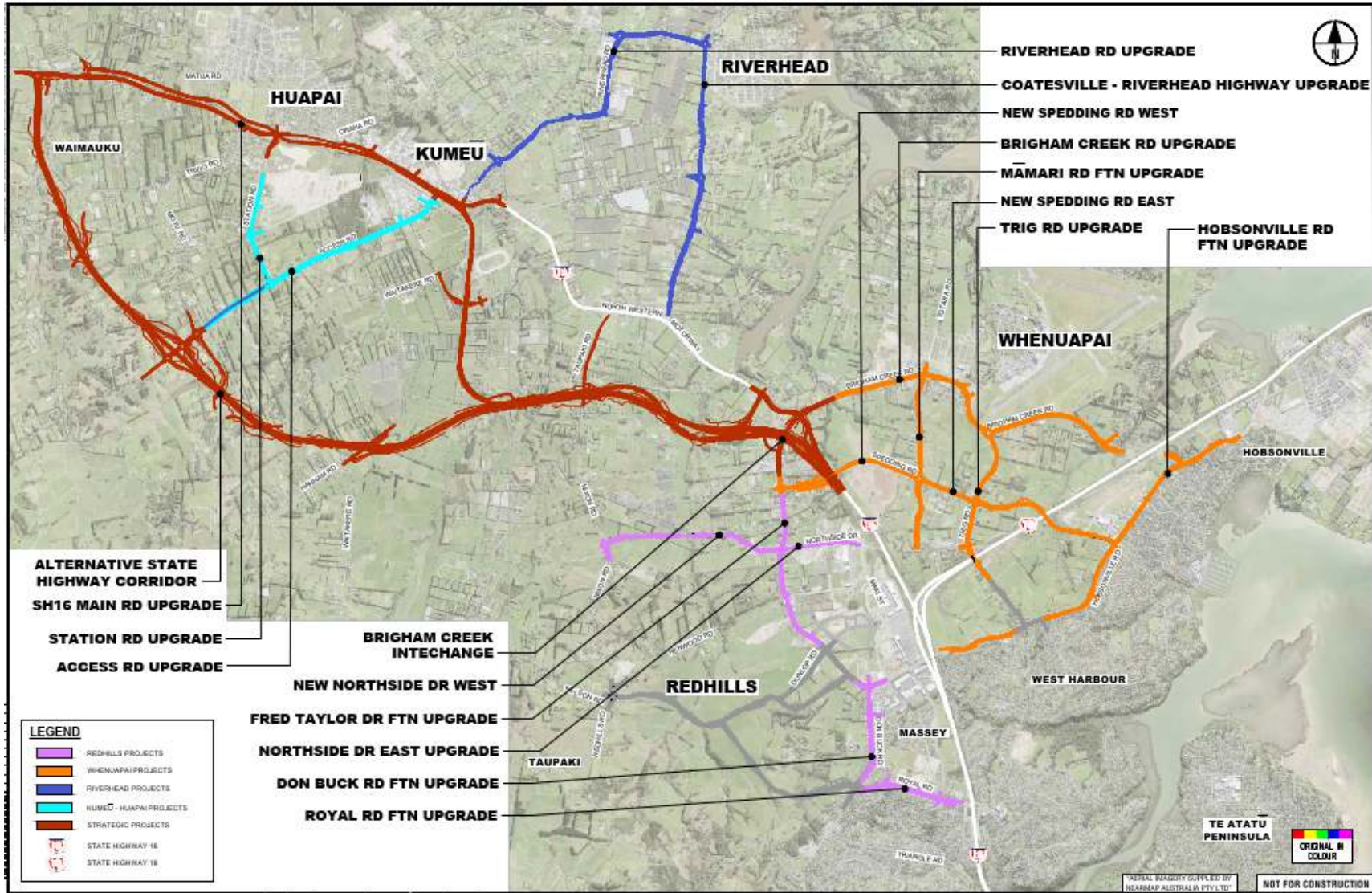


Figure 1: North West Transport Corridor Network

2 Approach to Cost Estimation

This estimate has been prepared to provide an indication of costs for future budget forecasting and for inclusion in the economic analysis.

The costing of the works has been based primarily on:

- Drawing sets for each arterial road corridor issued as 70% Design Development Stage
- Drawing sets for strategic corridor issued as 75% Design Development Stage

alongside the assumptions and allowances outlined in Appendix 2. Physical Works Assumption Schedules are included in Appendix 2.

Each road corridor is assumed to be delivered as a stand-alone project and cost is assessed individually.

Extraordinary Construction Costs allowed for the heavy rail upgrade at SH16 Access Road to Huapai West Upgrade (Strategic Project) to replace existing level crossing at Access Road.

Te Tupu Ngātahi (SGA) has adopted the following % as contingent risk.

Table 2: Contingency Determination

Determination		% of Base Physical Works
Contingency	P50	25%
Funding Risk Contingency	P95	20%

An independent Quantitative Risk Assessment has been undertaken within Te Tupu Ngātahi (as agreed with the IQA team in preparing the Business Case) based on the design inherent risks and key known risks identified. This is due to Waka Kotahi (NZTA)/ Auckland Transport drivers for improved risk consideration and to give basis to risk/contingency inclusions.

2.1 Property

The cost of land forms a significant part of the estimate. Property cost estimates have been undertaken by the Auckland Transport property team on behalf of SGA. These cost estimates have been prepared based on the land requirement (both temporary and permanent). The assumptions associated with the Property cost estimates are attached in Appendix 3.

The nett project property cost includes costs pertaining to both the temporary and permanent land requirement as well as compensation estimates assessed in accordance with the provisions of the Public Works Act 1982 (PWA) including cost for AT Negotiator.

Note that the property costs for temporary occupation during construction have been annualised and the actual cost of temporary occupation will need to be considered in line with the construction programme at the time of implementation.

The table below shows the contingency allowance applied to the associated cost for the P50 and P95 estimates.

Table 3: Nett Property Cost Contingency Allowance

Contingency Allowance		% of Nett Property Cost
Contingency	P50	15%
Funding Risk Contingency	P95	25%

2.2 Integration with Development

Where land development is currently progressing, and the transport network will need to be constructed in conjunction with the development works, there is likely to be a negotiation with the Developer to agree the extent of Developer contribution. While this is likely to be different in each case, the process of agreeing what the Developer is required to construct will be important in determining the scope and cost of the AT/ Waka Kotahi works.

An example is where a Developer will be required to construct a Collector Road, although there is a future requirement of an increased level of service (e.g. Arterial). In this case, the cost of construction over and above the Collector Road will need to be determined.

The costs prepared for the DBC Estimate have not considered these opportunities and have been based on full project construction costs.

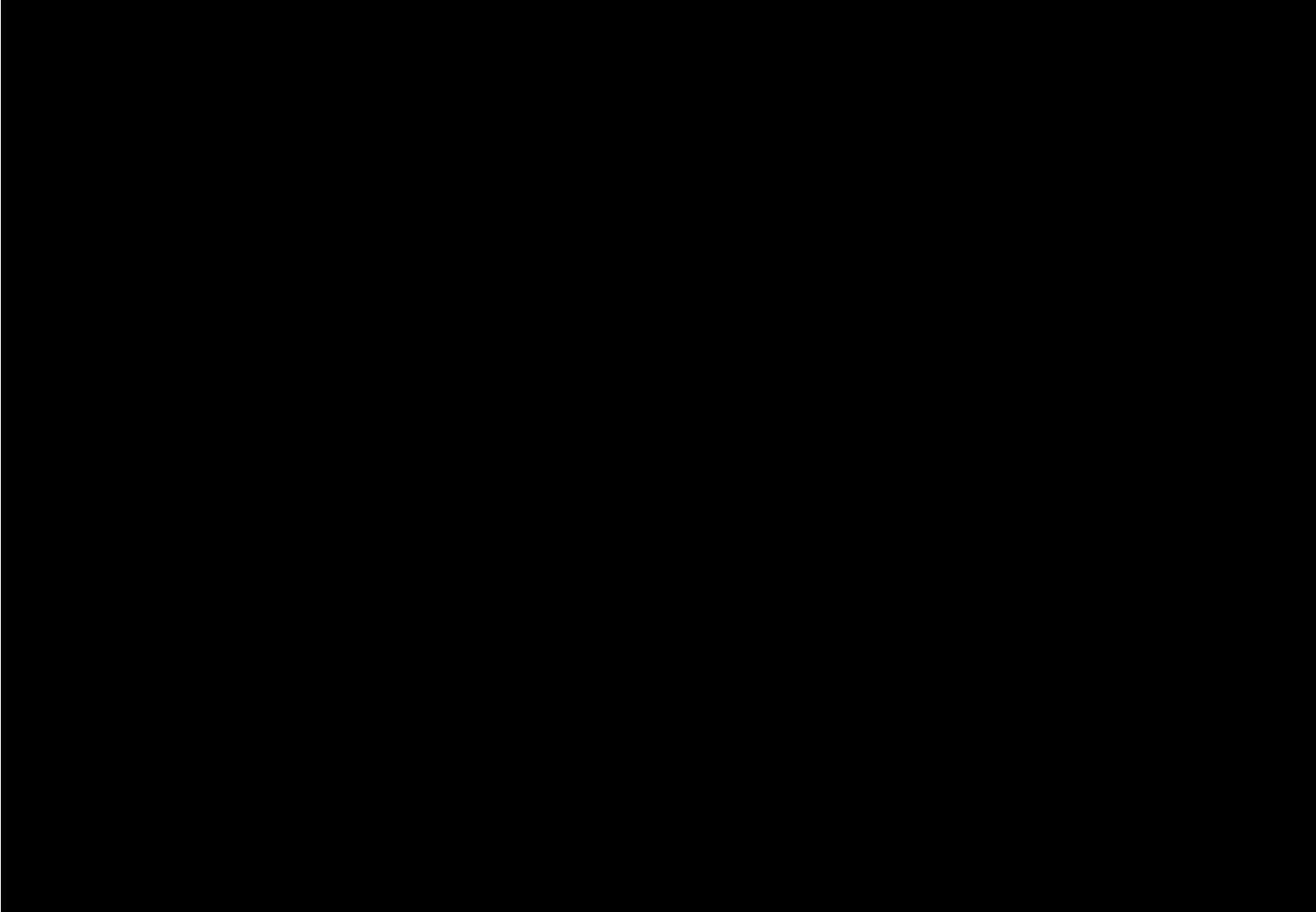
2.3 Verification

A Business Case of this scale would normally involve preparation of a parallel estimate by an independent estimator. However, as this Business Case is primarily focused on route protection and a subsequent stage will be undertaken to seek funding for implementation, the level of cost estimation accuracy is considered to be less than a typical DBC. Therefore, it has been agreed with the IQA team from both Auckland Transport and Waka Kotahi that the costs will be peer reviewed through 'cross verification' by a separate team within SGA who were independent of the initial estimate preparation. Therefore, in order to provide a level of independence, reviews were undertaken by both home organisations, with general cost being reviewed by BECA throughout the process and final review and signoff by AECOM.

2.4 IBC and DBC Estimates Comparison

Comparative cost summary between Indicative Business Case Estimate (IBC) and this Detailed Business Case Estimate (DBC) is presented here including the variance for each elemental cost.

For developing the IBC, there were a number of design elements that were consistent across options, and a generic approach to estimation using linear unit rates was adopted. To supplement this, concept design inputs were extracted from a 3D Infracore model to determine earthworks volumes. This applied Austroads standards and generates alignments overlaid on topographical data. The subsequent DBC has been based on measurement, with appropriate assumptions made (as set out in Appendix 2).



Appendix 1: Cost Estimate Summary Forms (DBC)

Appendix 2: Physical Works Assumption Schedules

Appendix 3: Property Cost Estimate Memorandums

