

9 Project Cost

9.1 Scope of the Works

The scope of the works has been broken down into the major elements of the highway upgrade through to construction and handover. These are:

- Project development.
- Investigation and design.
- Property acquisition.
- Public utility adjustments (included in construction).
- Construction.
- Handover.

9.2 Strategic Cost Estimates

Strategic cost estimates have been prepared in accordance with the *RTA Project Management Guidelines for Estimating, Scope and Cost Control for Development Projects* (Version 3, RTA 2000). The estimates are based on typical construction contract rates and on quantities derived from the preliminary concept design of the route options.

Estimates have been prepared in the form of a base component plus a contingency component for each item. The base component represents the bare cost of the works as set out in the concept design for each option. The contingency component includes allowance for normal contingency (covering any inadequacies in the concept design layouts or estimating methods) and risk contingency (covering major unknowns). The contingency allowance varies from 25% up to 50%, averaging about 40% overall. The contingency allowances have been set in consultation with RTA based on the risks identified in the risk management study and experience from previous projects.

Key contingency items include:

- Property acquisition contingency factor - 50 per cent.
- Noise mitigation contingency factor - 50 per cent.
- Earthworks contingency factor - 35 per cent.
- Drainage contingency factor - 50 per cent.
- Pavements contingency factor - 25 per cent.
- Bridges contingency factor - 35 per cent.
- Utilities adjustments contingency factor - 50 per cent.

Based on the shortlisted options described in Chapter 8, the indicative total cost of the project on completion has been estimated in the range \$370 million to \$440 million depending on the route chosen and the results of the design refinement process. These figures are based on January 2005 dollar costs. The estimate of total project cost includes all costs associated with the design, construction and handover of the project.

Strategic cost estimates have been prepared for each of the shortlisted route options A to D combined with tunnel approach Option T1 and again for each shortlisted route options A to D combined with tunnel approach Option T2.

The indicative cost estimates for each option are summarised in **Table 9.1**. The costs have been prepared for comparative purposes only and would be subject to change during design refinement.

The results indicate that there are no major cost differences between the short listed options. Option D would be slightly cheaper despite the extra length, a result of the lower volume of earthworks and fewer bridge structures. Tunnel approach Option T2 would be a little more expensive than T1 due to the need to reconstruct a greater length of the existing highway and also because the tunnel would be slightly lower and longer.

Table 9.1 Comparative Costs of Short List of Route Options

Short List Option	Length (km)	Indicative Cost
With Tunnel Approach Option T1		
A-T1	19,792	\$400 million
B-T1	20,152	\$410 million
C-T1	19,721	\$400 million
D-T1	22,049	\$385 million
With Tunnel Approach Option T2		
A-T2	19,785	\$410 million
B-T2	20,145	\$420 million
C-T2	19,714	\$410 million
D-T2	22,042	\$395 million