



# Appendix B

## Parameter Based Estimate Assumptions

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## 1.0 Parameters

The parameters developed for this estimate are listed below and have been built up from a database compiled from past projects:

Parameter	Parameter Cost (\$M)
Two lane rural road	4.0 /km
Four lane rural road	8.0 /km
Two lane urban road	20.0 /km
Four lane urban road	25.0 /km
Widening 2 lane to 4 lane, rural	3.0 /km
Widening 2 lane to 4 lane, urban	15.0 /km
Grade separated intersection	15.0 per intersection
Two lane bridge	4.5 each
Four lane bridge	8.5 each
Double track rail re-alignment	5 /km
Single track rail re-alignment	3 /km

These parameters have been used to build up a physical works cost by measuring the length of road (from drawings) and multiplying that by the associated parameter rate.

## 2.0 Professional Services

The proposed professional services fee (I&R, D&PD and MSQA) has been taken to be 15% of the physical works cost.

## 3.0 Property Costs

Property costs have been estimated by using land values (rates) extracted from the land valuation component of the 2008 State Highway valuation and multiplying this rate by the measured area (from AutoCAD). The land values vary depending on the land use adjacent to the state highway. The measured area extends from the existing state highway designation to the toe of the earthworks footprint. An allowance has then been made to purchase additional land in areas where the remaining area of a parcel becomes unusable. This has been accounted for by multiplying the measured area by a factor representative of any additional land take required (i.e. more in urban cases). This methodology has been used to develop an indicative property purchase cost for each stage.

#### **4.0 Exclusions and Assumptions**

The following is a list of exclusions and assumptions that should be noted with these figures:

1. We have used the cost index of March 2009.
2. No specific design has been undertaken for any aspects of the works. Therefore a parameter cost approach has been adopted. Parameter rates should be used with caution.
3. No information is available on existing services, but parameter costs include some allowance (based on previous projects)
4. The measured property purchase area is the earthworks footprint in both rural and urban cases. An allowance has been made for addition land purchase (see above).