

# Option Evaluation

How are the options being evaluated?

## Option evaluation

Using best practice assessment tools, the options are evaluated against multiple criteria and then sensitivity tested.

The options evaluation was undertaken in accordance with Building Queensland's Business Case development framework and Infrastructure Australia's assessment frameworks. The aim of these frameworks are to assess potential options under a consistent methodology. This way projects can be assessed in a consistent way.

## Evaluation Criteria

The options were evaluated against four criteria – transport outcomes, land use/city-shaping, cost and risk and sustainability. The weightings were determined using the key objectives of the project as a guide. The criteria and weightings are outlined in table 1 below:

Criteria	Description	Core Assessment Weighting
<b>Transport Outcomes</b>	Impacts of the option on mode share, travel times, congestion, public transport, reliability, future transport network development. Focused on public transport impacts.	45%
<b>Land Use and City-Shaping</b>	How the option impacts on the land use outcomes in the corridor and enables urban transformation and promotes urban consolidation development. This criterion considered the amount of development likely to be generated by each respective mode and its ability to satisfy the urban consolidation criteria of the SEQ Regional Plan and Council.	30%
<b>Cost and Risk</b>	Comparative whole of life costs including capital and operating cost estimates over 30 years for each of the scoped options, discounted at 7 per cent real (economic discount rate).	15%
<b>Sustainability and livability</b>	This criterion aims to achieve a positive impact of the option as regards air pollution, noise pollution, water pollution, greenhouse gas emissions, impact on nature and landscape, and urban separation and urban amenity.	10%

Table 1 Mass Transit Assessment Criteria

## Evaluation

A quantitative Multi-Criteria Analysis (MCA) approach was adopted using transport model outputs and costs to evaluate the options. The highest performing option scored 10, other options were then scored on a pro-rata basis. The results from the evaluation are summarized in table 2 below.

Criteria	Bus Service	Bus Network	Road Network	Quality Bus Corridor	Trackless Tram	Bus Rapid Transit	Wireless Light Rail	Light Rail Transit
Transport outcomes	7.2	7.5	5.4	8.4	9.6	9.6	9.7	9.9
Land use and city-shaping	0.0	0.2	0.0	0.5	5.6	5.6	10.0	10.0
Sustainability	3.3	3.8	0.0	5.0	9.9	9.9	10.0	10.0
Cost	8.1	6.3	10.0	4.6	2.0	2.0	1.8	1.8
Results	4.8	4.7	3.9	5.1	7.3	7.3	8.6	8.7
Progress to next stage	No	No	No	Yes	Yes	Yes	Yes	Yes

Table 2 Multi Criteria Assessment Outcomes

## Sensitivity Testing

To test the robustness of the results from the multi criteria assessment, several tests were run using alternative scenarios. These tests considered:

- An equal weighting, to test the outcome if all criteria are considered to be equivalently important
- Cost criterion greater than land use, to test the outcome if cost and transport are considered more important
- Only the transport outcomes, land use and cost criteria, as these act as a proxy for an economic assessment.

Light rail transit (wireless), light rail transit, trackless tram and bus rapid transit remained the highest performing options under all sensitivity tests undertaken.

The draft Options Analysis recommends that the top 5 ranked options be further investigated in the Detailed Business Case.

## Have your say

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