

Preliminary assessments on shortlisted options

Introduction

The draft Options Analysis report provides a preliminary assessment of economic, financial, social and environmental matters as they relate to the shortlisted options. The short listed options included category B systems such as the Bus Rapid Transit (BRT), Trackless Tram (TT) and Light Rail Transit (LRT) projects as well as a Quality Bus Corridor (QBC) (see fact sheet 6 for descriptions). The Detailed Business Case will progress these assessments further as the options are further refined.

Social and Environmental

Initial desktop assessment of the social impacts from the short listed options suggests that the expected social impacts are perceived to be similar for the BRT, TT and LRT project options. This includes benefits and costs that have been allocated into the key categories for the social impact evaluation notably community, personal, public health and amenity, lifestyle, cultural and quality of life impacts. The Quality Bus Corridor option was identified as having few impacts but also few community benefits.

A high-level review of publicly available information was also conducted for environmental, heritage and planning matters of interest. Key environmental risks of the Project include:

- Impacts on Matters of National Environmental Significance (MNES) located either within, or in proximity to the Project area, including:
 - Listed threatened ecological communities (may occur within the Project area)
 - Listed threatened flora and fauna species (may occur within the Project area)

- Ramsar declared wetland of international importance, Moreton Bay Ramsar wetland (occurs adjacent to the Project area).
- Impacts on Matters of State Environmental Significance (MSES) located either within, or in proximity to the Project area, including:
 - Essential habitat for protected plants under the NC Act 1992
 - High risk areas for protected plants under the NC Act 1992
 - Moreton Bay Ramsar wetland of international importance (High ecological value waters) under the Environmental Protection (Water and Wetland Biodiversity) Policy 2019, Schedule 1 (In accordance with MSES definitions (e) and (f)).
- Hydrology and flooding
 - Climate change impacts relating to rising sea levels and increased flood events
 - Impacts on the natural hydrology of creeks and wetlands (e.g. levels and flows)
 - Impact on the current hydrological regime of the creeks within and adjacent to the Project area
 - Impacts on flow pathways and afflux (change flood levels) and flow velocities resulting in scouring of waterways and inundation to the road corridor and adjacent properties.

The Environmental Assessment has identified further investigations and/or monitoring recommended to refine the appreciation of potential environmental and/or heritage impacts as the project design progresses.

Financial

A financial model was developed to determine the construction, mobilization and operating period costs and present cash flows to the end of the analysis period for each option. Revenue has been used to offset operating costs to present the net cash flows which provides a net project value (NPV). This approach reflects a typical cash flow analysis methodology for the assessment of infrastructure projects. The best comparison for total project costs is to compare the construction and operating costs against the forecast fare revenue. Table 1 below provides a summary.

All five reference projects will require significant funding during the delivery stage to accommodate the infrastructure development required. As with all public transport projects, none of the options generate sufficient farebox revenue during the appraisal period to recover capital or operating costs. A further detailed cost estimate will be required for the preferred reference project(s) during the Detailed Business Case stage.

Cost Item	Net Present Value (\$000)				
	Quality Bus Corridor	Trackless Tram	Bus Rapid Transit	Wireless Light Rail	Light Rail
Construction Costs	(426,701)	(1,343,899)	(1,331,623)	(1,546,795)	(1,574,456)
Operating Costs	(700,361)	(1,578,139)	(1,578,139)	(1,634,013)	(1,634,013)
Farebox Revenue	245,639	529,939	529,939	539,027	539,027
Net Project Value	(881,423)	(2,392,098)	(2,379,823)	(2,641,781)	(2,669,441)

Table 1 Comparison of the Net Project Values (NPV) of all options

Economic

The economic analysis uses a cost benefit analysis framework that generates a Benefit Cost Ratio (BCR) for each project. The higher the BCR the better the project. The economic analysis assessed a broad range of benefits that the options would generate including land use change, employment outcomes and travel behaviour in the Sunshine Coast Region. Table 2 below provides a summary of the benefit cost ratio for each option.

Appraisal outcomes	Light Rail	Wireless Light Rail	Bus Rapid Transit	Trackless Tram	Quality Bus Corridor
BCR (No land use change)	0.4	0.4	0.4	0.4	0.7
BCR (With land use change)	1.2	1.2	0.7	0.7	0.7
BCR (With land use change considering further consideration of BRT/TT effects)	1-1.2	1-1.2	0.7-0.9	0.7-0.9	0.7

Table 2 Benefit cost ratio summary for each option

The economic analysis suggested that:

- Light Rail Transit has the greatest potential to support land use change given the take-up it supports. Depending on the level of land use change that occurs, it could realise the highest BCR. However, Bus Rapid Transit and Trackless Tram appear able to achieve higher economic outcomes on the basis that they offer a similar level of transport quality and capacity. This should be the subject to further consideration in the Detailed Business Case.
- Based on the results, it is considered that there is sufficient justification for further consideration of mass transit to deliver increased public transport mode share together with improved land use outcomes on the Sunshine Coast, and to achieve the Council's and Queensland Government's strategic objectives and maintain the lifestyle and amenity attraction of the Sunshine Coast.

How will you
**Make
your
way?**

Assessment of
shortlisted options

Have your say

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