

Summary of GHD's Light Rail Pre-feasibility Study

This independent study was commissioned by FIDO to assess the feasibility of locating a light rail cross island route from Urang Creek to Poyungan Valley. FIDO did not direct how GHD conduct this study other than to suggest a route. However, FIDO could not provide the funding to complete a comprehensive feasibility study. This summary is from MOONBI 97 in April, 2000. It is available at www.fido.org.au.

Critical Data

Patronage and Pricing: *Previous studies (GHD, 1991; BTA, 1998) have indicated that the success of such a system would require integration with existing Island services. Figures suggest that of the 158,422 visitors carried by tour operations (1998/99), about 100,000 come across from Hervey Bay. A substantial number of these visitors (probably around 75,000 - 80,000) would be required to use the train service per annum to ensure viability. With day tours ex-Hervey Bay being around \$70 - 80 for adults/\$40 children, rail prices would probably be in the order of \$15 - 20 each way (BTA, 1998).*

Capital Costs: *This study has not undertaken a detailed economic assessment of the proposal, however the BTA report (1998) did make some preliminary cost estimates based on original costings by GHD (1991) and the routes reviewed by BTA (Kingfisher to Eurong with a single train and the same route with two trains and an additional station at Central Station). They estimated the current capital costs at between \$7.9 million and \$10.2 million for the above options respectively.*

A new landing facility at Urang Creek would also be required in addition to the light rail network. Costs for construction of a jetty similar to that currently operating at Kingfisher Resort were estimated at:

- *\$1,800 - \$2,000/m² for construction of the jetty;*
- *\$1,200/m³ for construction of the concrete barge landing platform; and*
- *\$50/m³ for rock footings.*

Based on these estimated figures, a 350m long, 3m wide jetty with a 0.25m x 10m x 30m concrete barge platform would cost in the order of \$2.0 - \$2.2 million plus rock footings. Should an office, shop or other facilities be required, these would be at an additional cost.

Given the above, capital costs to construct the light rail network and jetty would be in the order of \$9.9 - \$12.4 million. The exact costs will vary with the number and types of facilities proposed, the availability of second hand rails and the types of engineering structures required.

Operating Costs: *Based on estimates by BTA (1997) and GHD (1991), assuming 10 staff required for 365 day operation of the facility and regular maintenance, annual operation costs for the proposal would be in the order of \$600,000 to \$920,000 depending on the number of trains operating.*

Discussion

Recreational impacts on Fraser Island from camping, fishing and vehicle movement have been identified by several sources as causing significant degradation. Vehicle impacts, particularly from heavy vehicles, is causing degradation of key visitor routes which in term is impacting on the natural environment through sedimentation of lakes and streams. Whilst the economic and engineering costs have been identified by QPWS, little has been done to quantify or address the associated environmental impacts.

Further transportation studies are evidently being considered by QPWS which may address issues such as vehicle size, road closures, traffic management for both tour operators and 4WD drivers. Given the significance of the Island to the local tourism economy, it is unlikely that serious constraints will be placed on tour operators using heavy vehicles on the island, in particular at the key recreational site. As such, an alternative transportation option is required that achieve the objective of distributing passengers without impacting on the environmental values and management economics of the Island. One alternative to achieve this is to control the impacts from cross island traffic and focus use on beach transport which is more sustainable.

The light rail option has been shown to be commercially viable if a significant proportion of island visitors use the service. This can only be guaranteed if some types of visitors are compelled to use the service. As day visitors are the greatest proportion of passengers using heavy vehicles, it make sense to try and compel these passengers to use light rail for at least some part of their journey. The proposed Bogimbah Road option would take tour bus traffic off Moon Point and Wanggoolba Roads and concentrate passengers on a sustainable cross island service. Vehicles travelling along the eastern beaches cause minimal degradation and allow passengers to visit sites to the north and south. Central Station and Lake McKenzie can be accessed via a one-way road network from Eurong Beach.

A preferred route has been identified which does not impact on existing vehicle movement so does not inconvenience any road users, particularly along key routes. Constructing the light rail over an existing road will greatly minimise environmental impacts as minimal vegetation clearing will need to be undertaken. The route will provide a novel and historic tourism opportunity and will provide the passengers with a varied environmental introduction into the Island, where issues such as conservation, sandmining and logging can be easily discussed in a comfortable and stable environment.

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Given the apparent benefits and commercial prospects of such a scheme, further consideration of the light rail proposal is warranted. Assessment of the potential environmental impacts, economic feasibility and transport integration aspects is required before such a proposal could proceed to the detailed planning phase. As such, this report recommends a more detailed feasibility study should include:

- A needs analysis which identifies projected passenger demand and includes projected visitation rates for current conditions.
- disaggregation of levels current usage of different forms of transport to the Island and on the Island (including passenger ferries, vehicular ferries, private boats, private vehicles, tourist vehicles, taxis and buses).
- analysis of existing tourist facilities and services.
- overview of environmental impacts of current and future transport activities on the island.
- identification of opportunities to develop complementary and synergistic public transport and visitor facilities and to reduce pressures on environmentally sensitive features (such as linkages with existing and future island transport services and ecotourism opportunities).
- projected visitation rates if a light rail facility were available.
- Identify route and network options.
- Identify complementary infrastructure and opportunities.
- Analysis of factors necessary for the Queensland Government to address prior to inviting expressions of interest.
- Conduct a preliminary review of potential environmental impacts, with particular reference to cultural heritage, flora and fauna, water quality (fresh and marine), hydrology and noise.
- Undertake a cost benefit analysis to assist in determining whether the proposal offers a net community benefit and whether it is commercially feasible.
- Undertake consultation with all key stakeholders.

Conclusions

Increased road patronage on Fraser Island, in particular heavy vehicles, has led to degraded roads and environmental impacts on the Island's waterways. This report has assessed the option of a light rail system on Fraser Island to replace some cross island heavy vehicle passenger and freight services. The report has examined a number of options (both rail and traffic management) and concludes that a light rail system located on the existing Bogimbah Road could provide significant environmental and tourism benefits by replacing existing heavy bus services on some roads and by providing a new tourism opportunity.

This report recommends that given the potential benefits from such a proposal, further studies should be undertaken to assess the overall feasibility of the project and how it would be incorporated into the existing transportation and tourism networks. A feasibility study, as detailed in Section 7, should be undertaken prior to any detailed planning phase.

FIDO's Response

FIDO commissioned this study in 1999 but didn't have enough resources to enable GHD to undertake a more detailed feasibility. However, on the basis that there is *prima facie* evidence that light rail on Fraser Island is a feasible.

FIDO wants government fund the feasibility study for their preferred light rail route. Such a study should also clarify the government's preferred options to build and/or operate a Fraser Island light rail. Since the private sector wants some clear indication of government intent before investing in their own feasibility studies this seems to be a pre-requisite to the next step to address the urgent problems arising from sedimentation from the use of 4WDs on Fraser Island.

The government would then be in a better position to call for Expressions of Interest from the private sector. It may also attract more respondents from the private sector. FIDO believes that the cost of the outlay will be more than recouped in royalties when the light rail is built as a private operator provides the Queensland Government with a share of the operating profit. The Queensland Government would also save enormously on its road maintenance expenditure on Fraser Island.

