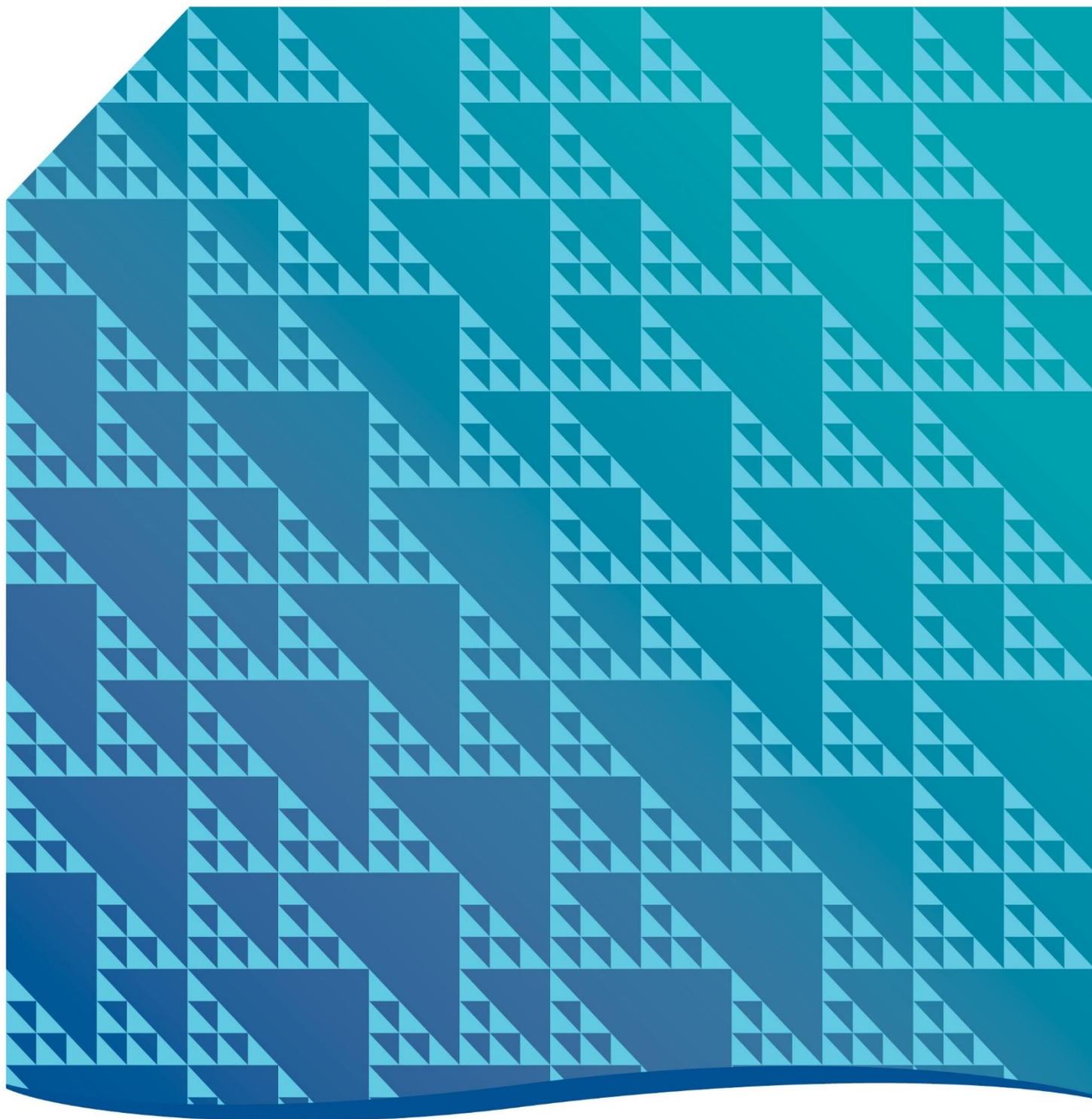


Final advisory report

January 2016

Review of a proposed light rail system in Hobart



Context for this Review

The development of a light rail service through Hobart's northern suburbs has attracted significant interest over recent years. A number of independent consultancies examining the economic viability of a light rail service, under a range of operational scenarios, have been undertaken in support of the concept.

In 2014, freight rail services between Hobart and Brighton ceased, potentially opening up the existing rail corridor to other uses.

The Tasmanian Government has requested Infrastructure Tasmania to review past analysis on the development of a light rail system in Hobart, and make recommendations on the future priority of this project, together with the future use of the rail corridor.

In providing its recommendations, Infrastructure Tasmania has considered the full range of issues and opportunities influencing the development of a light rail service.

Past evaluations of a light rail service have focused on the development of light rail from a public transport and funding perspective. The reports are comprehensive in their analysis of the associated project costs and benefits.

Broader considerations, including the potential for light rail to be a catalyst for urban renewal; engagement with the private sector regarding investment interest; and implementation of planning and regulatory changes to support more complimentary land uses adjacent to the corridor, have been discussed but not investigated in any significant detail.

Critical mass and scale have previously been highlighted as challenges to the financial viability of a light rail service. There has also been a sentiment among supporters that if the infrastructure is provided, benefits will flow.

Infrastructure Tasmania has focused on these broader considerations in providing its recommendations. Addressing the strategic issues and opportunities associated with light rail is key to ensuring a full and comprehensive assessment of the potential for a light rail service in Hobart's northern suburbs.

In relation to future use of the corridor, it is recommended that the existing corridor be maintained as a transit corridor for light rail or any alternative transit use that might be identified in the future.

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Introduction

The proposal for a light rail seeks to address a range of considerations -

- Improving the economic performance of Hobart and Tasmania by reducing the cost of transportation.
- Improving the quality of public transport from the northern suburbs to the Hobart CBD and therefore improve social equity by improving access to the CBD, particularly for elderly residents and people from lower socio economic backgrounds.
- Reducing the environmental impact of transportation in Hobart by offering a more sustainable form of transportation.
- Assisting with increasing the scale and diversity of the CBD by improving transportation links to the Hobart CBD and therefore making the Hobart CBD a more attractive location for businesses, research institutions etc. to locate.
- Catalysing denser development along the corridor.
- Improving the resilience of Hobart in the long term by reducing the city's car dependence and hence vulnerability to oil price shocks.
- Providing a zero emission mass transit alternative capable of easily accommodating future transport demand increases.

Greater Hobart has a small population, low-density urban form and a high car dependence. Over recent decades, significant levels of residential and commercial development have occurred outside central Hobart.

Traffic congestion is confined to short, peak periods on key arterial roads, however these peaks appear severe when compared to normal daily traffic flows. Public transport usage is currently low, however active transport rates are comparatively high.

A range of transport and land use planning measures have been identified as potential solutions to improve passenger transport outcomes in Greater Hobart. Over recent years, the focus of public discussion has been a proposed light rail service through Hobart's northern suburbs, utilising the existing, unused rail corridor from Macquarie Point to Brighton.

In response to the high degree of public interest, the previous Tasmanian Government undertook a series of expert consultancies, examining the potential viability of a light rail service for Hobart. Generally, these consultancies focused on a project-level assessment of light rail as part of a broader objective to secure project funding.

The briefs for the consultancies appropriately focused on a transport solution which considered patronage, catchment areas and development costs in detail. Only limited attention was given to the potential use of the corridor as a catalyst for broader city shaping or urban renewal activity, and where reference is made to this potential, the focus is on a 'build it and they will come' approach. This is a risky strategy for a city the size of

Hobart, which faces modest population growth across a highly dispersed urban area, and which lacks major traffic congestion, a key factor facilitating a modal switch to public transport.

Ensuring appropriate and supportive land use and development adjacent to the rail corridor is an important part of the attractiveness and viability of light rail service. To date, there has been only limited engagement with local government or the private sector regarding opportunities to re-zone and develop land near the rail corridor to support high-density housing, new commercial development and new public spaces and amenities.

Past consultancies highlighted the importance of feeder bus services to the viability of a light rail service. In this context, Infrastructure Tasmania contemplated whether benefits could accrue from common ownership of both transit modes in terms of scale, timetabling, ticketing and enhanced utilisation. However, on balance it was considered that an optimum operating model for the delivery of a light rail service is likely best developed and responded to by the market. Operating costs have been identified in past reports, and progression to a firm proposal could and should contemplate maximum integration with other modes of public transport.

Councils impacted by the route have taken a keen interest in the potential development of a light rail service and are supportive of the concept. The ability to connect the Hobart Waterfront with MONA, in particular, has significant support from councils. Infrastructure Tasmania has conducted informal discussions with Hobart and Glenorchy City Councils on widening the parameters of any future consideration around opportunities beyond the simple provision of a transit solution. This has included discussions on density, land availability and present zoning.

Further engagement with the Hobart and Glenorchy City Councils, in particular, is required to understand the opportunities associated with light rail and development along the existing corridor. These discussions are a necessary precursor to detailed engagement with the private sector regarding investment interest in the corridor.

Decisions are also required to identify a final optimum operating service model. Track length, gauge and motive power are key variables influencing both capital and operating costs, and the type and configuration of rolling stock. Choice of rolling stock also has implications for ancillary infrastructure such as stations and platform heights.

A detailed analysis of land use opportunities that support urban renewal and commercial opportunity, together with estimated timeframes for implementation, will inform the optimum length of track and final destination. This information should then be utilised to assess an appropriate operating model, and to shape a final costing of the capital requirements of the project.

Overview of passenger transport in Greater Hobart

The issues associated with passenger and public transport in Greater Hobart have been well documented and discussed (refer *Tasmanian Urban Passenger Transport Framework 2010*, *Southern Integrated Transport Plan*, *Riverline: Hobart Light Rail Strategic Assessment*). At a national level, recent commentary from Infrastructure Australia has reinforced the challenges and complexity of addressing urban passenger transport issues (Australian Infrastructure Audit 2015).

Greater Hobart has a small population, low-density urban form and a high car dependence. Over recent decades, significant levels of residential and commercial development have occurred outside central Hobart. While the Hobart CBD remains the metropolitan region's major employment and service centre, sub-regional commercial centres have become increasingly important and are now of themselves major trip attractors.

The availability of affordable housing, together with lifestyle reasons, have led to higher rates of residential development in municipalities such as Kingston, Clarence, Sorell and Brighton. In contrast, the supply of high-quality, attractive infill development has been more limited, with infill development accounting for around 15% of residential development across Greater Hobart (PricewaterhouseCoopers, 2014).

The key issues impacting on metropolitan passenger transport outcomes in Hobart include -

- Greater Hobart has a highly dispersed urban area. While it has a population of just over 200,000, its geographic footprint is large and is comparable to that of more densely populated cities such as Sydney, New York and London.
- Passenger transport is dominated by car-based travel, with the percentage of people driving to work higher than the national average. Use of public transport is low compared to other states, however the percentage of Tasmanians who walk or cycle to work is higher than the national average.
- A small number of key arterial roads provide access to and through central Hobart. While congestion on these key arterials is confined to short periods during morning and afternoon peaks (particularly during school terms), these peaks are comparatively severe when compared to general traffic flows throughout the day.
- The region's low-density, dispersed settlement pattern makes the provision of public transport services difficult, with generally low economies of scale and a complex system of bus routes.
- Car parking is a key determinant of private car usage. Greater Hobart has an adequate supply of low-cost and free car parking across all major commercial centres, including within central Hobart.
- Forecast long-term population growth for Greater Hobart is moderate. The largest population increases will be in Kingborough and Clarence, with high rates of growth (but from a lower population base) in outer areas such as Brighton and Sorell. The largest local government areas by population are forecast to remain as Clarence, Hobart, Glenorchy and Kingborough.

Review of past evaluations in relation to a light rail service

A series of independent consultancies have been undertaken examining the costs and benefits associated with a light rail service through Hobart's northern suburbs. These consultancies focused on the viability of light rail as a discrete transport project, examining potential patronage, operating models and project costs and benefits as part of an economic evaluation of operational viability.

The consultancies were commissioned by the former State Government, and include the preparation of two business cases by ACIL-Tasman (2011 and 2013), a peer review by AECOM (2012) and development of a comprehensive project evaluation by PricewaterhouseCoopers(PWC) (2014) (see Appendix I).

In 2009, Parsons Brinckerhoff also examined the role of light rail in Hobart's transport system as part of developing an integrated package of passenger transport and land use planning measures. This work included a high-level analysis of a potential rail extension to the University of Tasmania (UTAS) in Sandy Bay.

Project scope

The consultancies focused on the economic evaluation of different light rail service options, as part of a broader objective to develop a business case for Australian Government funding.

The final reports cover a range of operational and project development issues and options, including -

- Location of Hobart CBD terminus and station stops -with at least preliminary analysis of options terminating in Glenorchy, Claremont, Granton, Bridgewater and Brighton.
- Motive power - electric overhead and diesel options were fully considered.
- Optimum operating model - analysis of a continuum of service options, balancing travel speed with accessibility (i.e. a faster service with a low number of stops, to a slower service with a higher number of stops).
- Impact of selected 'non-standard' project benefits, incorporating assumptions that lie outside accepted economic evaluation methodologies, notably a very high 'sparks effect' and a zero transfer penalty.
- Relationship to broader, non-quantifiable benefits - social inclusion, agglomeration, greater urban density.

All consultancies considered re-use of the existing rail corridor, and took a deliberately conservative approach to expenditure in order to maximise the project benefit cost ratio (BCR). While this approach provided a significantly more cost-effective solution compared to the development of any new rail alignment, use of the existing corridor impacts on the operational characteristics of any service. For example, in relation to patronage – large sections of the existing corridor having limited trip attractors and limited attractiveness for

high-density residential development – and speed, which is constrained by retention of at-level road crossings along the existing corridor.

Light rail service options

Two light rail service options were examined in detail - Hobart to Claremont and Hobart to Glenorchy. A third option from Hobart to MONA was examined at a high level only.

[Hobart to Claremont \(ACIL-Tasman, 2011\)](#)

This option investigated a rail service from the Hobart CBD to Claremont. In identifying this route, the study concluded that any extension of the service to Granton, Bridgewater or Brighton was unlikely to deliver benefits commensurate to the cost of providing a rail service.

The specific service characteristics examined in this study were -

- provision of seven stations at Claremont, Berriedale, Glenorchy, Derwent Park, Moonah, New Town, and Mawson Place, with an optional additional station in Elizabeth Street between Davey and Macquarie Streets
- 15-minute service frequency during weekdays from 6am to 7pm
- average speed of 40-44km/h to a maximum of 60 km/h
- one major park and ride facility at Claremont, supported by smaller parking areas en-route
- two bus interchanges - Glenorchy and Claremont.

The final BCR for the Hobart to Claremont option was very low - at zero without the inclusion of a very high 'sparks effect', which is an attempt to measure the potential increase in patronage associated with the relative attractiveness of a transport mode to consumers. The size of the 'sparks effect' that had to be applied in order to achieve a positive BCR was well in excess of accepted economic parameters (representing around 250% of base demand to achieve a BCR of one).

[Hobart to Glenorchy \(ACIL-Tasman, 2013\)](#)

This study investigated a shorter 8.6km route between Glenorchy and Franklin Square in central Hobart. The service considered up to five stations - Hobart, Macquarie Point, New Town, Moonah and Glenorchy - and retained a 15-minute service frequency throughout weekdays. Rail services were integrated with high-frequency feeder bus services in the Moonah-Glenorchy area, supported by improved services from Brighton and New Norfolk to the Glenorchy station stop.

The study examined four different operating optimal models, incorporating different trade-offs between speed and accessibility. The final report includes a discussion of non-monetised costs (e.g. traffic delays during operation) and benefits (e.g. improved access to educational and employment centres).

The rapid transit model, which included three stops at Glenorchy, Moonah and Elizabeth Street, delivered the greatest benefits. While the business case underpinning this service was comparatively stronger, a positive BCR remained reliant on two key features, a -

- high-frequency bus feeder network; and
- zero 'transfer penalty' between the bus network and light rail, which is below the currently accepted transfer penalty of five minutes. Any transfer time above one minute resulted in a BCR below one.

The estimated establishment cost of a light rail service from Hobart to Glenorchy was \$70-78 million. The ongoing operational and maintenance costs for the rapid transit model were \$2.3 million pa (2013 dollars) for the first 20 years.

Additional considerations relating to a light rail service

Strong population growth and major traffic congestion are key motivators for the development of urban mass transit systems. Higher residential densities are a key enabler of any mass transit system. In the absence of one or both, broader policy, planning and public transport interventions become more important in establishing an environment that will support and sustain a successful urban transit system.

All expert consultancies noted the broader metropolitan context in which a light rail service for Hobart would operate. This included urban sprawl, low to moderate population growth, low use of public transport, and ease of access to low-cost car parking. Implementing measures to address these issues, ahead of developing a light rail service, significantly reduces the risks associated with the proposal.

These issues were most comprehensively addressed by PricewaterhouseCoopers (2014), with the ACIL-Tasman reports (2011, 2013) focusing on non-monetised costs and benefits (e.g. improved social inclusion and access to employment; tourism and health benefits) as part of a broader economic evaluation of a light rail service.

Generally, the broad commentary included in the respective final reports indicated support for an integrated, staged approach to the development of any light rail service, with a combined suite of policy, planning, operational and infrastructure measures likely to have the greatest impact on the success of any light rail service. PricewaterhouseCoopers (2013) concluded that without additional policy interventions, a light rail service would not be viable.

Significant analysis has been undertaken in the above reports in relation to optimum operating service models for light rail. Track length and gauge, type of rolling stock, motive power, (e.g. diesel, electric, battery) and whether access is to be provided for other rail users (e.g. tourist rail) impact on final capital upgrade and operating costs. A range of options based upon these variables were examined in previous reports, primarily based on a achieving lowest-cost operating model, however there is merit in reviewing these options in the context of an operating model that meets broader service, operating and financial objectives.

Narrowing the suite of variables would allow an up to date analysis of costs and practical consideration of the best technology fit for a service and requisite infrastructure.

Stakeholder consultation

Stakeholders were afforded a high degree of input into the scoping, evaluation and analytical processes underpinning the consultancies. For example, the first business case was overseen by a Community Advisory Panel comprising local government, peak bodies and interest groups, and the University of Tasmania. AECOM's Peer Review (2012) provided an opportunity for key stakeholders to critique the first business case, with AECOM responding to each individual issue raised.

The findings of the consultancies remain contested by some stakeholders. In addition to specific issues (refer AECOM's Peer Review (2012)), there are two issues -

1. An inherent tension between the quantitative methodology underpinning the evaluation of a light rail service from an economic and financial perspective, versus the desire of some stakeholders to incorporate and place greater weight on non-standard and non-monetised benefits as part of a broader consideration of light rail.
2. Differing views as to whether light rail can, by itself, facilitate the land use change required to attract and sustain patronage, versus a view that key measures such as urban infill targets, tighter car parking policies, and a stronger public transport culture, should precede a light rail service (in order to strengthen any case made for external funding assistance).

Commentary on the scope of past evaluations

Past consultancies provide a comprehensive quantitative evaluation of the costs and benefits of a light rail system, under different project scenarios. The consultancies -

- appear robust in their economic analysis and are consistent with Infrastructure Australia's evaluation framework;
- are supported by detailed patronage and service modelling, which also consider the impact of non-standard variables ('sparks effect', zero transfer penalty);
- have benefited from the input of independent transport planning and rail experts, and key stakeholders;
- examine all realistic route lengths and service model options; and
- consider non-monetised costs and benefits and supportive land use planning measures.

The past evaluations do not (and were not required to) -

- evaluate alternative transport modes as a way to address Hobart's transport issues or achieve broader outcomes;
- investigate specific mechanisms to deliver the policy and land use planning changes required to support light rail; for example, identification of infill targets; a streamlined approvals process for development adjacent to the corridor; or a comprehensive metropolitan car parking policy; or
- involve the private sector.

In this context, some of the strategic factors that might benefit from further examination include -

- *Consideration of the role of light rail in facilitating urban renewal.* If developed appropriately, light rail has the potential to shape Greater Hobart as a metropolitan centre, and act as a catalyst for major urban renewal. This potential was discussed at a high level by PricewaterhouseCoopers (2014), but was not supported by any discussions with and between local government and the private sector regarding opportunities to rezone land to support increased housing density, appropriate commercial development and new public spaces and amenities along the corridor.
- *Greater and more targeted engagement with local government.* Councils impacted by the route have taken a keen interest in the discussion and progression of a light rail service and have been very supportive of the concept. Linking the bookends of the Hobart Waterfront with MONA and beyond, in particular, has significant support from local government. Further and more detailed engagement with Hobart and Glenorchy City Councils is required to understand and identify the opportunities associated with development adjacent to the rail corridor, including the potential for the corridor to act as a catalyst for urban renewal. These discussions are a necessary precursor to detailed engagement with the private sector regarding investment opportunities.

- *Measures to generate interest in development adjacent to the corridor.* In some other jurisdictions, the development of light rail has been subject to a competitive bids process, with bidders responding to key specifications, supported by scope to present innovative proposals to enhance any service. This concept could extend to opportunities for the exclusive development of land around rail stations.

Additional considerations in evaluating a light rail service

What should be the extent of any light rail service?

A range of potential light rail routes have previously been identified, including new rail extensions to the Sandy Bay campus of the University of Tasmania and via the North Hobart restaurant strip, and a service along the existing line to Brighton. The most recent study focused on a route from the Hobart waterfront to Berriedale (including MONA) as a first stage. A key reason for this choice was to maximise the population catchment available within the serviceable route.

One of the most significant costs associated with light rail projects in other parts of Australia and internationally is the acquisition of land on which to build a rail line. Hobart is fortunate to already have a dedicated rail corridor and an existing rail line. The corridor has the added advantage of being able to service the soon to be developed Macquarie Point area. It makes sense to maximise the existing corridor to the extent possible to bring about a light rail service.

The northern and southern extremities of the existing corridor present some challenges which require further analysis and consultation in respect of access, service levels and facilities. The southern end would likely benefit from a connection into the Hobart CBD, rather than commencing/terminating at Macquarie Point. The construction of a new rail line along the waterfront in Macquarie Street with the capacity to interface with the bus transit centre in Elizabeth Street would provide direct access to both the city centre and to bus transport options. Hobart City Council and Metro Tasmania would have a significant interest in how any such interface would be developed and operated, and detailed consultation would be required in relation to both suitability and form.

At the northern end of the corridor, Granton is the most likely end destination for any light rail service. Although a reasonable population catchment exists in the Brighton municipality, servicing this area requires a rail crossing over the Derwent River. This crossing would add significant cost to the new Bridgewater Bridge. The existing Bridgewater Bridge and causeway are reaching the end of their serviceable life in terms of functionality and levels of service, and are costly to maintain. The existing Bridge will likely be removed or decommissioned once the new Bridge is constructed, removing the potential for rail access.

The provision of high-frequency feeder bus services to and from the Brighton area to a rail station in the Glenorchy-Granton corridor, supported by park and ride facilities, provides a cost-effective transport solution that could deliver a very high standard public transport service to these communities. Consideration should also be given to improving bus connections for commuters travelling across the Bowen Bridge, to a rail station at Glenorchy.

The end point of any service will likely be influenced by the potential for urban renewal and identified commercial opportunities. These considerations will impact upon ultimate capital and ongoing operating costs.

Potential for urban renewal

Urban transformation occurs when a major intervention provides the catalyst for significant and/or rapid social, economic or spatial change. Urban transformation often results in the conversion of previously problematic or under-utilised areas of a city into functional and attractive spaces. It can also support improved social integration where social exclusion exists and reclaim areas where living spaces have been lost.

Support for light rail has focused on re-development of the existing, dedicated rail corridor to provide a modern transport solution for the northern suburbs of Hobart. There has been only limited consideration of the broader role of light rail as a catalyst for urban renewal or in reshaping precincts and communities in Glenorchy and Hobart.

In the context of Greater Hobart's urban sprawl, a large-scale project such as light rail has the potential to generate urban change and renewal. Achieving large-scale and enduring urban change will require supportive land use policy and planning responses, including measures that facilitate high-density urban infill and the conversion of industrial land to residential uses. Issues such as a clearly defined and enforced metropolitan urban growth boundary, and the existing high costs and uncertainty associated with inner-city land development and conversion, also need to be addressed (refer PricewaterhouseCoopers 2014).

Urban renewal represents significant change, and requires vision, inspiration and a joint commitment from government, the private sector and community. While the outcomes sought might vary – for example, affordable housing, transitioning underutilised areas into community spaces or generating employment and economic activity through commercial development – it is important that all opportunities are explored and a shared vision is established.

The Macquarie Point area represents a significant, live example of urban renewal in progress. As with similar models elsewhere, the Macquarie Point renewal project involves converting land, previously used for heavy industry (past uses include an industrial quarry, timber and slaughter yards, a gasworks and rail terminal), to a mix of land uses that better match and reflect contemporary economic development and amenity objectives. The site will be redeveloped as a vibrant and active area with a mix of uses that connect and complement adjacent areas in Sullivans Cove. In this context, there are clear benefits in linking this site with the northern suburbs, including MONA. The opportunity to further link the precinct to the city via light rail is also attractive.

In developing this site, the Macquarie Point Development Authority has demonstrated that while there needs to be a catalyst and project champion, the design, development and delivery of a project must involve interested stakeholders, many of which will hold differing views and perspectives.

In pursuing urban renewal, local governments have a key role in articulating and representing the needs of local communities. Local government also has responsibility for the regulatory frameworks that inform land use planning and development decisions. Land use planning frameworks are key to facilitating efficient and appropriate urban renewal. In relation to a rapid transit system, these frameworks should support increased residential densities that allow the cost of development to be spread across a larger saleable area. Streamlined approval processes across all regulatory entities, would also deliver greater certainty to developers and increase the attractiveness of investment.

The State Government has responsibility for the provision of public transport and, more broadly, in providing a framework that supports economic and social growth. The Commonwealth Government has a role in funding large-scale infrastructure projects, where projects meet relevant strategic objectives and evaluation guidelines.

The private sector brings funding, innovation and design, capacity and expertise to the delivery of a project. The value proposition for private sector involvement in urban renewal, must include an ability to deliver a financially viable project with the capacity to generate revenue at an acceptable rate of return. A development that is tied to the delivery of a key piece of infrastructure, such as a new rapid transit system, provides greater certainty to investors in considering their potential commercial returns.

Joint responsibility in planning, delivery and operation

The development, delivery and operation of a successful, well-patronised light rail service requires a coordinated approach. The submission of a transport project to the Australian Government for funding is only one part of a broader range of project considerations and activities.

Local government plays a significant role in land use planning, and has the ability to reshape areas through re-zoning and other planning scheme provisions. As the key decision makers on land use, any form of city shaping and urban renewal must be undertaken in partnership with Local Government. Land availability, the capacity to amend planning zones and schemes to allow for urban transformation and the development of traffic and parking policies that can complement a transit service rather than working in competition with it are key areas where Local Government can play a vital role.

The predominance of land that could be contemplated for change of use or rezoning sits within the Glenorchy municipal area, although there could be some opportunities within the Hobart municipal area.

In addition to land re-zoning, there is significant work to be undertaken in identifying opportunities and capacity for uplift. Park and ride facilities would need to be explored, and a more detailed consideration of where stations would logically be located in order to maximise urban renewal and attractiveness to the private sector.

The private sector has the capacity to invest in projects that would benefit from enhanced demand and through-traffic, including high-density housing projects, commercial opportunities and retail space. A high population density supports increased demand for services, and supports commercial activities. At station locations, there is an opportunity to invest in activities and businesses that provide commuters with easy access to requirements at the beginning and end of the day.

The need to strategically plan for the development of land adjacent to the rail corridor, preferably prior to the delivery of any light rail service, has been identified as a key issue in past evaluations.

Impact on existing transport modes

Passenger transport in Greater Hobart is dominated by car-based travel, with the percentage of people driving to work higher than the national average. Use of public transport is low compared to other states, however the percentage of Tasmanians who walk or cycle to work is higher than the national average.

The high use of cars reflects factors such as Hobart's comparatively short travel distances, minimal congestion, cost and availability of car parking and general convenience.

A small number of key arterial roads provide access to and through central Hobart. While congestion on these key arterials is confined to short periods during morning and afternoon peaks (particularly during school terms), these peaks are comparatively severe when compared to general traffic flows throughout the day.

The Brooker Highway is the key arterial link through Hobart's northern suburbs. It is an important freight and passenger route, connecting to major industrial, employment and residential areas. Main Road is a key passenger and public transport link between Glenorchy and Hobart, and currently supports a high-frequency bus service. The ability of a light rail service to complement these existing road corridors, and potentially reduce traffic volumes over time, has been raised.

The cost and availability of car parking in central Hobart and all major commercial and employment centres is a key factor in the high use of cars for commuting. Existing car parking arrangements - which include relatively inexpensive all-day commuter parking and free car-parking in most of Hobart's inner suburbs - benefit commuters, and act as a disincentive to switch to light rail. It would be important for these car-parking policies to be reviewed as part of developing a light rail service. Hobart City Council also has a role to play in traffic management for any route into the city centre, as well as any agreement to include rail as part of a central public transport transit centre.

It is acknowledged that this issue is not limited to traffic from the northern suburbs. Infrastructure Tasmania will undertake broader work to assess traffic flows into the Hobart City catchment and consider options and solutions to ease congestion and support more efficient traffic flows. Parking policies along with a range of other non-infrastructure and infrastructure measures will be considered as part of this work.

From a public transport perspective, past evaluations have identified enhancements and changes to existing Metro bus services as an alternative way to meet passenger transport needs through the northern suburbs. Improving bus services, including providing high frequency services on key routes, has also been identified as a key strategy to build a stronger public transport culture in Hobart.

Past analysis has indicated that a light rail service would rely on a network of feeder bus services, with a high degree of modal integration essential to the success of a light rail service in the northern suburbs. Any competition for patronage between the two modes would need to be minimised. Ensuring timetable, route and ticketing integration, and the provision of good physical linkages between rail and bus services, are key issues to be addressed

There has been only limited consideration of the measures that might be taken to integrate these two modes and minimise modal competition. A model based on common ownership of both light rail and buses, under a single transit authority, has some potential to strengthen integration as well as delivering operational synergies. For example, a dedicated light rail service, linked to a feeder bus network under a single ticketing regime could provide increased efficiency to passengers, and scale benefits in terms of bus reallocation and utilisation of assets.

However, Metro has no experience in the light rail business and is unlikely to bring the knowledge, efficiency and entrepreneurship that an experienced operator of such a service would generate. On this basis, Infrastructure Tasmania concluded that, where possible, maximum integration should be an objective to provide a seamless experience for passengers. Common or integrated ticketing and complementary rather than competing services

are likely to provide benefits to operators and passengers alike. Metro's recent implementation of its **Hobart Network Review** demonstrates that the provision of efficient services where there is high demand ensures maximum efficiency and higher levels of passenger satisfaction.

Since initial consultancies were undertaken, a dedicated ferry servicing MONA has been introduced. The ferry departs the Brooke Street Pier, and provides a return transit for passengers visiting the museum. Around 500,000 passengers per year use the service. A privately operated service, it is likely that there would be some consternation at a publicly funded service in direct competition with the ferry. In a similar way to which the train service to Sydney airport operates, consideration of a fare structure that impacts the competing MONA destination could be contemplated but this would need detailed consideration in terms of non-MONA passengers and perceptions of fare gouging. Nonetheless, it is likely to be raised as a key concern by the owners and operators of the ferry service.

Funding light rail

Urban renewal and public transport systems are inextricably linked. The common obstacle facing delivery of both is funding.

Governments at all levels are struggling to meet the costs associated with maintaining ageing infrastructure assets, while also funding new infrastructure to meet growing demand. More recently the private sector has taken a greater role in funding urban renewal and public transport projects, using new and innovative funding sources.

A significant advantage to any light rail system in Hobart is the existence of a dedicated corridor. This corridor avoids major land acquisition, usually one of the most significant costs associated with developing a light rail system. While minor land acquisitions may be required to support passing loops or stations, for the most part the corridor is adequate to support a light rail service.

The costs associated with upgrading the track to support light rail, together with the purchase of new rolling stock and development of rail stations, were quantified and considered in past evaluations.

Previous evaluations of light rail relied on a fully government funded project, with the majority of funding to be sought from the Australian Government. The Tasmanian Government would most likely be responsible for operating costs, maintenance of the track and replacement of rolling stock. While this funding model almost assumes that a private operator is unlikely to participate, the public-private partnerships in place in other jurisdictions should be considered as a possible model.

Shared Contributions

In other jurisdictions there have been a number of alternative funding scenarios. The Gold Coast City Council has pledged \$55 million towards the capital cost of the next stage of the Gold Coast light rail, having contributed some \$120 million of the \$0.5 billion cost to build the first stage. The Federal Government has committed \$95 million to the 7.3 km second stage which will have an 11 minute running time, three new stations and 1400 spaces at two park and ride facilities. It will have four new trams and be capable of carrying 3000 passengers per hour.

Stage I has a system length of 13 kilometres and has 16 stations. Delivered as a public private partnership between the Queensland Government, the City of Gold Coast, the Commonwealth Government and GoldLinkQ.

Establishing a Parking Levy Regime

Parking levies exist in a number of capital cities around the country with much of the proceeds directed to the provision of public transport. The levies are generally supported by policies that in the main involve the preservation of air quality, reduction of traffic congestion, improvement of pedestrian safety, freeing up short-term shopper parking and creating both an economically and environmentally healthy city environment. These levies generally apply to non-residential parking bays which are licensed with fees payable where liable. In Perth the free city bus service (CAT bus network) was funded by such a levy and a series of public transport initiatives across metropolitan Sydney have been funded from a similar source. A number of light rail proposals around the country have pointed to this source of revenue as an opportunity for funding contribution.

In a Tasmanian context and specifically as it relates to a light rail project, careful consideration would need to be given to the boundaries and capture of any such levy. Hobart has a higher commuter destination with significant fee paid parking. No analysis has been undertaken regarding the extent or level of revenue that could be generated from this source, but it is highlighted as a model that is currently used across Australia.

Value Capture

There are indirect benefits of infrastructure projects which in economic terms are known as positive externalities. They include increased tax revenues received by governments and financial windfalls received by property owners and businesses in the vicinity of a transport project. The increased revenue to governments is often marginal when compared to the windfall property values but there is no direct mechanism to capture those indirect benefits to offset the cost of the infrastructure or other costs associated with the development.

Using rising land value to fund a public transport project is known as value capture. It does not generally seek to fund the entire project but can assist in easing the financial burden on government funding. It has operated in the USA since the 1960's where it was first introduced in California. Rather than waiting for benefits to accrue through various taxation regimes, value capture applies a "beneficiaries pay" principle. The basis of the concept is that revenues accruing to beneficial land holders would not otherwise have existed without the public investment.

Advocates for the Hobart light rail project have often referred to the benefits that accrue to the economy and the community through the uplift of property values that occur as a direct result of the provision of such infrastructure. There is a strong body of evidence to suggest that the provision of transit infrastructure increases the value of properties directly adjacent to the corridor but particularly within 500 metres radius of a station. While enhanced property values generally translate to increased revenues for Local Government through rates and the State Government via land tax, the reality is that it is the property owner that benefits most through the windfall capital gain achieved as a direct result of the infrastructure provision.

An argument could be presented to support the identification of a benefit district where properties in particular zones where such windfalls occur could be charged a levy beyond normal rates and land tax. This betterment levy could reflect the increase in land value meaning that those who benefit the most pay the most. Revenue from this source could be hypothecated to pay down debt used to fund the rail operation or as a contribution to operating costs.

Recommendations

Infrastructure Tasmania's recommendations in relation to a future light rail service through the northern suburbs are provided in two parts -

1. Completion of outstanding work in relation to the evaluation of a light rail service (short-term)
2. Future use of the rail corridor

1. Completion of outstanding work in evaluating a light rail service

Light rail relies on supportive land use measures. In the context of Greater Hobart, it is not clear that light rail will, of itself, facilitate land use change at a pace and in a manner sufficient to ensure a sustainable light rail service.

It is appropriate that additional work is undertaken to better understand how land use adjacent to the corridor can be shaped to support a light rail service. As a part of any future development, the level and nature of interest from the private sector in rail-related investment along the corridor is also critical.

As a key determinant of private car use, car parking policies in the metropolitan area also need to be reviewed.

While land use and carparking are primarily local government issues, it is important that any further work undertaken on a light rail system is based on a collaborative approach between local government and Infrastructure Tasmania. Infrastructure Tasmania should continue to have oversight and coordination responsibility for the ongoing evaluation of a light rail service.

The recommendations are -

- 1.1 Infrastructure Tasmania works with the Glenorchy and Hobart City Councils to develop a detailed understanding of opportunities for land use planning and rezoning in relation to increased residential and commercial density adjacent to the rail corridor. This work should include identification of all potential locations for high-density residential development, the density target and ultimate dwelling yield. The investigation should identify sites within close proximity to potential light rail stations and required conversion of industrial land to residential or mixed use. Councils should also identify supportive planning scheme provisions that facilitate ease of re-zoning and future development.
- 1.2 Working with Infrastructure Tasmania, Hobart and Glenorchy City Councils engage directly with the private sector to gauge interest in residential and commercial development adjacent to the rail corridor, including the nature and location of transit oriented developments. This work should also identify appropriate mechanisms to progress private sector investment.

Subject to positive outcomes arising from the above, the following actions, should be undertaken -

- 1.3 Model the impacts of traffic flow disruptions associated with a light rail service, focusing on key local roads between Albert Road and Elwick Road.
- 1.4 Further examination of the appropriate location and design of supporting park and ride facilities.

- 1.5 Glenorchy and Hobart City Councils jointly review the impact of their existing car parking policies on public transport outcomes, including a light rail service.
- 1.6 Infrastructure Tasmania re-examines the overall cost of a light rail service based on the variables and inputs arising from the various components of work detailed above and make recommendations on an overall model and process to progress as a project for funding.

2. Future use of the rail corridor

The existing rail corridor is a strategic passenger transport route for Greater Hobart. The cost of reclaiming the corridor, if lost, or developing a new corridor, is high.

Future use of the corridor for freight services is unlikely, with a shift in heavy freight activity to the Brighton Hub, and access and storage limitations at Macquarie Point and Hobart Port. There are also limited opportunities for any new freight tasks south of the Bridgewater Bridge, given the location of major industries in relation to the existing rail corridor, and the availability of road transport to cost-effectively move freight into and out of the Moonah-Glenorchy industrial area.

It is not intended to identify or progress competing options to light rail at this stage but in the event that a suitable case did not exist for such a service, then there would be the possibility at a point in the future to contemplate alternative transit solutions. Cities across Australia and in other countries are and have implemented a series of transit options that may ultimately benefit the greater Hobart area.

Regardless of the eventual solution, it is essential that the existing corridor be maintained as a transit corridor for light rail or any alternative transit use that might be identified in the future.

- 2.1 It is recommended that the existing rail corridor from Macquarie Point to Granton is retained, and that the use of this corridor for light rail, and other potential public or passenger transport uses over the long-term, is fully explored.

Appendix I. Final evaluation reports examining a light rail service in Hobart's northern suburbs

2009 - Parsons Brinckerhoff

(This consultancy supported development of the *Tasmanian Urban Passenger Transport Framework 2010*. Light rail was considered as part of a package of final recommendations. A rail alignment to UTAS in Sandy Bay was considered at a high level only).

Review of Passenger Travel Demand Measures, Greater Hobart. Final Stage 1 Report. April

Review of Passenger Travel Demand Measures, Greater Hobart. Final Stage 2 Report. April

Review of Passenger Travel Demand Measures, Greater Hobart. Final Stage 3 Report. June

2011 - ACIL Tasman

Hobart to Northern Suburbs Light Rail Business Case. A report providing a summary of the findings of all three stages of the project. August

Hobart to Northern Suburbs Light Rail Business Case. A report detailing the findings of the third stage of the project. July

2012 - AECOM

Hobart northern suburbs light rail. Business case peer review. December

2013 - ACIL Tasman

Stage 1 Light rail business case. Hobart to Glenorchy. May

2014

Wider economic benefits and funding options. Final report. February

Riverline - Hobart light rail preliminary plan. March

Riverline - Hobart light rail strategic assessment. March



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