AUDITOR-GENERAL'S REPORT

PERFORMANCE AUDIT

Liverpool to Parramatta Bus Transitway

The Legislative Assembly
Parliament House
SYDNEY NSW 2000

The Legislative Council
Parliament House
SYDNEY NSW 2000

In accordance with section 38E of the *Public Finance and Audit Act 1983*, I present a report titled **Liverpool to Parramatta Bus Transitways.**

R J Sendt
Auditor-General

Sydney
December 2005

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Foreword

Several of my recent audits have identified a need to improve our public transport system – both for the benefit of travellers and to assist in achieving better air quality.

Bus Transitways can provide a good public transport solution for lower density population areas, potentially at a relatively low capital cost. This audit examines the transitway running between Liverpool and Parramatta, the first of several planned for Sydney. This audit should contribute to a better understanding of the lessons learnt from this first project, and so to future transitways providing better value for money.

But this audit also raises broader issues.

It highlights the importance of accurately projecting the total cost of major infrastructure projects before governments lock in their decisions. It also highlights the need for sound decision-making processes when government agencies compete with the private sector. The principles and recommendations flowing from these issues are ones I would draw to the attention of all agencies, and to the Government.

Bob Sendt
Auditor-General

December 2005

Executive summary

Executive summary

Bus transitways are intended to improve public transport outcomes in selected areas.

The Liverpool to Parramatta Bus Transitway (LPT) is public infrastructure, built and owned by the State Government, and is the first of a planned network of rapid bus transitways for Western Sydney.

The LPT was first announced in 1998, and was opened in February 2003. Competitive bidding was sought to run the bus services on the transitway between Liverpool and Parramatta, and the State Transit Authority (STA) won the eight-year contract. STA operates the LPT through a subsidiary company, Western Sydney Buses (WSB).

The objective of this audit was to examine whether the LPT is being used as originally envisaged, and to determine factors for success and issues requiring careful management in planning future transitways.

The audit focuses on two distinct aspects: the role of government agencies (particularly the Ministry of Transport [MoT] and the Roads and Traffic Authority [RTA]) in planning and building the transitway and the stations, and the STA's operation of buses on the LPT.

Audit opinion

The LPT project is promising, but results to date are mixed.

On the positive side, the LPT project has already demonstrated the potential of transitways and helped shape the new bus contracts currently being implemented. Lessons learnt from this transitway have also been applied to the North-West Transitway.

WSB has achieved a high level of customer satisfaction and strong growth in patronage. Operating losses are reducing, and the chances of the LPT becoming a profitable route in the medium term are promising. The potential for synergies with other planned transitways, and extensions of the current route to link with new growth areas, is also high.

However there were three particular aspects of the initiating and planning process that were not well handled.

First, governments must have sound information in order to decide which projects they will allocate funds to.

The cost of the LPT to taxpayers grew substantially from the time it was first announced in 1998 - from $98 million to a final cost around $346 million. There were both major changes to the scope of the LPT project after its first announcement and large increases in the cost of the project at various stages.

If the Government had better cost estimates available to it and a clearer understanding of the scope of the project at the time a decision was required, it may well have decided that there were other projects that gave greater public transport (or other) benefits for the money involved.

Second, despite the LPT being a significant public investment, not all the benefits it was intended to achieve were defined in a measurable way. Hence it will be difficult to evaluate its benefits against its costs and assess whether the project provides good value for money.

Finally, the STA process in bidding for the bus service contract had two major shortcomings:

- Senior STA management submitted the bid (and arguably won the contract) on the basis of needing no government subsidy over the contract period, whereas all other bidders required a subsidy. The 'no subsidy' bid was based, in turn, on patronage assumptions that were some 65% higher than the STA's own (admittedly conservative) research suggested. The STA has been unable to find any documentation to support this higher patronage assumption.

  This lack of documentation represents very poor management. More importantly, it leaves open the inferences that STA management used whatever patronage assumptions were needed to support a 'no subsidy' bid, and that STA management had not properly advised the STA Board of the bid assumptions and their inherent risks.

- As the largest provider of bus services, the STA had a far greater ability than other bidders to absorb any losses that arose from LPT services. The lack of proper documentation about the bid decision-making process exposes the STA to accusation that it used its market power to win the contract in a way that the other proponents could not match.

Summary of recommendations

Commit to build projects only after the feasibility study

We recommend that:

- the Minister for Roads, the Minister for Transport and the Minister for Planning only announce the specific cost and timing of major transport projects once reasonably firm information is available, such as the results of a feasibility study (page 23)
- the Budget Committee of Cabinet initially fund only feasibility studies of major projects, as a basis for subsequent decisions whether to proceed or not (page 23).

Manage project costs better

We recommend that the Roads and Traffic Authority (RTA):

- improve consultation with relevant stakeholders at key stages of the project development (page 26)
- ensure its revised methodology for cost estimation, project management and risk assessment is applied to all major projects (page 28)
- prepare a detailed cost estimate for each project after the conditions of approval are received and before detailed design and construction work (page 28).

Reduce cost of building transitways and other transport projects

We recommend that:

- the Ministry of Transport (MoT) seek to amend the legislation governing light rail requirements for transitways (page 24)
- the RTA develop a proposal for a fairer land acquisition process for transport corridors, and submit this proposal for consideration by the Minister for Commerce (page 30).

Improve the transparency of commercial decisions

We recommend that:

- the STA document and retain all analyses behind major bidding decisions (page 36)
- the STA Board ensures it has timely and full information before deciding on major bidding decisions (page 36)
- MoT clarify the future role of WSB in the LPT operations (page 57).

Maximise the use and potential of transitways

We recommend that:

- The RTA and the MoT, in consultation with the Department of Planning (DoP), review ways to reduce travel time on the LPT (page 54)
- MoT ensure that transitway services integrate with other bus services from commencement of operations (page 39)
- MoT integrate local and trunk services as the new contract for the Region which encompasses the LPT is finalised (page 57)
- MoT examine whether strategic bus corridors could be built up to transitway-style corridors over time (page 58)
- DoP subject all current proposals for transitways to integrated review and detailed planning (page 58).

Evaluate the benefits of transitways

We recommend that:

- the MoT and RTA conduct a post evaluation of the LPT project outcomes after five years of operations (page 56)
- the NSW Treasury make post evaluation of all major transport projects a condition of funding and approval, and revise their guidelines to explicitly require such post evaluation (page 56).

Audit findings

Chapter 2 How much did the LPT cost taxpayers?

The 31 km LPT project cost taxpayers a total of $346 million to build when it was originally expected to cost $98 million for a 20 km route. We found the contribution of each stage of the project development to the $248 million cost increase was as follows:

- $100 million (40%) at the feasibility study stage – the RTA reached this estimate after establishing the full scope of the project and land acquisition costs. These had not been determined when the announcement of the commitment to build the project was made
- $60 million (24%) at the environmental impact assessment and determination stage – a court challenge instigated by an existing bus operator delayed this process 12 months. Most of this cost increase, about $47 million, resulted from other modifications to the proposal reflecting early feedback from stakeholders to the Environmental Impact Statement (EIS). The extent of modifications required generally reflected an inadequate understanding of stakeholder requirements
- $88 million (36%) at the construction and commissioning stage – the delay due to the court challenge and getting approval of the EIS left only 12 months for the construction of 16 km of the 20 km dedicated section of the LPT to meet the 2003 deadline. A detailed review of the cost estimate of the project was not done until about a year after construction started. We found no evidence that the RTA had assessed the option of extending the deadline or staging the project before deciding to meet the deadline.

Chapter 3 Was the STA bid based on a sound business case?

We found that the ability of potential operators to fully develop their business cases was hampered with less than two months given for preparing bids for the LPT trunk service.

The STA bid projected an average 2.8 million passenger trips a year on the LPT. It anticipated making losses in the first two years, breaking even during year three and generating positive shareholder value for the term of the contract. The STA was the only bidder that did not anticipate requiring government subsidy to run services.

In preparing to bid for the trunk service, an internal STA paper put forward three estimates of patronage and recommended the moderate estimate of 1.7 million passenger trips a year. The high estimate was a figure of 4.3 million projected from the MoT tender documents.

We found that the decision to go higher than the recommended 1.7 million figure was justified, as that level was reached within the first two and a half years of operation. However, the scale of the increase from the patronage assumed in the STA bid, being 65% above the moderate estimate, in our view warranted substantiation, not just judgment. Without this, it was not possible for us to review the business case thoroughly.

The figures chosen made the difference between the STA bid projecting a profit or loss, and hence whether government support would be needed. For such an important variable to be changed based on judgment alone was not appropriate in our view. STA do not agree. They contend that their judgment was reasonable, and that patronage estimates are notoriously difficult. We do not dispute this, but we believe that stronger substantiation would have been prudent.

Chapter 4 How well has WSB operated the LPT services?

WSB, as operator of the transitway, reports regularly to the Ministry of Transport on performance against standards set in the contract. We found performance against key performance indicators was as follows:

- customer satisfaction – WSB has achieved a high level of customer satisfaction and has had a low level of complaints about staff and services
- patronage levels – patronage growth is strong, and outperforming any other Sydney bus route run by the STA. However, it still falls well short of the patronage projections in the bid. Cumulatively, actual patronage will be about three and a half million behind the projections in the bid by February 2006
- financial performance - WSB has so far accumulated losses of about $9 million, which STA cross subsidises. STA has not requested additional government funding. While the losses are reducing rapidly, they are unlikely to be recovered over the contract period. Such losses are not unreasonable in the early stage of establishing a bus route, but they remain significantly different from the bid projections
- punctuality and reliability of services - technology problems have prevented cost-effective monitoring of service reliability and punctuality as originally envisaged, although alternative methods were put in place. This and other issues have required WSB to negotiate several major contract variations, most of which have benefited passengers.

Chapter 5
Is the LPT being used to its full potential and is it delivering intended benefits?

Opportunities to stimulate further patronage growth and hence maximise the value of the LPT infrastructure are yet to be fully explored. We found that:

- integration of bus services - the LPT has not been fully integrated into the public transport network largely because the LPT contract was introduced before the new bus reforms, which facilitate such integration, had been contemplated. To date, there has been virtually no non-trunk bus services using the LPT
- potential to reduce travel time – while the operations appear to have reached the best achievable travel times (around 50 minutes off-peak, and up to 67 minutes during peak), further reductions are possible with additional bus priority measures at major intersections, and a reduction in the time-consuming cash transactions on-board buses
- land use changes - redevelopment along the LPT has started in some significant ways. In the longer term, other measures will be required to ensure the sustained use and viability of the LPT as a public transport service
- increased marketing of the LPT bus services - WSB and RTA have undertaken specific marketing activities that they have considered cost-effective to promote use of the LPT, but this could be reviewed.

The LPT was a significant public investment. Whilst it is perhaps too early to evaluate the benefits against those costs, we found that many of the benefits predicted in the planning stage are not defined in any measurable way, nor tracked or evaluated. Currently there is no mechanism to link funding to project performance for transport projects, and evaluations of completed transport projects are not typically conducted.

We also found that the LPT contract helped shape the development of the provisions of the new bus contracts currently being implemented as part of the Government's bus reforms. However, the future of this contract and the involvement of the STA/WSB in the operations of the LPT are still undecided.

Responses from agencies

Refer to Appendix 1 for responses from:

- State Transit Authority
- Roads and Traffic Authority
- Ministry of Transport
- Department of Planning
- NSW Treasury

1. Introduction

LPT the first transitway for Western Sydney

The Liverpool to Parramatta Transitway (LPT) is the first of a planned network of rapid bus transitways for Western Sydney. A common misconception is that it is for people wanting to travel from Liverpool to Parramatta, or vice versa. If that were your journey, you would take the Cumberland (heavy rail) train line. The LPT provides links to a series of intermediate destinations, including two TAFE colleges, a hospital, large shopping centres at Bonnyrigg and Prairiewood, Sydney's largest blue-collar employment zone at Smithfield/Wetherill Park, and the major hubs of Liverpool and Parramatta. It opens up a range of opportunities for people travelling further to connect to the rail network at these ends.

1.1 What is a transitway?

A transitway is a regional medium-capacity public transport system that either provides high quality, frequent and fast travel between centres, or serves areas remote from the regional rail network[1].

Parts of a transitway may operate along purpose-built exclusive roadway, with other parts having priority on existing roads (bus lanes, for example). They can operate as a rapid busway system, with the chance to convert to light rail (trams) if the population density and demand warrant it.

Transitways suited to low density areas

A bus-based transitway such as the LPT is generally suited to low-density urban areas and can maximise public transport use if it is integrated with other public transport such as trains.

1.2 Characteristics of the Liverpool to Parramatta Transitway

LPT owned by government

The Liverpool to Parramatta Rapid Bus Transitway (LPT) is public infrastructure, built and owned by the State Government. The partner agencies are the Roads and Traffic Authority (RTA) and the Ministry of Transport (MoT)[2]. These organisations shared in the construction costs on an eighty-five/fifteen per cent basis respectively. The purpose of the infrastructure is to provide quality public transport, initially by buses. The newly built sections of dedicated roadway are built to a standard that could be used by light rail (trams) if the demand increased enough in the future.

The LPT provides effective public transport link across the region

The 31 km LPT provides North-South public transport services, connecting the centres of Liverpool and Parramatta and suburbs along the route (via Hoxton Park) to major employment, education and recreation centres. Traditionally, the only public transport in the growing suburbs to the west of the heavy rail line through Liverpool, Cabramatta and Fairfield has been East-West bus services going to the rail line. The LPT provides the first effective public transport link ***across*** the region.

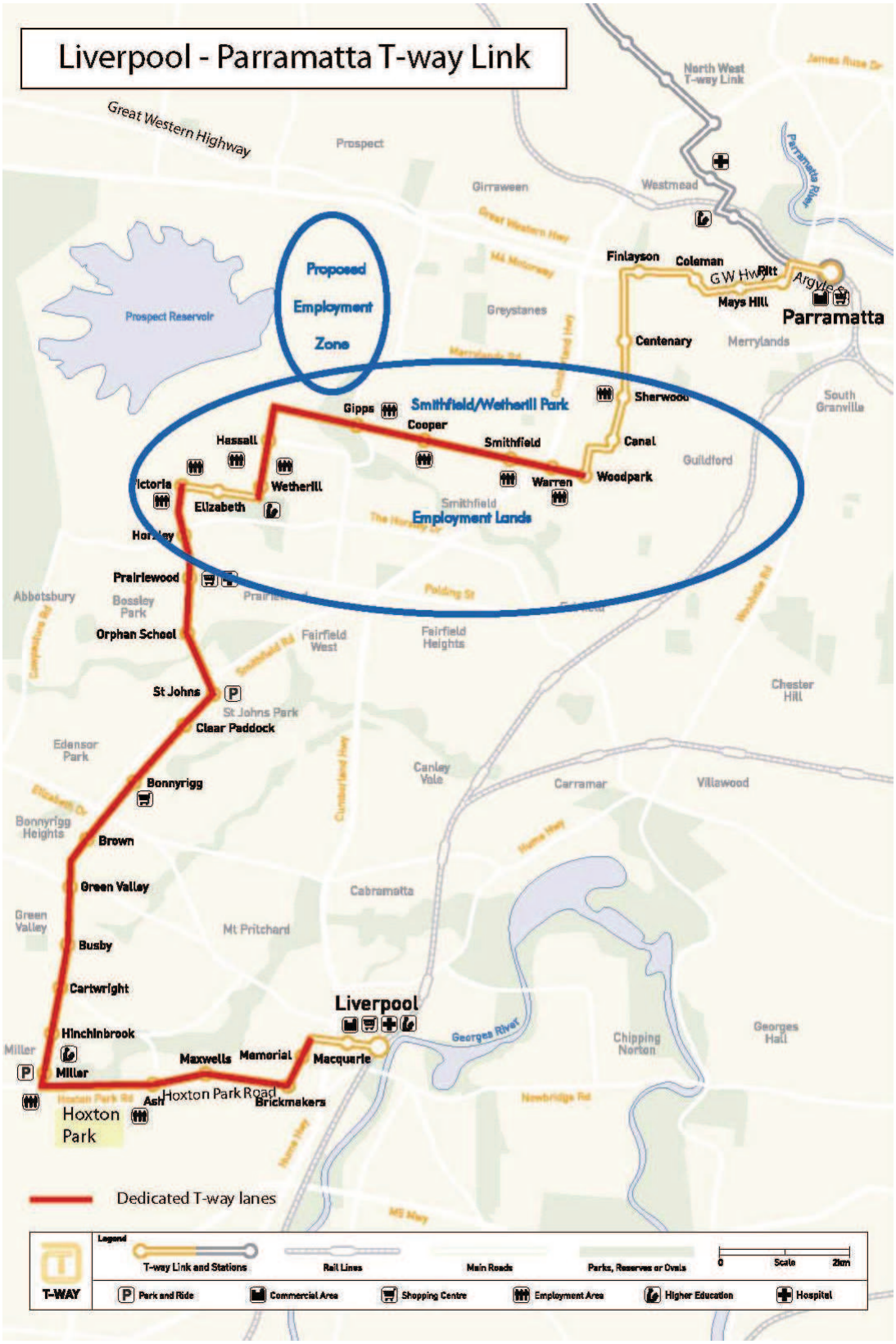
Parts of the LPT are dedicated to buses and parts use bus lanes

It includes 20 km of *new* bus-only roadway (dedicated busway) with one lane in each direction, and 11 km of priority lanes for buses along *existing* or widened streets. There are 33 stations on each side of the transitway, plus the Liverpool and Parramatta termini. See Exhibit 1.1, Map of the LPT Route.

[1] Overview Report published in August 2001.

[2] At earlier stages, this agency was called the Department of Transport and Transport NSW. For convenience, we will refer to it as the Ministry of Transport or MoT unless quoting a document naming it differently. Similarly, the Department of Planning (DoP) was until recently part of the Department of Infrastructure, Planning and Natural Resources.

Exhibit 1.1 Map of the Liverpool to Parramatta Transitway Route



1.3 How did the LPT concept originate?

Proposals for public transport in Western Sydney go back years

The proposal to develop a public transport corridor in South-Western Sydney was first considered some 30 years ago in the 1975 Parramatta Region Transport Study. The reservation of the Hoxton Park-Parramatta-West Baulkham Hills transport corridor was confirmed with the gazetting of the *Sydney Regional Environmental Plan No 18: Public Transport Corridors* (SREP 18) for light rail, conventional bus or new technology systems. In 1997, the MoT began investigating public transport options for low-density urban areas. Bus based systems were the most attractive and appeared suitable for the needs of Western Sydney.

Government committed to building the LPT in 1998

In May 1998, the then NSW Minister for Transport and Minister for Roads announced the Government's commitment to build a 20 km transitway in South-Western Sydney between Liverpool and Parramatta via Hoxton Park. This included extension of the Hoxton Park to Parramatta route to Liverpool, and creating priority conditions for transitway buses where the transitway intersects with major roads. The announcement gave a cost estimate of $98 million, which excluded property acquisition and planning costs. The RTA then undertook further studies on the route including the connection to Liverpool and its diversion through the Smithfield Wetherill Park employment zone.

LPT project included in transport plan

The LPT project was included as a key project in the NSW Government's integrated transport plan, *Action for Transport 2010,* although its public announcement preceded the plan. The LPT was to be part of a proposed 90 km Western Sydney transitway network costing about $1 billion.

The LPT project aimed to improve transport infrastructure and services with the intention of providing more equitable access to employment, training and associated facilities; enhance the reliability and efficiency of road based public transport; and achieve reductions in private car use.

1.4 The roles of the government agencies

Many agencies had a role in LPT

The early planning for the LPT proposal was carried out by the then Department of Transport, which formed the basis for the original ministerial announcement. Functions relating to the planning and development of major transport infrastructure are not a responsibility of the current Ministry of Transport. The Department of Planning (DoP) was the assessment authority for the Environmental Impact Assessment process. The RTA and the MoT worked in partnership to develop, plan and deliver the infrastructure and to operate the completed project. RTA is responsible for the road and traffic infrastructure and MoT for the passenger related facilities (including stations) and for establishing bus operations on the LPT. The State Transit Authority (STA) later became involved after winning the bid to operate the trunk services on the LPT.

1.5 Who was to operate the LPT?

Operations of LPT put to public tender

The Government determined at the time to put the operations of the LPT to public tender. In September 2001, the MoT invited Expressions of Interest (EoI) from bus companies to run the trunk service for eight years just before the conditions of approval for the project were finalised in December 2001. Exhibit 3.3 on page 33 explains trunk and other services - basically the trunk service is buses operating only on the main route between Liverpool and Parramatta.

Integration of LPT with other bus services not possible then

At the time, five local bus companies operated services in the region traversed by the LPT. Each had an exclusive contract with the MoT for its region. This limited the chance of operating fully integrated services. The MoT decided that separate contracts for trunk and integrated services were unavoidable.

STA selected to run LPT service

The STA submitted a successful bid in November 2001, forming a subsidiary company, Western Sydney Buses, to run the service. It was awarded the eight-year contract in January 2002, only a month after the conditions of approval to the EIS were received. Construction of the LPT commenced early in 2002 and operation of bus services commenced in February 2003. See Exhibit 1.2.

Exhibit 1.2 Timeline of the LPT bus operations tender process

Date	Stage
September 2001	Invitation of Expressions of Interest (EoI)
November 2001	STA submits a bid
December 2001	EIS of project approved with 106 conditions of approval
January 2002	STA awarded the eight-year contract to operate bus services
Early 2002	LPT construction commenced
February 2003	LPT bus operations commenced

1.6 How did the Government bus reforms affect the LPT?

In July 2003, the then Minister for Transport Services appointed the Hon Barrie Unsworth to undertake a review of bus services in NSW and to make recommendations on improving them. Our Report No. 138, released in June 2005, reviewed progress on this bus reform process.

LPT operations preceded bus reforms

The Unsworth review was set up five months after bus operations on the LPT commenced. The difficulties with the LPT contributed to the impetus for the Government's bus reform program. Had the reforms been in place prior to the invitation of tenders for trunk bus operations, the five existing local bus operators would have been asked to form a consortium to run the region as a whole, including the LPT. This is what is happening with the North-West T-Way Network (NWTN), currently under construction. The NWTN should be able to operate as a more integrated network from the start. Having a separate operator for the LPT led to problems in cooperating with the existing bus companies to get their services to "fit in with" the new LPT services.

Review of bus services finalised in 2004

In March 2004, the Unsworth review found that the bus industry had inequitable levels of service and standards, different fares and no real service network. The review recommended in particular:

- progressive implementation of a network of strategic bus corridors to provide fast, frequent, direct and convenient links to regional centres
- strategic bus corridors be underpinned by larger contract regions for bus services in the Sydney metropolitan area (the "Sydney Contract Regions")
- the integration of the strategic corridor services with local bus services.

The Government accepted these recommendations in principle and proceeded to implement a reform program.

Implementation of bus reforms started in 2004

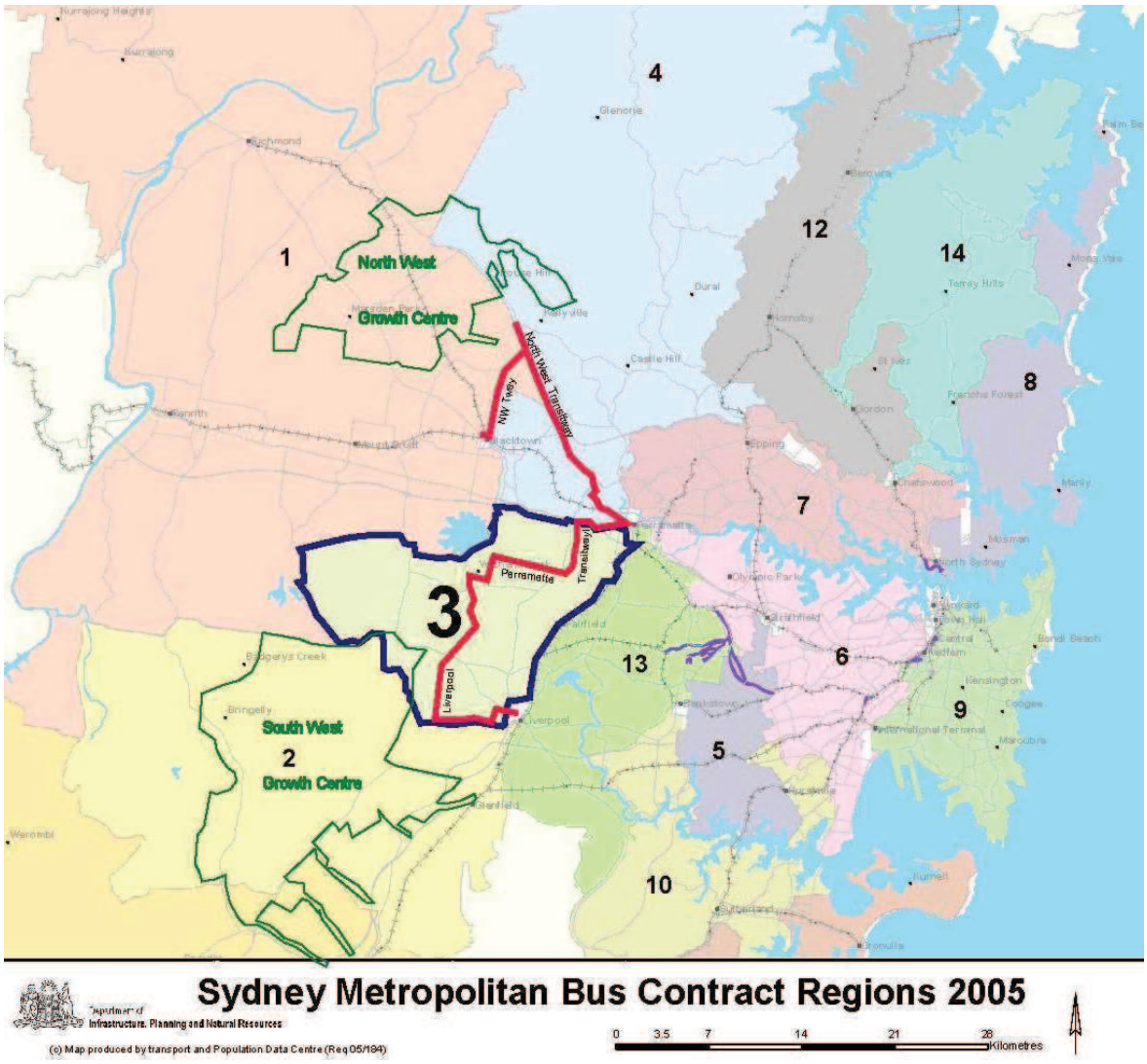
In July 2004, the *Passenger Transport Act 1990* was amended to overcome limitations in implementing these reforms. Amendments allowed the Ministry of Transport to terminate existing bus contracts and precluded the awarding of contracts in perpetuity. In line with these amendments, the Ministry:

- divided the Sydney metropolitan area into 15 Contract Regions, down from the previous 87
- sought expressions of interest for the provision of bus services in each region from the existing bus operators
- developed new bus contracts that include enforceable performance standards
- set a target date of 1 January 2005 to have all new contracts in place.

New contract for region encompassing LPT not decided until October 2005

The Ministry did not achieve this target date, with the contract for Region 3, which encompasses the LPT, the last of the metropolitan contracts signed in October 2005. Exhibit 1.3 shows all the new Contract Regions currently being implemented. The LPT runs through Region 3, and the NWTN will form part of the border between regions 1 and 4. The two growth areas are also included on this map.

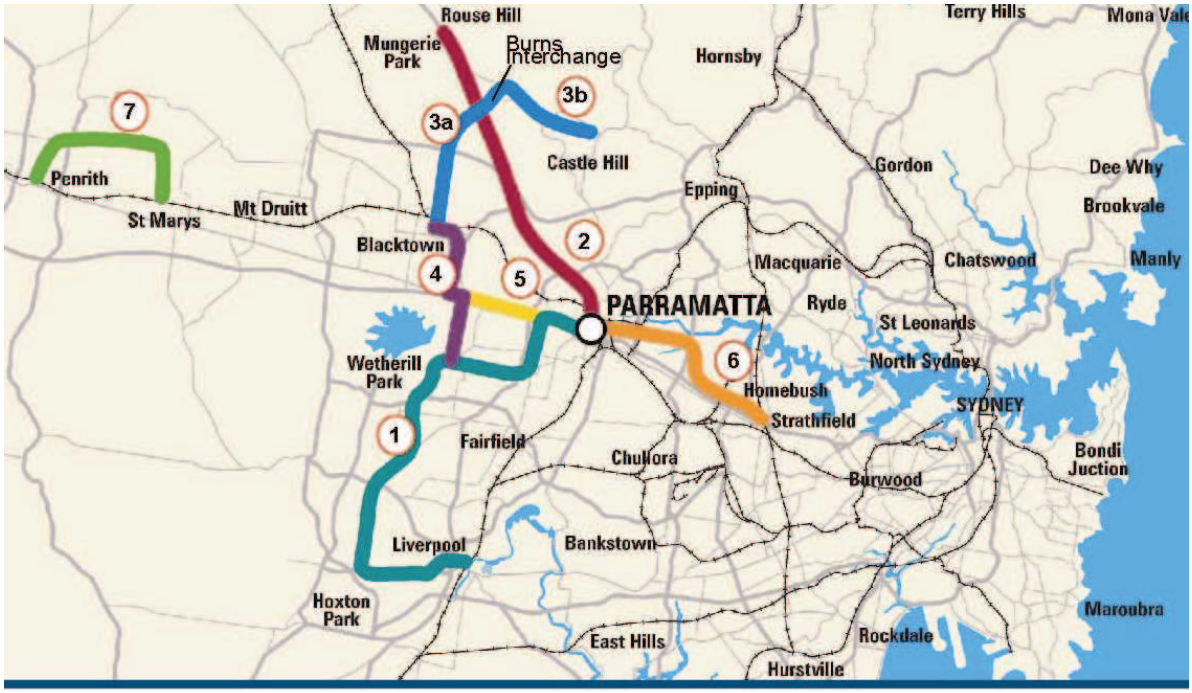
Exhibit 1.3 The 2005 Sydney Bus Contract Regions



1.7 What's happening with the other planned transitways?

The LPT was to be the first of seven transitways for Western Sydney.

Exhibit 1.4 The proposed network of Bus Transitways for Western Sydney



LINKS

1 Liverpool-Parramatta – completed and bus operations commissioned

2 Parramatta-Rouse Hill – under construction, bus operations due late 2006

3a Blacktown-Burns Interchange - under construction, bus operations due late 2007

3b Burns Interchange-Castle Hill – timing to be on the basis of need

4 Blacktown-Wetherill Park – timing depends on the rate of surrounding development

5 – Blacktown-Parramatta – possible integrated service to link with Liverpool-Parramatta T-way

6 Parramatta-Strathfield – present bus route to be progressively upgraded as surrounding development increases

7 Penrith-St Marys – under review due to Federal Government re-scoping of ADI development

Construction of two other transitways underway

The North-West T-Way Network is currently under construction. It runs on a radial route from Parramatta to the new Rouse Hill development area, with the first half of the Blacktown to Castle Hill transitway being constructed at the same time. The Parramatta-Rouse Hill link is due to open in 2006 and the Blacktown to Burns Interchange at Parklea link in 2007.

Future of other transitways not clear

There is no government commitment to build the other transitways. Some are on the back burner, as the density or pace of development in the areas served by the proposed routes has reduced. The Parramatta to Strathfield route now has a bus service on existing roads, which could be built up by carrying out low cost improvements for bus operations as an interim measure until passenger volumes justify construction of a purpose-built transitway. We note that most of the other transitway routes have been included as Strategic Bus Corridors in the Unsworth Review and could have their bus services upgraded in steps as part of this initiative.

LPT to link to new growth areas

In early 2005, the Government announced plans for two large new urban growth areas, in the North-West and South-West of Sydney. These are shown on Exhibit 1.3. Bus transitways are planned as the key to transport within these areas. The South-West growth area is expected to be linked to Liverpool and beyond by an extension of the LPT services.

Exhibit 1.5 The existing bus contract areas around the LPT, and the reserved corridors used for the LPT

1.8 Structure of this report

- Chapter 2 examines how much the LPT cost taxpayers
- Chapter 3 examines whether there was a sound business case underpinning the STA's bid to operate the LPT
- Chapter 4 examines how well the STA is operating services on the LPT
- Chapter 5 examines whether the LPT is being used to its full potential and is delivering the intended benefits.

2. How much did the Liverpool to Parramatta Transitway cost taxpayers?

At a glance

The 31 km LPT project cost taxpayers a total of $346 million to build when it was originally expected to cost $98 million for a 20 km route. There were both major changes to the scope of the LPT project after its first announcement and large increases in the cost of the project. This has implications for other funding commitments made and whether other equally good projects might have proceeded instead.

In this chapter we discuss the key factors that have contributed to overall cost increases and to increases at each stage of the project development.

2.1 The cost of the project

Initial project scope increased 10 km

The total cost of the LPT project increased from a 1998 strategic estimate of $98 million for a 20 km route at announcement to $345.7 million for a 31 km route at completion in 2005. Further examination of the project by the RTA in late 1998 gave an estimated cost of $198 million, which included property acquisition costs and extension to Liverpool and through the Smithfield/Wetherill Park employment zone. The LPT was included as part of a network of transitways planned for Western Sydney in *Action for Transport 2010* at this stage. The unit cost of the LPT project increased from $4.9 million per km to $11.2 million per km; unit costs more than doubled.

Project cost increased by $248 m

The $248 million increase in total cost resulted from several revisions of cost estimates at key stages to reflect the increased understanding of the project's requirements and scope.

Increase affects other projects

A number of factors contributed to this significant cost increase, which has implications for funding commitments made and whether other equally good projects might have proceeded instead.

LPT was a new type of infrastructure

The LPT project involved a new type of public infrastructure, as the first transitway built in NSW. It was also an interdisciplinary project that required a high level of coordination between different stakeholder groups.

With no similar transitway project to use as a benchmark, many new design and engineering issues were encountered. These related especially to bus operational requirements; unusual traffic signal and intersection layouts; provision for bus priority at intersections; high standard bus station structures; Intelligent Transport System (ITS) facilities; and large scale utility adjustment requirements given the length of the route. Lessons learnt from this project have set the standards for future transitways.

Lessons learnt

The LPT required a range of scoping and standards issues to be dealt with that have now set the framework for future transitways. Also, some data is now available on the relative costs of developing alternative forms of transitway infrastructure to assist in future project development.

We now discuss the key contributors to the cost increases overall and at stages of the project development. Not all are about it being a new type of project.

2.2 Cost drivers by stages of the project

Project cost increased at three key stages

The contribution of each stage of the project development to the $248 million cost increase was:

- $100 million (40%) at the feasibility study/overview report stage
- $60 million (24%) at the environmental impact assessment and determination stage
- $88 million (36%) at the construction and commissioning stage.

CPI and land major costs

We also note that CPI escalation over this period and land acquisition contributed about $91 million of the $346 million. This is examined further on page 30.

Exhibit 2.1 Cost increases shown by project development stage

Stage	Type of cost estimate	Cost estimate ($m)	Cost increase ($m)	% share of total increase	Unit cost ($m/km)
Pre-feasibility study Followed by announcement of project **(1998)**	Strategic cost estimate in March 1998 – for 20 km route, excluding planning, design and land acquisition costs	98			4.9
Feasibility study Overview report on public exhibition **(1998-99)**	RTA concept design estimate in late 1998 – for 31 km route between Liverpool and Parramatta including planning and land acquisition cost	198	100	40.4%	6.4
	Total for stage		**100**	**40.4%**	**6.4**
Environmental impact assessment and determination (2000-01)	Concept design estimate in Aug 2000 – as per Environmental Impact Statement (EIS)				
	Concept design estimate in Representation Report in August 2001 – includes requirements for light rail standards and changes in response to early feedback to EIS	258.1	60.1	24.3%	8.3
	Concept design estimate in Dec 2001 – following receipt of approval conditions				
	Total for stage		**60.1**	**24.3%**	**8.3**
Construction and commissioning (2002-05)	Detailed cost estimate in Nov-2002 – after construction started, reflecting conditions of approval and tendered prices for construction	315	56.9	23.0%	10.2
	Revised detailed cost estimate in Aug 2004 – for the balance of construction work almost a year and a half after the start of bus services	334.7	19.7	8.0%	10.8
	Final cost of project in May 2005	345.7	11	4.4%	11.2
	Total for stage		**87.6**	**35.4%**	**11.2**
	TOTAL	**345.7**	**247.7**	**100.0%**	**11.2**

2.2.1 Key cost drivers at the feasibility stage

Cost revised at feasibility stage reflecting increased scope

In May 1998, following preliminary studies carried out by the then Department of Transport[3], the then Minister for Roads and Minister for Transport announced the Government commitment to build a 20 km rapid bus transitway between Liverpool and Parramatta, giving a strategic estimate of construction of $98 million, or a unit cost of $5 million per kilometre. The announcement came only two months after a study had found that light rail for the existing corridor was not viable.

Decisions taken at announcement not studied

This was the first time that the final shape of the LPT started to come clear: two key decisions had been taken but had not been fully studied. They were that the LPT would be a rapid busway rather than light rail, and that it would be extended from Hoxton Park to Liverpool.

Commitment to build before scope determined

Following this announcement, the RTA undertook a detailed feasibility study that examined the viability of this expanded version of the original concept of the transitway route. As a result, the strategic cost estimate of $98 million was revised to $198 million to allow for scope changes (from a 20 km route to a 31 km one), and land acquisition and planning costs.

Early announcement of project cost potentially misleading

Announcing a single cost figure leads to assumptions of a level of estimate accuracy which cannot always be achieved in the very early stages of a project. This also raises public expectations that a project will go ahead, and will be delivered within a certain timeframe, and makes any value for money assessments difficult and potentially misleading.

We consider that announcing the project cost and committing to a completion deadline before knowing the full scope of work does a disservice to all concerned. Commitments to new projects should follow a more robust cost estimation and detailed concept design.

Early public knowledge of government plans important

We agree with the RTA that the public has the right to know of Government plans early at the project concept development stage. Delaying announcement of new projects until concept designs and costs are more robust would be unacceptable, as it would delay the involvement of the affected community and stakeholders to a later stage in the project. There is significant benefit gained through early involvement of the community in the development of a project. Innovative ideas can be brought forward and the community is more informed of what is planned in their area.

Giving sound information also important

This, however, has to be balanced with the need for sound information, so that:

- taxpayers can understand what they are getting for their money
- decision makers can assess the economic viability and relative value of a project, and whether to consider other options for the same project, or other projects instead.

Announcing broad cost range or no cost preferable

There would be benefits, as the RTA suggested, in making early announcements about new projects without associated estimated costs or with a much broader cost range. The cost range would better allow for the uncertainties still unresolved or unforeseen at the beginning of a project. In recognition of this issue, the 2005 State Budget Paper No 4 did not include estimated costs for RTA projects that are at the planning phase.

[3] Functions relating to the planning and development of major transport infrastructure are not a responsibility of the current Ministry of Transport.

Decisions to proceed based on feasibility study only even better

The inclusion of projects in the State Budget still raises expectations that they will go ahead. We agree with the present RTA practice of limiting commitments to projects in the State Budget to funding for feasibility studies of planned projects, and decisions to proceed based on the results of such studies.

Rise in cost of transport project not unique to NSW

We note that cost increases are not unique to this project. Previous performance audit reports commented on the cost escalation in other transport infrastructure projects, for example the M2 Motorway, the Eastern Distributor, and several road tunnels, including the M5 East.

Flyvbjerg *et al* found that cost escalation in road infrastructure projects is a global phenomenon: they cost an average of 20% more than approved. The LPT cost escalation is well beyond this benchmark.

From a study of cost escalation in transportation infrastructure projects:

The study was based on a sample of 258 transportation infrastructure projects in 20 nations worth US$90 billion. It found that the cost estimates used to decide whether important infrastructure should be built are highly, systematically and significantly misleading.

Large cost escalation translates into large financial risks with some social and economic implications.

Underestimating the costs of a given project leads to falsely high benefit-cost ratio for that project, which in turn leads to two problems:

- the project may be started despite the fact that it is not economically viable, or
- it may be started instead of another project that would have yielded higher returns had the actual cost of the two projects been known.

Both cases result in inefficient use of resources (unless the scope changes add to the overall project benefits) and therefore waste taxpayers' money.

Source: Bent Flyvbjerg, Mette K. Skamris Holm and Séren L. Buhl "How common and how large are cost overruns in transport infrastructure projects?", in Transport Reviews, 2003, Vol. 23, No. 1, 71-78

Recommendations

- Any announcement of the specific cost and timing of major transport infrastructure projects should only be made once reasonably firm information is available, such as the results of a feasibility study
- Commitment in the State Budget to projects that are at a concept planning stage should only be to fund the feasibility studies, which should be the basis for decisions to proceed with projects.

2.2.2 Key cost drivers at the environmental impact assessment stage

Cost increased $60m at environmental assessment stage

The cost of the project increased by $60 million, from $198 million to $258.1 million, at the environmental impact assessment and determination stage. Three factors contributed to this increase:

- delays due to a court challenge, and added requirements for light rail standards
- early comment and feedback from stakeholders to the Environmental Impact Statement (EIS)
- conditions of approval of the project.

Court challenge and requirements for light rail standards

Court challenge delayed process 12 months; light rail requirements added

The environmental impact assessment and determination process was delayed for 12 months. This was due to an initially successful Supreme Court challenge instigated by a bus operator questioning the right of the MoT to operate public transport on the LPT across five existing bus contract areas.

The Government introduced new legislation, *the Passenger Amendment (Transitways) Bill 2001* to enable operations on the LPT, whilst at the same time winning at the Court of Appeal. The new legislation introduced a requirement to provide for light rail operation on transitways, significantly changing LPT design requirements, road alignments and property boundaries.

Light rail requirements added only $13m

The legislative requirement to build the new sections of the LPT to light rail standard was presumably seen as a desirable long term option, as there was no evidence that light rail would be a viable in the short term. If an option had been given in the legislation to "stage" or defer this development until conversion to light rail became a real possibility, about 3 to 5% of the total cost (about $13 million) would have been saved.

Light rail investment had benefits

This "modest pre-investment" in light rail standards had some benefits: it resulted in a road configuration with smoother bends and less steep climbs. This makes bus operations both smoother, which is appreciated by passengers, and less energy consuming, which means less polluting.

Only new sections of LPT built to light rail standards

It is important to note that the new legislation required only the new sections of road to be built to light rail standards, that is 20 km of the total route. The suitability of existing road sections for light rail would need to be checked if light rail becomes an option at a later stage.

More investment needed to adapt other sections to light rail

RTA advises that adapting the existing infrastructure to accommodate light rail in future would require significant additional work and investment. The RTA could not give us an estimate of the cost, but did provide information on the extent of additional work that would be required.

Additional work required to change in future to light rail

The cost of changing to light rail in future will depend on the type of tracks used. Anything but embedded rail or grooved tramway rail (rail set flush with the top of the existing pavement) would preclude the use of buses on the T-way in conjunction with the trams.

The kerbside lane along all on-road sections would need total reconstruction to allow for light rail operations and in some locations may require kerb and footpath level alteration as well. There would also need to be a structural check carried out on all structures (bridges and culverts) on existing roads to ensure they could deal with the light rail loadings. Other changes would include the installation of overhead catenary cables for the power supply, and a suitable depot for the trams close to the LPT.

Recommendation

The MoT should seek to amend the legislation governing transitways to require any new transitway to only be designed to facilitate adaptation to light rail in the future, but not be built to that standard until light rail can be shown to be feasible for the entire route.

Early feedback from stakeholders to the EIS

Feedback to EIS added $47m to cost

We established earlier that the added requirements for light rail standards contributed only about $13 million of the $60 million increase in cost at the environmental impact assessment stage. The remaining $47 million resulted mostly from early feedback to the EIS. This feedback involved other modifications to the original proposal.

Extent of feedback reflected inadequate consultation

In our view the extent and cost of new requirements introduced at the EIS stage generally reflect an inadequate understanding of stakeholder requirements, and show a need for improved consultation mechanisms.

The RTA considers that the consultation carried out during the planning and EIS stages of the project did adequately engage the community and provide information on what was being proposed. As evidence, the RTA points to Sections 4 and 4.4 of the EIS - Section 4 covers the consultation carried out prior to and during the preparation of the EIS, and Section 4.4 provides an evaluation of the effectiveness of the consultation.

The RTA also advises that all affected agencies were kept informed of progress. This included individual briefings of emergency service organisations leading up to commissioning of the T-way. Further consultations were held (especially with Police) following commissioning.

Scope for improving consultation

However, the feedback we received from relevant stakeholders including councils and Consultative Committee members, suggests some scope for further refinement of this process, including:

- when consultation should occur and about what issues - earlier consultation even at the concept development stage is desirable and should not be limited to design or engineering issues
- improved mechanisms for consideration/assessment of stakeholder views – introduction of a separate body independent from the proponent and or their agent/contractor to consider and assess community input.

Obstacles to the LPT consultation included:

- community scepticism on ever seeing quality public transport actually happening in the West
- that there was no comparable project
- broader traffic and bus issues monopolised debate with Parramatta and Liverpool Councils
- community groups often want to re-visit decisions taken at the EIS stage where most of the consultation occurs, and are unhappy if told that they are too late.

To illustrate the extent of community disinterest in the consultation process, the RTA gives the example of the NWTN where the RTA held three cycles of four meetings each before the EIS was finalised – the largest attendance was 40-60 people, despite having a mailing list of 17,000 names in the affected community.

Examples of the RTA's communication with stakeholders about the LPT

During the construction phase of the project, the RTA used a wide range of communication methods.

It also formed an LPT Consultative Committee comprising representation from the four affected Councils, community groups, and bus operators. The membership and nominated independent chairperson were agreed by the DoP. This group provided a reasonably effective means for the community to express their views. Some concerns were raised too late to change the plans – for example station locations were already contracted.

The RTA acknowledges, however, that the effectiveness of this committee could have been improved through the invitation of residents to nominate for membership of the committee as has been done for the North-West T-Way Network and other recent RTA projects.

GOOD PRACTICE

The RTA advises that over the last three years it has undertaken an extensive review of how it manages the EIS process and is currently working with regulatory agencies to start the process earlier to enable prompt identification of risks.

GOOD PRACTICE

Recent changes to the EIS process may also help with consultation. In September 2004, the then Minister for Infrastructure and Planning announced a major overhaul of the NSW planning system. Reforms include:

- focus on strategic planning for growth areas
- simplifying planning control
- improving development assessment processes

Recommendation

The RTA should further refine its processes so as to ensure more effective consultation with relevant stakeholders from the concept development stage, and early identification of risks.

Conditions of approval

Project conditions of approval need thorough assessment

The additional 106 conditions of approval imposed at the EIS stage required a profound analysis of possible adaptations on existing infrastructure before calculating project cost, design, build and maintain options. Therefore, at the conclusion of the environmental assessment stage, a re-evaluation of risks, delivery timeframe and project cost should have been seen as critical before proceeding to the construction stage.

Risks not assessed after approval

The RTA moved to the design and construction stage immediately after the conditions of approval, without assessing the new risks involved.

2.2.3 Cost drivers at the construction and commissioning stage

Cost increased $88m during construction

The cost of the project increased by $88 million, from $258.1 million to $345.7 million, at the construction and commissioning stage. This is about 36% of the total cost increase.

Construction time compressed to 12 months

The 12-month delay due to the court challenge and getting approval of the EIS left only 12 months for the construction of 16 km of the overall 20 km dedicated section of the LPT to meet the 2003 deadline.

Detailed costing after construction started

A detailed cost estimate of the project was not done until November 2002, almost a year after the conditions of approval were received. There were to be two more major revisions.

Decision to stick to deadline done without assessing risks

At the time, the RTA decided to complete the work that was essential for the operation of bus services by the deadline, and to continue with the balance of the work after buses had started running. The decision to adhere strictly to the deadline set in 1998 without fully assessing the conditions of approval added new risks that have contributed to delays and increased infrastructure cost. For example, to meet the deadline, it was necessary to award a number of simultaneous contracts and to run them concurrently. This created difficulties in giving simultaneous access for contractors, especially those working on the stations and the ITS while other contractors constructed the road.

Most essential work finished by deadline, but balance of work continued til much later

Most of the dedicated bus roadway construction works were completed on time and trunk operations commenced in February 2003. The balance of construction work continued until December 2003. Other work essential for running services reliably included signals, right of ways and signage. The systems associated with the LPT had not been fine tuned when buses began operating.

Other construction caused delays

Construction of several items located on sections of existing roads (that is, the non-dedicated busway) on the LPT route was also delayed. Some of these were planned and timed by other agencies, and were out of the control of the LPT project. These are discussed in Chapter 4.

Implementation timeframe not well assessed upfront

In our view, this reinforces the importance of evaluating the implementation time for different elements of a transitway before starting the infrastructure project. Negotiations with different stakeholders (such as the RTA traffic section and local councils) on traffic light priorities for buses at intersections and the introduction of separate bus lanes often require even more time than building new project infrastructure.

Not securing access to major centres had adverse effects

Priority could have been given to improving bus access into both Liverpool and Parramatta. Local services would have benefited, and the trunk operations worked more smoothly once the dedicated transitway infrastructure was complete. However, the timing of the work on the Parramatta Transport Interchange would not have altered and the delays caused by this work would still have been experienced. Delays to access at both of these cities detracted from the quality of the transitway ride, and may have created poor impressions on early patrons. This had important implications for bus operations, which we will discuss in the next chapter.

In looking at any major project with the benefit of hindsight there will be things that could have been done better or differently, especially a better understanding of risk and more effective risk management, and improved cost estimation.

It was not clear to us why the deadline had to be adhered to so strictly, unless there was an imperative to have the buses running before the state election. So, we asked the RTA if it considered options such as:

- seeking an extension of the deadline to deliver the infrastructure
- staging the project instead of delivering the complete infrastructure.

The approach adopted by the RTA

The RTA believed that an extension of the deadline was not necessary.

The RTA sets deadlines for significant milestones for all of its major projects such as the date for opening the infrastructure to traffic. The 16 km of T-way lanes completed by the opening were necessary to establish a cross-regional bus service. Existing roads could not be used without having longer and indirect routes and lower speed limits on local roads. This would have compromised the travel times of the services.

Once the dedicated sections were completed, a viable service could be operated along the route to service all of the planned station locations despite the incomplete road and station infrastructure. The early start of the service gave the local community an earlier return on the investment in the project. The high rate of growth in patronage in the early months is an indication of the success of this strategy. Remaining works on the project were then completed without affecting passenger safety and with disruptions to bus services reduced as far as practicable.

Staging or extending deadline not assessed

We found no evidence that the option of extending the deadline or staging the project had been considered or assessed on a value for money basis, before deciding to adhere to the deadline.

The RTA and the MoT have applied some important lessons learnt from the LPT to other projects. They tell us that:

GOOD PRACTICE

The North-West T-way Network will:

- be constructed under a single integrated construction package
- include modified station structures and ITS facilities, and
- be used by an integrated network of bus routes from its opening.

Compared to the LPT, overall costs may be reduced by the rescoping of station structures and the Intelligent Transport Systems. Financial modelling of bus operating scenarios will achieve the best match between infrastructure and the network of services using it.

RTA advice on changes to estimation methodology

The RTA has established the Project Management Office (PMO) as its centre of excellence for project management. Its roles include the review of estimates within the RTA. The Commonwealth recommended the PMO model and its estimating systems to other states as best practice.

Features of the changes include:

- a database of contract rates for road and bridge construction
- a process for building adequate contingency into project estimates
- a trial of estimating software to introduce a probability based estimating procedure
- an externally certified project implementation system
- an improved project status reporting system.

Recommendation

The RTA should:

- ensure its revised methodology for cost estimation, project management and risk assessment is implemented for all major projects
- carry out a detailed review of the cost estimate of each project once the conditions of approval are known and before any detailed design and construction work
- consider, in planning for transitway implementation, opportunities for:
  - staging construction to achieve earlier bus operations matched to the demand for travel, with further corridor development linked to urban growth
  - developing integrated construction packages.

2.3 Overall cost drivers

CPI and land acquisition major overall cost drivers

There were two major factors that contributed about $91 million (26.3%) to the overall cost of the project. These were:

- land acquisition contributed $44 million (12.7%)
- CPI escalation over the life of the project added $47 million (13.6%)

2.3.1 Reservation of transport corridors and land acquisition cost

Fairer system of land acquisition for public transport use needed

It is important to reserve transport corridors, but a corridor needs to be reserved for a specific purpose (for example for public transport or for road transport). When a Government agency wants to acquire land that has been reserved for a transport corridor, it pays a price based on the best use of the land under a hypothetical zoning. This is usually a higher value based on future use of the land.

For example, the local Council may plan for higher density housing once it has the convenience of public transport at the door. There could be considerable savings in acquisition costs if the system were changed. This audit will not consider such changes in detail, but suggests the concerned agencies develop proposals for changing the system to reduce uncertainty in costing projects.

Regardless of whether this change is made, land acquisition costs need to be acknowledged as part of the overall cost of reserving transport corridors.

Early reservation as a transport corridor in planning instruments assists long term planning objectives. However, it may generate requests for early acquisition by Government, under the hardship provisions of *the Land Acquisition (Just Terms Compensation) Act 1991,* before project funding allocations.

Acquiring land early is critical

Acquisition of land for transport corridors close to major centres is critical before development takes over and land acquisition becomes more expensive.

The DoP agrees with the importance of reserving corridors for transitways:

- "Transitways are generally suitable for the new land release areas, and may offer a more affordable and/or sustainable passenger transport option than either rail extensions or further road network expansion, provided specific corridors are examined in more detail
- they are suitable because of their service flexibility and comparatively low capital cost, particularly if land acquisition costs can be minimised or acknowledged as part of the overall cost of reserving arterial road corridors."

Not all reserved land was suitable for the LPT

Some sections of the LPT were only feasible because the RTA was able to use the corridor originally acquired by the DoP for the Prospect Arterial Road. This corridor was not wide enough in all locations for an arterial road and the Transitway. The corridor was only available for the Transitway because the Government decided to locate the Western Sydney Orbital (M7) further west, which made the Prospect Arterial Road unnecessary.

This road reservation needed to be used partly because the original SREP 18 public transport corridor was too narrow in many places to be used. The important parts of the route closer to Parramatta and Liverpool were not on any corridor. Also, urban development had taken place along the public transport corridor, which had no access or orientation to the LPT.

GOOD PRACTICE

The DoP advises that the Government is addressing the issue of reservation of transport corridors as part of Metro Strategy planning. It has now dedicated some resources for this.

The RTA on government initiatives for transport corridors

In the North West and South West land release sectors, it is proposed to identify some corridors as "transit boulevards", that is arterial road and town centre "main street" corridors that are wide enough to include dedicated bus lanes. It is important to have bus services operating on these corridors from the earliest stages of the settlement of new suburbs, especially when development density is still too low to warrant high public transport frequency in its own right.

This makes it appropriate that Metro Strategy planning includes provision for urban developer contributions able to be used for subsidising (these early loss-making) bus services as well as acquiring and/or building the rights-of-way for public transport.

Exhibit 2.2 illustrates how high land acquisition cost can be as a proportion of project costs.

Exhibit 2.2 Land acquisition as a proportion of project cost

Project	Total cost of project ($m)	Estimated land acquisition cost component ($m)	Land acquisition share of total project cost (%)
LPT	345.7	44	13
North-West T-way Network	524	144	27
Western Sydney Orbital	1,800	300	17

Recommendations

The RTA should develop a proposal for change to the land acquisition process, and submit this proposal for consideration by the Minister for Commerce. Regardless of whether this change is made, land acquisition costs need to be acknowledged as part of the overall cost of providing transport infrastructure.

The public cost of "pioneer" public transport services should be minimised by the Metro Strategy providing for urban developer contributions to be used for subsidising the early phase of bus services as well as for building bus lanes or acquiring other rights-of-way for public transport.

2.3.2 CPI escalation over the life of the project

Allowance for CPI and building cost rise in project cost important

The RTA uses the concept of "outturn costs" to estimate what the total dollar expenditure on a project will be at the time of completion.[4] This process allows the anticipated variations caused by CPI and road building cost rises to be incorporated in the figures that are announced publicly. Therefore the early announced cost will be closer to the actual final cost.

CPI and building cost not included in all LPT cost

We noted that the earliest estimates for the LPT were current year estimates not outturn dollar estimates. The RTA now uses outturn dollar estimates in public announcements about projects. Outturn dollar adjustments in LPT cost estimates totalled $31 million.

Other charges driven by CPI added to cost

Delays in project delivery also lead to other significant charges over the life of the project, including extended project management charges and contract prolongation charges. These charges, mostly driven by CPI increases, totalled about $16 million for the LPT. See Exhibit 2.3.

Exhibit 2.3 Specific elements of LPT cost increases

Factor	Additional charges ($m)	Total project cost ($m)	Share of total project cost (%)
Outturn dollar	31.0		9.0
Contract prolongation charges	5.5		1.6
Extended project management charges	10.5		3.0
TOTAL	**47.0**	**345.7**	**13.6**

Recommendation

The RTA should better incorporate cost escalation in planning decisions.

[4] In simple terms the estimated outturn cost of a project is the expected final expenditure on the project as shown in the RTA's accounts as calculated at various stages during the project lifecycle. At each stage it is the sum of the actual expenditure to date plus the indexed estimated cost of remaining works in each future year.

3. Was the State Transit Authority bid based on a sound business case?

At a glance

In January 2002, the STA was awarded an eight-year contract to run bus operations on the LPT starting from February 2003. The STA won the contract through a competitive tendering process on the basis that operations would not require a government subsidy over the eight-year period. Two and a half years later, patronage levels are showing strong growth. They are still well below those projections that formed the basis for the STA's winning bid, and hence losses are accumulating.

In this chapter we examine whether the STA bid was based on a sound business case and the implications of this contract for other bus operators.

3.1 The invitation to bid to operate bus services on the LPT

LPT operations put to public tender

In September 2001 the Ministry of Transport (MoT) invited Expressions of Interest (EoI) from bus companies to run the LPT trunk service for eight years. (The trunk service means buses operating only on the main route from Liverpool to Parramatta and back.)

Return to government was an important bid selection criteria

The basis of the EoI was the ability to provide bus services to fit with the aims specified by the MoT. These included achieving a service strategy that facilitates integration with other services, encouraging patronage growth, and providing a high standard of buses. Once that was established, return to government was a key consideration. As public transport traditionally relies on government subsidies, the "best" return to government might equate to the least subsidy required by the bidders.

Only two months given for bid preparation

The partner agencies were strongly committed to having services operating by the original deadline of February 2003, which was just before the coming State election. They determined that it would be necessary to give the successful bidder 12 months lead time to acquire the buses, staff and other resources needed to commence operations.

Maintaining the timetable to open the Transitway by February 2003 hampered the ability of potential operators to fully develop their business cases. They had less than two months to prepare their bids.

Critical information for bid preparation not available

The deadline meant that the expressions of interest were called before the conditions of approval of the project had been finalised. The EoI said that the route shown was dependent on the conditions of approval for the project. Travel time is a key factor in attracting passengers. Some information critical to calculating travel time was not available, such as the degree of priority to be given to buses at major intersections. However, the RTA provided the overall anticipated delay at traffic lights along the route. Potential operators could not test estimates of running time over the route, as the infrastructure was not completed.

3.1.1 Earlier approach from five local operators

A bid in an earlier tendering process had merits, but could not have been implemented

There was an earlier EoI process, in 1999. The MoT wanted to test how interested private bus operators were in operating the LPT. They decided not to go ahead at that point – there was too much uncertainty, and the bus companies saw the project as financially risky. What is interesting about this early process is that the five local bus companies signed a Heads of Agreement, and put forward a proposal to jointly operate the LPT.

The government agencies did not pursue this approach. They doubted the ability of the companies to work together, and regarded their legislative powers to legitimise cross-contract boundary services as untested. In 2001, they re-started the public tender process.

By 2004 the situation had dramatically changed. Under the 2004 bus contracting reforms, the local operators in a region have been invited to form Area Management Companies to jointly run all bus services in their region. The contract for Region 3, which is built around the LPT route (see Exhibit 1.2), is being negotiated with the Area Management Company constituting these same five operators in mid-2005. With hindsight, accepting or further encouraging the original co-operative approach while developing the reform framework may have cut several years off the process of getting the LPT running with fully integrated services, but at the cost of not having a competitive tendering process. We note though that the bus contracting reforms had not been contemplated at the time of awarding the LPT bus operations contract.

3.2 The STA bids

STA set up new company for bid

The State Transit Authority (STA) decided to set up a subsidiary company, eventually named Western Sydney Buses (WSB), to make its bid. The subsidiary was to ensure competitive neutrality and to enable a reduction in costs. The STA made adjustments to its bid to comply with the competitive neutrality principles. The STA achieved the reduction in costs it was seeking particularly by negotiating a separate industrial agreement with the Rail, Tram and Bus Union (RTBU).

Patronage and revenue estimates and Board's role important in judging STA's bid

A key question for the audit was whether the business case behind the bid was sound. We examine this by looking at three key areas: patronage estimation; the estimate of financial viability; and the role of the STA Board in the bid. The actual patronage and loss figures to date will be reviewed in Chapter 4.

3.2.1 Estimating patronage

The EoI included patronage estimates of 4.3 million passenger trips a year. These estimates were provided without any warrants from the MoT.

Patronage estimate of 1.7m trips a year recommended

In preparing to bid, an internal STA paper put forward three estimates of patronage (Exhibit 3.1), and recommended the moderate estimate of 1.7 million passenger trips a year with sensitivity analysis (that is, looking at what else would change if the assumed figures changed). The high estimate was the 4.3 million figure projected from the EIS and EoI.

Exhibit 3.1 STA patronage scenarios

Estimate	Annual Trips	Comments
Low estimate	719,200	Based on existing bus use in the LPT area
Moderate estimate	1,699,400	Recommended – based on a comparable STA bus route
High estimate	4,294,800	Projection from the EIS consultants' figures
Final bid figure	2,800,000	As submitted by the STA management

We reviewed the methodology used in developing these STA patronage estimates (excluding the final bid figure) and found it to be sound.

Patronage estimate of 2.8m trips a year in bid

However, the STA bid did not adopt the recommended patronage level of 1.7 million passenger trips a year. It made the bid on the basis of an average 2.8 million trips a year. The CEO advised the STA Board that the patronage projections in the bid were conservative, because they were well below the patronage estimated by the MoT in the tender documents.

Decision to bid higher than recommended not supported

We found no information supporting the decision to bid on patronage levels higher than those recommended internally. This means we were not able to determine if there was a sound business case for the decision.

The STA advises that the 1.7 million per annum figure was from a technical analysis, and seen by management as too conservative for an attractive route. Eventually they took an entrepreneurial decision, based on the need to take risk to win bids. The STA advises that it cannot produce documentation other than the bid itself, and that the final patronage figure submitted would have been based on internal discussions.

We acknowledge that a bid such as this needs to be produced to a tight deadline, often with less than ideal resources, and involves a deal of professional judgement.

Bidding higher than recommended vindicated

We accept that an entrepreneurial decision to go higher than the technical advice has been vindicated, as the level of 1.7 million passengers a year has been reached within the first two and a half years of operation.

Scale of increase from recommended level not documented

But the scale of the increase in projected patronage concerns us. While acknowledging that the projections from the internal analysis were conservative, an increase of 65% from the recommended level is highly material and, in our view, warranted substantiation, not just discussions. Without substantiation, we cannot be satisfied with the robustness of the business case upon which the bid was based. This is significant because the higher figures used made the difference between the STA bid projecting a loss or a break-even financial result, and hence no government support being needed. This is likely to have had a significant impact on the decision to award the contract to the STA and hence our emphasis on the importance of the STA being able to substantiate the figures that underpinned the bid.

Substantiation would have been prudent

STA management does not share our view. They contend that their judgment was reasonable, that estimating patronage is notoriously difficult. We do not dispute this, but we believe that stronger substantiation would have been prudent. This would have provided greater assurance that a decision to award a major government contract to the government bidder was the most appropriate decision. It would have also avoided any perception that the STA may have used its market position to win the contract (as owing to its size it may be better placed to bear any potential losses than a private sector operator).

3.2.2 Is the operation likely to be financially viable?

Patronage is the main generator of revenue for the bus operations. The higher the patronage, the higher the revenue, and hence the more likely it becomes that the operation will break even or make a profit.

STA bid on basis of requiring no government subsidy

The STA Board was told that the cost of operating the LPT bus services was estimated to be in the order of $5 million a year, which would be covered by the estimated revenue. The project was anticipated to make losses in the first two years, break even during year 3 and generate positive shareholder value for the term of the contract. The estimated profit over the full eight years was $3.2 million. This was the basis for submitting a bid not requiring a government subsidy.

Without supporting documentation STA cannot refute claims that bidding higher than recommended was to win the contract

Had the STA used a significantly lower patronage figure in the bid, the resultant drop in expected revenue would have meant the trunk services running at an average loss over the first eight years. For example, average annual patronage of 2.4 million instead of 2.8 million would produce $5 million less in fare box revenue over the eight years. Other factors being equal, the operation would thus lose a cumulative $2 million over the eight years. On this basis, the bid would have required an on-going subsidy from the MoT.

Losses made have been greater than projected. The STA contends that these are still within reasonable limits, given the uncertain nature of these types of projects and that certain actions which would have assisted patronage did not occur as anticipated.

We acknowledge that prudent commercial decision-making requires an assessment of the risk of incurring losses, and the ability to handle them if they occur. In making the bid, the then Chief Executive of the STA has stated to us that the possibility of losses was considered and accepted on the basis that the overall size of the STA was such that any potential losses would have minimal impact on the STA's overall debt position.

However, the STA is not just another bidder. It is a government agency, competing with private sector operators for a government contract. We note that under the competitive neutrality principles, the STA is not required to make any adjustments for advantages it may have on the basis of its size and experience in providing domestic bus services. However, the STA should have expected that its bid would attract detailed scrutiny and require high levels of substantiation. Also, because of its dominant position, the STA should have been conscious, in bidding against smaller operators, not to use (or be seen to use) its market power through being better placed to bear any potential losses.

Expectations of transparency in government are very high, especially in competitive situations. For this reason, ensuring that bid preparation was robust, both in fact and in appearance, should have received greater attention in our view.

3.2.3 Role of the STA Board

The STA submitted its bid on the 22 November 2001 in response to the LPT EoI with the STA Board's knowledge. STA management did not have written approval from the STA Board before it signed the contract. We note that it had been given a very short time frame (four days) between being told it was a shortlisted tenderer and being required to sign the contract. We are advised that it sought the Minister's approval and the Chairman canvassed the opinion of individual Board members. The Ministry of Transport awarded the contract to the STA on 8 January 2002.

Board briefed regularly on bid

The Board was briefed regularly on developments with the bid and the terms of the contract:

- on 13 December 2001, the Board said that if the bid was selected, it "wishes to have a careful look at the terms of State Transit's tender and the details of the contract before signing"
- on 17 December the STA was shortlisted as one of two proponents to negotiate the contract
- on 19 December the STA was made aware it was about to be named as preferred tenderer and required to sign the contract on 21 December
- on 20 December, an 8-point summary of the contract was faxed to Board members, and the STA advised the Minister that the Chairman of the Board had rung individual Board members and that they "did not oppose the proposal" and that "all members support the initiative". We accept that the time frame forced such a procedure, but would prefer these opinions confirmed in writing and the emergency decision documented in the next Board minutes
- at its February meeting, the Board raised questions about the assumptions underlying the revenue line and the patronage projections if the ramp up (the initial period of increase in patronage as potential passengers become aware of the service) was not as fast as predicted.

Board raised important questions after STA won the bid and contract

The Board's questions were raised only after the tender bid was submitted, the performance bond for the LPT contract lodged, and the contract awarded and signed. STA management advises us that the Board's approval is not required before actions such as submitting the LPT bid. However, their written advice to the Minister when seeking his approval to sign the contract states "normally, a bid of this nature would be submitted for approval at a State Transit Board meeting prior to being submitted to you for approval".

The Board has legislative accountability to "ensure that the activities of the State Transit Authority are carried out properly and efficiently". Our concern is that it may not have had enough timely information to carry out that responsibility. In our opinion, the phone-around did not constitute the "careful look at the terms … before signing" that the Board had said it required as recently as seven days earlier. Insisting on a pause for Board consideration before signing the contract would appear to have been the appropriate course of action. The questions the Board raised appear valid, and it would appear that the STA management would have been well advised to address them more thoroughly before submitting the bid.

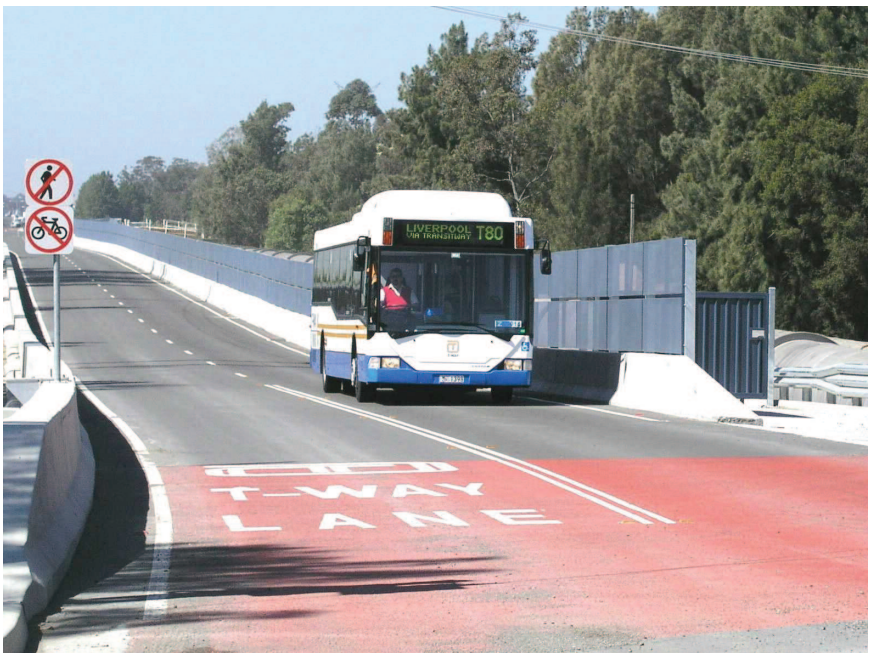
Recommendations

The STA should ensure that:

- full documentation of all analyses behind bidding decisions is produced and retained
- the STA Board has timely and full information before deciding on major bidding decisions.

Exhibit 3.2 The LPT dedicated roadway

A Western Sydney Bus on a dedicated section of the LPT (the Sydney water pipeline is on the right)



3.3 The aftermath of the bid: dissatisfied bus operators

3.3.1 Fallout from the bid process

STA only bidder to require no government subsidy

We understand that all other bidders, predominantly established private bus operators in the region, bid on the basis that they would require government subsidies to operate the trunk services. That is, the return to Government would be negative. The STA bid was on a near break-even basis: they would require no extra subsidies. This was a major factor in the success of the bid.

The STA bid said "as preferred operator, we will immediately step up our discussions with other operators regarding joint services". This integration of services is critical to the viability of the operation, and to maximising both the benefits to passengers and the return on the investment to government.

Other bus operators remain sceptical about how the STA arrived at a near break-even bid. They advised us that they suspect that the revenue expectations were over-inflated, and that the STA would cross-subsidise losses on the LPT from its other operations.

Integration of LPT with other bus services affected by a strained atmosphere

Private bus operators were disappointed at not winning the tender, which in some cases led to a degree of dissatisfaction with the whole concept. We note that the private bus industry challenged the Transitway Legislation in the courts, and the atmosphere would have been strained. All this led to a reduced likelihood of securing their cooperation on introducing integrated services (see Exhibit 3.3) on the LPT. One operator told us that the process resulted in a "lack of trust and lack of cooperation".

The Ministry of Transport advised us that the lessons learnt from this process were used in the development of the new performance based contracts currently being negotiated, including the obligations of cooperation amongst operators.

There is still no significant integration of services on the LPT. The local operators saw the route as cutting their traditional regions across the middle. Two estimated that they have lost 30% of their patronage, particularly as a result of the 400-metre "exclusion zone" on each side of the Transitway. In these circumstances, they were not receptive to re-drawing their routes to drop passengers off at LPT stations. They have also seen the contractual provisions for them to operate integrated services as too onerous, and none have operated.

The STA tells us that it welcomed limited use of the LPT by private operators. It was approached by the Ministry of Transport to coordinate feeder services with the local operators, but the STA's efforts were unsuccessful.

We note that planning for the NWTN places heavy emphasis on running integrated services from the first day of operation.

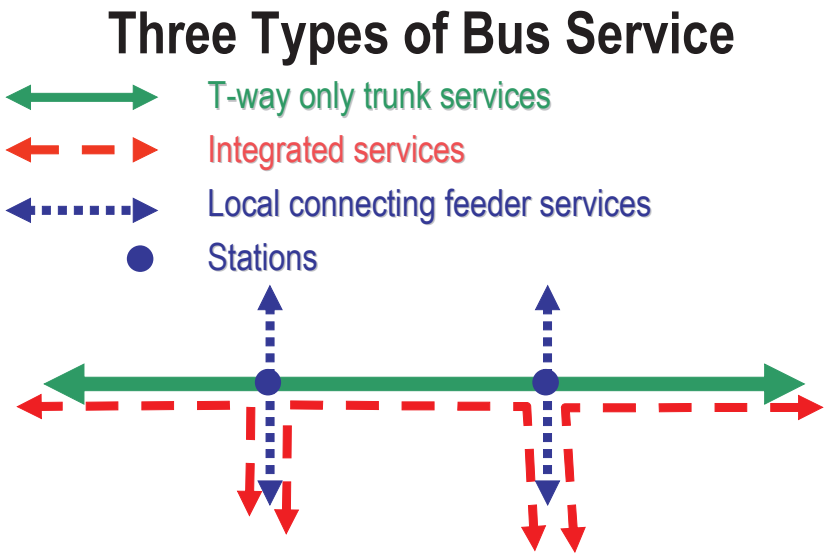
Integrated bus services: the South-East Busway in Brisbane

Express services originating in the suburbs away from Brisbane's South-East Busway carry about two-thirds of the passengers using the Busway. A single bus operator, the Brisbane City Council, runs most of these buses so there is little commercial competition between them.

Exhibit 3.3 What does an "integrated bus network" mean?

A Bus transitway can have three types of bus services operating in cooperation with each other:

1. **Feeder services**: local buses that drop passengers at transitway stations to continue their journey by transitway bus. They extend the potential pool of passengers beyond those within walking distance of a station, or willing to get to a station by private car.
2. **Trunk services:** buses that operate along the length of the transitway, usually from end to end. This is what Western Sydney Buses is operating on the LPT.
3. **Integrated services:** local buses picking up passengers in their area, which then run on the transitway to the major destinations. They may compete directly with the trunk service if they are allowed to pick up passengers once on the transitway. They significantly add to the total numbers of passengers using the infrastructure.



In Section 5.1.1 of Chapter 5, we look at the prospects for integration of LPT bus services under the new bus contracting regime.

Recommendation The MoT should make every effort to maximise the value of any transitway infrastructure by encouraging the running of integrated services as early in the operation as possible.

4. How well has Western Sydney Buses operated the LPT bus services?

At a glance

The eight-year contract for the operations of the LPT set a range of performance standards including how many passengers would be carried, indicators for passenger relations, and indicators for minimum service levels. The MoT monitors performance against these indicators.

In this chapter we examine how Western Sydney Buses has performed against these indicators, things affecting their performance and the quality of monitoring to date. We place this in the context of the bus reforms.

4.1 Performance standards in the contract

LPT contract helped shape the new bus contracts

The contract to operate the LPT was the first of a new generation of bus contracts. It introduced a range of features that were later developed into the contracts used in the new bus contracting regime established in 2005 following the Unsworth Review. It could be said that the LPT contract, and the experience of monitoring bus operations against it, had a major role in arriving at the final shape of the new bus contracts.

In the next sections, we examine the following aspects of performance:

- customer satisfaction
- patronage levels
- financial performance
- monitoring service levels and variations to the contract.

4.2 Customer satisfaction

LPT customers very satisfied

There has been a relatively low level of customer complaints about staff and services. Feedback to the audit from relevant community and stakeholder groups about the LPT services was positive overall.

A customer satisfaction survey conducted for the RTA in November 2004 reinforces our positive feedback. It showed that:

- the valued features of the LPT included 'feeling safe on the bus', 'real time information' and 'bus cleanliness'
- 77% of passengers believe that the LPT has increased their travel and destination choices
- 98% of passengers were satisfied, or more than satisfied with the LPT service
- 13% of LPT trips were by former car users (nearly double the previous year)
- 60% of LPT passengers would use integrated services if they were provided locally.

Further, WSB was a finalist in the 2005 Fairfield City Business Award (category of Outstanding Specialised Businesses). Finalists are judged against criteria such as presentation, products, value for money and customer services.

4.3 Strong growth in patronage, but well below projected levels

Incomplete infrastructure affected LPT use

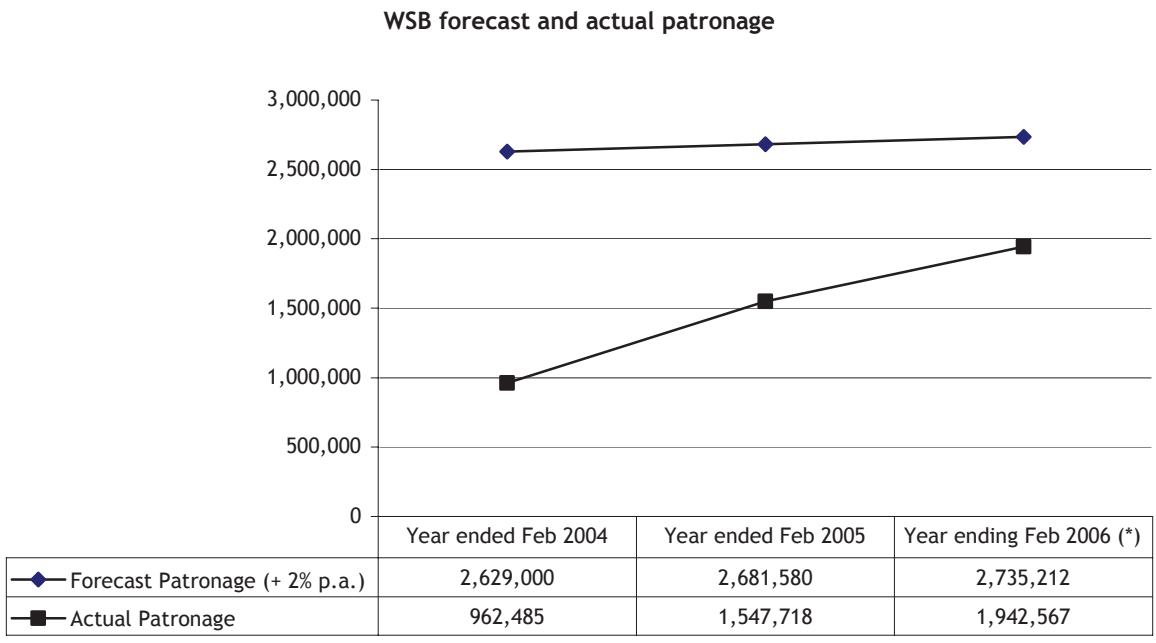
A decision was made to open the transitway before the infrastructure was complete. This contributed to a slow start in passenger numbers. The overall pattern is of strong growth (See Exhibit 4.1).

Over 4 million trips made on LPT so far

In the first year of operations, just under a million trips were made on the LPT. In the second year, it was well over 1.5 million (a 60% increase). In the third year, with figures for the first seven months available at the time of writing, it seems reasonable to project that it will be close to 2 million (a further increase of almost 25%).

In January 2005, fare standardisation was introduced across all Sydney buses, together with making the discounted Pensioner Excursion Ticket available metro-wide. This made LPT travel cheaper for all customers, and contributed to the third year strong growth trend in patronage numbers.

Exhibit 4.1 The STA bid projections for patronage compared with actual performance to mid-2005, projected to February 2006



	Year ended Feb 2004	Year ended Feb 2005	Year ending Feb 2006 (*)
Forecast Patronage (+ 2% p.a.)	2,629,000	2,681,580	2,735,212
Actual Patronage	962,485	1,547,718	1,942,567

* Note: We used actual figures for the seven months to August, and projected them to February 2006

Patronage growth strong but well below projections

The patronage growth up to now is strong, and far outperforming almost all other Sydney bus routes run by the STA. However, it falls well short of the patronage projections in the bid. Those projections were for 2.7 million passengers by the end of the third year. Cumulatively, actual patronage will be about three and a half million behind the projections by February 2006.

STA management shows confidence in the LPT as a bus route. The LPT has two peak periods (for City and Parramatta commuters), and plenty of off-peak and intermediate destinations. Forty per cent of passengers are going to the shops or a place of study. There are also passengers wishing to travel in both directions throughout the day, including during peak periods.

GOOD PRACTICE

In our view, WSB has shown responsiveness and flexibility, and has increased patronage, while achieving very high customer satisfaction. The potential to keep increasing patronage will be considered in Chapter 5.

4.3.1 Patronage levels and performance suffered from delays in completing the infrastructure

Construction delays affected passenger numbers

Those bidding to operate the route knew of the decision to commence services before the infrastructure could be completed. The EoI document showed two sections of the LPT as not expected to be complete until 31 December 2003. These were the upgrading and widening of Hoxton Park Road (into Liverpool) and the Great Western Highway (the approach to Parramatta).

Three other projects external to the transitway added further delays. These were:

- Sydney Water carrying out major pipeline work on Moore Street (the last leg into Liverpool terminus). This delayed completing the bus lane for the LPT by twelve months, to March 2004
- two lanes were added to Hoxton Park Road for the transitway. A further two lanes were added to part of the road used by the transitway to accommodate traffic entering Liverpool from the M7 Orbital road west of the transitway. These extensions were completed in May 2005
- the LPT had built a terminus station and bus turnaround in Argyle Street Parramatta outside the train station. The Parramatta Transport Interchange (PTI) is being built as part of a massive redevelopment of the Parramatta town centre. The LPT terminus station has been demolished and the route to it along Argyle Street intermittently closed. A series of temporary bus stops and route changes have caused confusion to passengers and delays in running time at this key end of the route. The PTI, once completed in December 2005, will provide a state of the art bus terminus for all Parramatta bus routes, including local services, the LPT, the North-West T-Way Network, and potentially for the Parramatta to Strathfield Transitway, should it go ahead. Conversion of Argyle Street to one way for general traffic but two way for buses will also enhance the run into Parramatta. The new bus turnaround will be located on the other side of the Station, which will add a little to time before a bus can start the return journey, but will not affect the passenger trip time on the LPT.

Exhibit 4.2 The Parramatta Transport Interchange under construction

A LPT bus makes its way out of the Parramatta Transport Interchange construction site in September 2005.

The effect of these three projects, coming on top of the incomplete LPT-specific infrastructure, was that the LPT operated through continuous construction delays, and temporary route and station changes at both ends, for much of the first three years of operation. While not quantifiable, the delays in journey times and passenger confusion are assumed to have had an effect on overall passenger numbers.

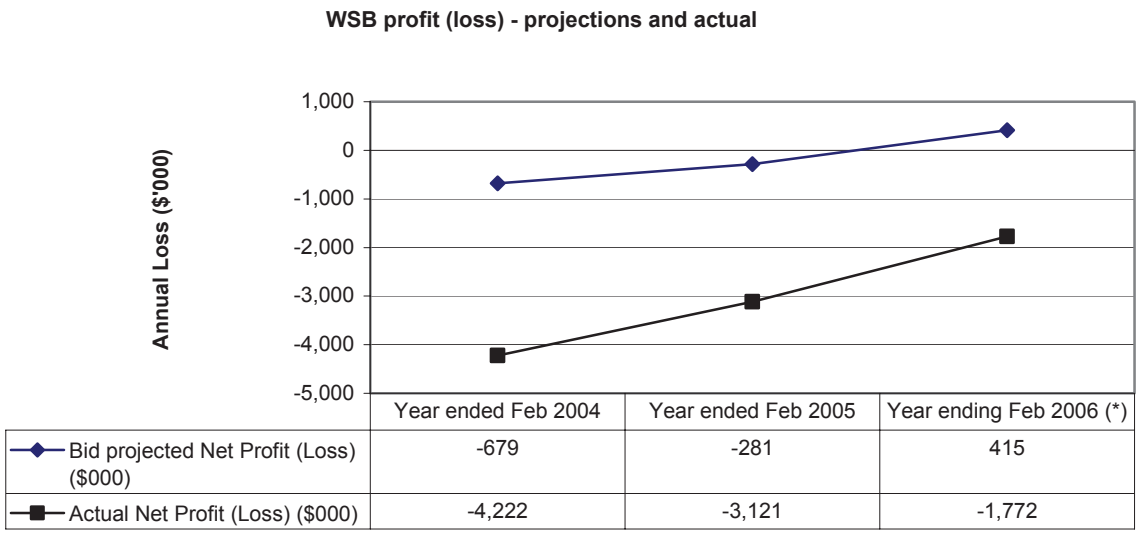
4.4 Western Sydney Buses financial performance

Western Sydney Buses manages the LPT operations. The parent body, the State Transit Authority, offers support services such as marketing on request.

Losses in first three years higher than expected

The bid projected small losses in the first two years, and profitable operations in Year 3 ($400,000+) and thereafter. The result over eight years was to be a net profit of $3.2 million. The operation has incurred substantial losses: over $4 million in the first year, over $3 million in the second, and we project a loss of around $1.7 million in the third year. Exhibit 4.3 compares these projections to actual performance.

Exhibit 4.3 The STA bid projections for profit/ loss compared with actual performance



	Year ended Feb 2004	Year ended Feb 2005	Year ending Feb 2006 (*)
Bid projected Net Profit (Loss) ($000)	-679	-281	415
Actual Net Profit (Loss) ($000)	-4,222	-3,121	-1,772

* Note: We used actual figures to 30 June 2005, and projected them to February 2006

But losses are reducing

Clearly, the losses are reducing rapidly. The major factor is the growth in patronage – more passengers and fuller buses mean more fare box income. WSB listed a number of factors contributing to the operating losses, and management actions to improve the financial performance.

Many factors contributed to unexpected expenditure

1. A major unanticipated cost factor was the unavailability of Compressed Natural Gas (CNG) at an acceptable cost at any potential depot near the route. This meant sending empty buses forty to fifty kilometres return to either the Kingsgrove or Ryde depots every time they needed to refuel. They have successfully cut back on wages by reducing this "dead running time" since the change to diesel buses.

   The STA had been informed at the time of the bid that gas supplies were available at Bonnyrigg and other potential depots along the route. It became apparent later that the available gas pipeline was for domestic use. Installing the heavier duty and higher pressure pipeline needed to use the gas for buses was seen as prohibitively expensive.

2. Since the change to diesel buses, fuel costs have increased, especially as the price of diesel has escalated.

3. The bid was based on an expected 55-minute peak running time, compared to the (up to) 67 minutes currently experienced. Slower running costs more because it means more buses and more drivers are needed. It may also deter some potential passengers and so reduce revenue as well.

4. Infrastructure delays have added to travel times and confused access to both Liverpool and Parramatta. Good running times are being achieved on the dedicated sections, on Hoxton Park Road, and on the sections near to Parramatta.

5. The contract specified that WSB was responsible for station maintenance, a responsibility that no other bus operator has. This became onerous with the unanticipated high level and cost of vandalism. A renegotiation led to the responsibility reverting to the MoT in January 2005, which was then contracted to the RTA. The RTA has also assisted with additional security costs during construction of the remaining infrastructure.

6. The limited advertising allowed at stations has not proven attractive to potential advertisers, and the anticipated revenue has not been met.

7. Fare equalisation introduced in January 2005 increased patronage but lowered fares, and may have led to lower revenue.

STA subsidising all losses

As a subsidiary of the STA, the WSB losses are cross-subsidised by the STA (as it does for another subsidiary, Newcastle Buses). There has been no additional government money given to the STA to cover the LPT losses.

Losses will not be recovered

We consider that the losses are not unreasonable in the phase of establishing the route, and continuing growth in patronage is bringing the achievement of break even closer to reality. It seems reasonable to assume that this would be reached well within the eight years of the contract. However, the size of the losses to date – nearly $9 million – makes it unlikely that a full eight-year period of operation would allow those initial losses to be recovered.

Bid was too optimistic

Had a more realistic ramp-up period been allowed for, and subsidy requested for the first few years, the bid probably would still have succeeded. The operating result may be reasonable, but is well below the financial projections used in the bid.

4.5 Performance against service levels and variations to the contract

Exhibit 4.4 LPT Tour

The audit team on an inspection tour of the LPT, June 2005

LPT operations meeting contract standards

The contract set minimum service levels (such as punctuality, reliability, and maximum journey times) and these have been complied with. WSB introduced several changes to the timetable to meet bus loading standards and customer expectations. Annual fine-tuning of the timetable is planned in response to changes in patronage and customer expectations, which is a positive indication of the responsiveness of the operator.

Technology issues affecting monitoring of reliability and punctuality

The MoT could not monitor reliability and punctuality as planned because of the road projects in Parramatta and Liverpool. An Intelligent Transport System (ITS) monitors bus movements on the LPT. Each bus is equipped with transponders – when it passes over a loop built into the road surface, information about its time and location is logged centrally. This provides the display of bus arrival information at the stations, and is also the key to the system of monitoring bus performance. Having the road surface dug up at both ends has meant that these key loops have not been working.

With no sensors in key locations at both ends, the ITS data has not been reliable enough to produce punctuality and reliability reports.

It has not just been the digging up of the sensors that has caused the reliability problems with the ITS. Representatives of the operator have called it a "frustrating piece of technology from Day One". Some of the loops are still not working reliably. The audit is told that problems with the ITS are being progressively resolved.

The MoT is now having to check a sample of driver reports rather than using the ITS-generated data. All involved have been frustrated in attempting to resolve these problems. Patronage data is collected separately, and the MoT has no significant concerns with the reliability of the adapted reporting systems as performance monitoring continues to occur.

GOOD PRACTICE

A result of this LPT experience has been a move away from use of loop based technologies like the ITS to technologies based on a Global Positioning System (GPS) for the NWTN and future transitways. Another consequence of this experience with the LPT is that the new bus contracts will use a new benchmark for reliability.

Recommendation

The RTA and the MoT need to ensure that clear support arrangements are in place when new technology like the Intelligent Transport System is implemented in future transitways.

Major contract changes introduced

WSB has been trying to comply with the contract despite these problems. They have negotiated several major contract variations with the MoT. These are:

1. No penalties for late running

The service disruptions caused by the continual infrastructure work might have led a private sector operator to seek compensation from the developers of the LPT, the RTA and the MoT. As a public sector entity, WSB was satisfied by a compromise agreement to waive the late running penalties. Also, the performance targets set in the contract are now seen as "punitive" and unreasonable by the operator, and have led to a remodelling of these provisions in the new bus contracts.

2. Fleet specifications

One of the reasons the STA won the contract was the promise to run a fleet of new high quality buses using Compressed Natural Gas, which meet the environmental specifications in the contract, known as the Euro 3 standard. After more than a year of expensive dead running to refuel (see the discussion on costs above), approval to replace the CNG buses with Euro 3 diesel buses was sought and granted. Either is a big improvement on the old buses in the STA fleet. The redeployment of the CNG buses to routes with gas at the depots also allowed the retirement of a number of older, more polluting buses from other routes. Which of CNG and diesel produces the worse pollution is still subject to debate.

We note that the decision to change to Euro 3 diesel buses is permissible under the LPT contract, and it has addressed the issue of dead running. This has had a further positive effect on the costs of providing the service.

Most of the travelling public and residents living near the route do not know that this change has happened.

Contract variations were necessary

3. Responses to customer needs and the operating environment

- the timetable to be operated to is set quite specifically in the contract. Based on experience, WSB sought initially to reduce under-utilised services, and then a year later to build them back up as patronage increased. They will probably increase at the end of the third year. Peak hour services operating just on the last third of the route into Parramatta have been added to cope with the increasing peak demand.
- persistent vandalism led WSB to seek to change to a tougher material for the transparent panels in the stations, which is cheaper to replace.
- some minor and temporary changes to the route to get around construction delays have also been agreed.

GOOD PRACTICE

Most of these contract variations are positive and responsive changes from Western Sydney Buses, and it is commendable that the MoT has approved them.

4.6 Can the bid forecasts be met?

The STA concedes that the business case overestimated early patronage, but says it may have underestimated eight year total patronage. It adds that in 50 years it will be flourishing: as a bus route it has great potential.

Bid projections unlikely to be achieved

After three years, patronage is likely to be about 3.6 million passengers behind the bid forecast. It would need to attract around 3.6 million passengers a year for the next five years to make up the leeway and achieve average patronage of 2.8 million. More realistically, it would need to reach 2.8 million in the fourth year, and maintain 2% annual growth, to match the bid projections over the last five years of the contract.

Integration of bus services critical success factor

All of this looks highly unlikely on current trends. The integration of bus services offers significant potential for the overall usage of the LPT. This will not necessarily help the financial performance of the trunk operator – many people will catch other operator's buses closer to home then travel on the Transitway. Once integration is achieved, a leap in the number of passengers using the LPT, for at least part of their journey, is expected.

A good operating track record

LPT route has long term potential

GOOD PRACTICE

Overall, the LPT operation is meeting the performance criteria, customer satisfaction is high, and complaints have been minimal. Patronage continues to build and with attention to potential further improvements (by WSB or if necessary by a new operator), the LPT has potential for continued strong growth. Operating losses are reducing in line with the growth of patronage, and the chances of the LPT becoming a profitable route in the medium term are promising. The potential for synergies with other planned transitways, and extensions of the current route to link with new growth areas, is also high.

5. Is the LPT being used to its full potential and is it delivering intended benefits?

At a glance

Use of a high quality public infrastructure by a large number of operators and services makes good economic sense to maximise passenger benefits and returns on investment. It also makes good economic sense to check that major transport infrastructure projects are delivering intended outcomes. So far the LPT has not been fully integrated into the public transport network largely because the contract was introduced before the new bus reforms.

In this chapter we discuss the prospects for growth in passenger numbers, why such projects should be periodically evaluated, and the future of the LPT.

5.1 How well is the LPT being used?

Integration of bus services is critical to maximise passenger benefits and returns on investment.

LPT potential is higher than current use

Patronage levels on the LPT reached about 1.7 million passenger trips in 2004-05. This is below projections in both the EoI document and the STA's contract. Exhibit 5.1 shows current patronage levels at about 40% and 61% of patronage levels predicted in the EoI, and the STA's contract, respectively.

Exhibit 5.1: Patronage compared to projections

	Passenger trips a year (million)	Patronage as a percent of EoI projections	Patronage as a percent of contract projections
Projections in the EoI document	4.3		
Projections in STA contract	2.8	65%	
Actual for 2004-05	1.7	40%	61%

No integration of bus services yet

To date, there have been virtually no non-trunk services using the LPT. Westbus is using two sections of the LPT (0.75 km and 0.5 km) in a limited way. There are also local services using the bus lanes provided as part of the LPT along the roads leading to the Liverpool and Parramatta termini, which reduces travel times for these services.

LPT running as a stand-alone contract

The LPT operation is running as a one-off contract. It has clearly not been fully fitted into the transport network to maximise the use of the infrastructure. This is largely because it was introduced just before the bus reform process.

STA management thinks that the Unsworth reforms with their rationalised bus region boundaries (see Exhibit 1.2) were long overdue. They told the audit that it is good that the reforms will apply to the NWTN, and that it's a pity that they did not precede the opening of the LPT.

Need maximise use of LPT

It does not make economic sense from passenger, operator or investment perspectives to build a transitway infrastructure if high quality integrated services cannot be assured. The new infrastructure should be used in a coordinated manner by a number of operators and services instead of reserving it to the trunk route operator.

There are a number of areas that require more work to stimulate further patronage growth and hence maximising the value of the infrastructure. These are: integration of bus services; reduction in travel time; land use changes; and increased marketing of the LPT bus services.

5.1.1 Integration of bus services

No incentive for integration of bus services

The five existing local operators had no incentive to cooperate with providing feeder services to the Transitway, believing that the new trunk operator would inevitably take patronage away from them. (See Section 3.3)

Further, those operators that might have wished to run their services along parts of the Transitway saw the provisions of the Transitway contract as too difficult to meet. In particular, most would have needed to invest in new higher quality buses. With bus reform around the corner, most would have seen this as too risky.

Trunk services not enough

Whilst patronage levels on the trunk route will no doubt continue to grow in the medium to long term, this alone will not be enough to maximise the use of the LPT and hence the return on the investment.

Integration of bus service offers many benefits

The opportunity exists to provide almost seamless door-to-door public transport services, with buses on the existing networks connecting into the LPT. Early integration of services would deliver substantial benefits to operators and passengers. (Exhibit 3.3 defines integration of services.)

The 2005 passenger survey showed that nearly two-thirds of current passengers were interested in integrated services (originating and/or terminating away from the Transitway route). Presumably, there will be even greater interest among those who do not currently use the Transitway because they cannot get to it. As previously noted, the fully integrated South-East Busway in Brisbane has nearly two-thirds of its passengers using non-trunk services.

Integration a requirement in new bus contracts

The MoT has advised that it will negotiate the service structure in the new contract area, with the LPT forming a service "spine" for Region 3. Once a single consortium of operators (the Region 3 Area Management Company) runs the whole of Region 3, it is a contractual obligation and will be in their commercial interest to maximise integration of services in the region.

5.1.2 Potential to reduce travel time

Reducing travel time can boost patronage

People are more likely to use a bus if it gets them where they want to go quickly. Reducing travel time is a key to increasing patronage. Current travel times for the full route are around 50 minutes off-peak, and up to 67 minutes during peak. The completion of the Parramatta Transport Interchange may cut one or two minutes. Otherwise, the operations appear to have reached the best achievable travel times under current conditions.

Additional priority measures for buses important

Potential improvements include:

- Introducing additional bus priority measures at major intersections. This was a key feature of the original Ministerial announcement of the LPT project. For example, the intersection with the Hume Highway near Liverpool is frequently highly congested. WSB told us that, although they were not promised bus priority there, more could be given without significantly increasing the time taken for an individual car to reach and cross the lights.

  The RTA has advised us that it has successfully trialled a system that gives buses priority through intersections with traffic signals when the bus is running behind timetable. This increases the reliability (on-time running) of bus operations. This system (Public Transport Information and Priority System – PTIPS) is being further developed for use on the Sydney Strategic Bus Corridors identified in the Unsworth Review. PTIPS will also be implemented on the LPT and the NWTN.

Introduction of integrated ticketing will also help

- Reducing the number of time-consuming cash transactions on board the bus. With 80-90 boardings on peak services, approximately 10 minutes can be spent on ticket sales. Currently, only 30% of tickets on the LPT are sold off-bus, compared with about 70% for other STA routes across Sydney.

  In particular, the introduction of the Integrated Ticketing System (swiping a "T-card" smart card to pay the fare) is eagerly awaited on this and other public transport systems. The LPT route has fewer potential ticket agencies compared with other routes. With the T-card coming, WSB has not given strong priority to investing in more agencies or ticket machines.

Recommendation

The RTA and the MoT, in consultation with the DoP, should review ways to reduce travel time on the LPT. In particular, they should consider how well the original Ministerial intention that the LPT be given "priority conditions for transitway buses where the transitway intersects with major roads" has been implemented.

5.1.3 Land use changes

Integration of land use with transport planning is critical for the viability of the corridor.

Intensifying redevelopment along LPT can boost patronage

Redevelopment along the route of the LPT has started in some significant ways. In the longer term, we are likely to see increased residential and industrial density to take advantage of the available transport infrastructure. This can be expected to build patronage significantly.

We agree with the DoP that in the longer term, LPT patronage growth would come from land use change, both along the corridor itself and in more remote areas. People moving in will use the route to access regional destinations like Parramatta, Liverpool and Wetherill Park. In the former case, there may need to be a stronger focus by the DoP and local councils on identifying and realising short- and medium-term mixed use development opportunities next to LPT stations.

Potential growth opportunities

The DoP advises that locations will include Miller, Bonnyrigg, Prairiewood, St Johns and the Great Western Highway corridor. In the case of longer-term development, under recently released proposals for the South-West growth centre nominated areas in the North of the growth centre near Hoxton Park Road will accommodate more than 50,000 new residents over the next 20 years. The LPT will provide them ready and attractive public transport access to the East (Liverpool, and the CityRail system) and the North (Wetherill Park, with more than 30,000 jobs).

GOOD PRACTICE

The DoP advises that it is now commencing work with relevant councils and stakeholders to implement plans and strategies to ensure the sustained use and viability of the LPT as a public transport service in Western Sydney.

Implementation of the Land Use Study progressing

In March 2003, the DoP commissioned an LPT Land Use Study. The study was to help fit the LPT with the surrounding built environment to ensure its long-term viability and success.

The first stage of the study identified opportunities for redevelopment of areas around the LPT for commercial revitalisation by the private sector.

The second stage of the study assessed the accessibility, urban and planning environment of seven priority stations along the LPT and their catchment and recommended a range of short, medium and long-term measures for the enhancement and viability of the LPT.

Recommendation

The Department of Planning should maintain and intensify efforts to stimulate land use changes along the LPT route.

5.1.4 Increased marketing of the LPT bus services

WSB has done as much marketing of the LPT as it thought would be cost-effective since taking the function over from the RTA/MoT. It has undertaken specific promotions around sporting events, going to the movies, and events at shopping centres. Some employer and employee awareness work has been done in the Wetherill Park industrial area, although there is potential for more.

Sustained marketing efforts also help

Once the operation of the LPT has been determined, the operator will need to give more attention to marketing as a tool to build patronage. A survey of potential passengers could be a good start.

5.2 Is the LPT delivering intended benefits?

Evaluating project outcomes critically important

Evaluating the outcomes of completed projects would improve the value of information available to decision makers about new projects and transport investment, increase accountability and give more accurate information to taxpayers about what their money is delivering.

Currently no link between project funding and performance

Currently there is no mechanism in NSW to link funding to project performance for transport projects. Evaluations of the outcomes of completed projects:

- are not typically conducted in NSW
- have no clear guidance or a consistent framework
- are not funded, hence there is no incentive to undertake them as they can be costly and difficult.

To date, the focus with the LPT has been on evaluating patronage levels, travel patterns, passenger perceptions, and service frequency and reliability.

Narrow evaluation of benefits

There has been no focus on evaluating on a consistent basis whether and to what extent the LPT is delivering other anticipated benefits, especially the impact on the local economy; the extent of integration with other public transport; the impact on road congestion or a reduction in pollution or road accidents; and the impact on accessibility or mobility of targeted groups/communities.

These factors are considered at the planning stage, and can be more important than the results of a cost benefit analysis in selecting a transportation project for funding.

We found many of the outcomes predicted in the planning stages are not defined in any measurable way, nor tracked or evaluated.

Evaluations offers many benefits

The LPT is a major public investment. The decision to build it was based on a detailed case that it would provide economic, social and environmental benefits. The public deserves to know the extent to which these benefits have been delivered. After a reasonable period of operation, say five years, the project outcomes should be evaluated. An independent reviewer commissioned by the project proponent (in this case MoT and RTA) would preferably do this. Existing approval conditions for the LPT project require periodic Environmental Impact Audit Reports – these could inform the wider evaluation.

Reasons for this broader evaluation include:

- having sufficient information on benefits delivered for the significant public monies invested in this transitway
- better allocation of limited resources
- improved future planning and decisions regarding other planned transitways
- improved accountability for results in the planning process through better documentation and measurement of the results of projects.

We recommend that this approach become mandatory for all major transport projects. NSW Treasury guidelines for economic appraisals should be revised to explicitly require such post evaluation. The evaluation should be the responsibility of the project proponent, which would need to include the cost of the post evaluation in the original project cost estimate. The review should examine the project outcomes, particularly whether it has delivered the benefits and the value for money originally intended. These reviews should inform future planning and investment decisions about new projects and would strengthen accountability for results.

Recommendations

- The MoT and the RTA should conduct a post evaluation of the LPT project outcomes after five years of full operations, particularly whether it has delivered the benefits and the value for money originally intended.
- The NSW Treasury should make post evaluation of all major transport projects a condition of funding and approval. NSW Treasury guidelines should be revised to explicitly require such post evaluation.

5.3 The future of the LPT contract

Future role of STA in LPT operations undecided

In mid-2005 there were high levels of uncertainty about the future of the contract to operate the LPT, especially regarding the involvement of the STA/WSB. STA management says that, if government policy allows, they would like to continue to operate the LPT. They regard it as a good bus route with plenty of scope for further growth. They have noted that the uncertainty has had a significant impact on staff morale.

The STA/WSB were not invited to become part of the Area Management Company for Region 3. It appears that they were the only bus operator in any Region not invited to join the relevant Area Management Company.

The Ministry of Transport gave us these reasons why they excluded WSB:

"The Ministry did not invite Western Sydney Buses (WSB) to be part of the Region 3 EoI and WSB did not seek to join the lead entity.

This was a policy decision based on the challenges of overlaying an operator such as WSB (with different practices in key areas such as fares, concessions and industrial relations) into an already complex region. It acknowledged the fragmented nature of Region 3, with 5 private operators (one multi-national and four local family businesses), already presenting a consolidation challenge.

The "shuttle" operation of the T-Way demonstrated how the existing fragmentation of the region was already an obstacle to achieving an integrated network that could optimise the efficiency of the T-Way infrastructure. There was no desire to compound this problem."

WSB has incurred high losses (nearly $9 million in three years), yet is likely to be excluded just as the financial performance of the T-Way turns around. It is unlikely to be compensated to cover the loss period if the contract is terminated. The contract specifies that the Director General of the MoT can terminate it in many circumstances, but may not cover a decision to exclude the existing operator from a process of re-tendering. If a termination of the contract is to occur, it is vital that it be done transparently and with accountability. It may have the appearance of "socialising the losses and privatising the profits" of the early years of the LPT operation.

STA unlikely to be compensated for losses if contract is terminated

The bid process was based on competitive neutrality, and adjustments made to compensate for advantages to the STA as a government entity. However, there may be disadvantages too. The STA, as a government operator, can cross-subsidise the operating losses, but it cannot sue the other departments for non-delivery of the infrastructure. On the other and, had the contract been won by a private sector operator, the Government might be liable for a significant compensation claim for losses to date if the contract was re-assigned.

A real positive from the experience with the LPT operations contract has been major improvement in the new bus-contracting regime. The issues and experiences helped shape the development of the provisions of the new contracts. The importance of developing consortiums of private bus operators had also been learnt from the experience of operating the LPT as a trunk-only service with minimal cooperation from the local private operators.

Recommendations

The MoT should:

- clarify the future role of Western Sydney Buses in Region 3
- ensure, once the new contract in region 3 is let to a consortium of operators, early integration of local and trunk services to provide door-to-door public transport services for the benefit of passengers
- consider negotiating a service structure in the new contract areas that uses the LPT as a service "spine" for Region 3.

5.4 The future of Bus Transitways in Sydney

Assessing broader impact in planning transitways important

Assessing broader impacts so as to protect travel times is important in planning future transitways. In particular, they are likely to require "grade separation" at major road intersections – structures to allow the buses to pass under or over the road without stopping at traffic lights.

Broader impacts not fully assessed for LPT

The announcement of the LPT preceded the development of Action for Transport 2010, which was the first document to plan a network of transitways in Western Sydney. This means assessing the impact of future transitways on the LPT would not have been possible then.

All transitway proposals need integrated review

The Metro Strategy should make a strategic assessment of the impact of the other planned transitways. It will be important for the current proposals for bus based public transport in the North-West and South-West land release areas to be subjected to review and detailed planning, as currently proposed by the DoP. If this is not done in sufficient detail in the Metro Strategy, the DoP should conduct a separate review of all transitway proposals.

Lessons learned

There have been various lessons learned from the LPT, including planning, development, design, property acquisition, technologies, traffic issues, design and construction, operations, marketing and community relations and stations. Some of the lessons have been applied to the North-West T-way Network (NWTN): for instance, specifications and contract requirements for the NWTN have been founded on lessons learned in the delivery of the LPT. As the NWTN planning was done largely before the LPT began operations, the route definition phase did not benefit as much from the LPT experience as the detailed design phase – especially the process of designing stations and ensuring their integration with supportive urban development. The NWTN is being delivered as a design, construct and maintain contract, partly as a result of experiences with the form of the LPT contract.

GOOD PRACTICE

The Ministry of Transport advised that its core lessons from the LPT include overall contract design; requirement for a new funding model, specifically supporting start-up services; the need to make greater cooperation between operators a contractual obligation; and the development of contract regions that bring about integrated services.

Recommendation

The MoT should examine whether strategic bus corridors in established areas could be built up to transitway-style corridors over time. This should be done as part of the refining the recommendations of the Unsworth Review.

Recommendation

The DoP should ensure that the current proposals for transitways such as those in the North-West and South-West are subjected to an integrated review and detailed planning, and that this review:

- be undertaken in close consultation with the RTA and the MoT
- include financial modelling of bus operation scenarios
- consider the relative priority of possible transitway routes in the North-West and South-West sectors (among them the Burns Interchange to Castle Hill link of the North-West T-way Network), including the level of investment required to achieve and protect over time desired bus travel speeds.

Appendices

Appendix 1: Responses from Agencies

State Transit Authority

Thank you for your letter of 17 November 2005 providing a copy of the final report of the Performance Audit: Bus Transitways.

I wish to acknowledge the considerable liaison between our offices regarding both the conduct of the audit and the content of the report. State Transit is pleased to note that the Audit Report concludes that overall, the transitway is meeting the performance criteria, customer satisfaction is high, complaints have been minimal & the service has potential for continued strong growth. State Transit agrees with the audit observation that the chances of the transitway becoming a profitable route in the medium term are promising. However, I do not agree with the key findings in the report that relate to State Transit in relation to patronage estimation and documentation.

The audit report does not dispute that estimating patronage potential on new transport infrastructure is notoriously difficult. It is clear that State Transit underestimated the magnitude and duration of the "ramp up" period to achieve full patronage potential. However, it is too early to conclude that the annual patronage used in the State Transit bid was unrealistic. Based on present trends annual patronage could reach 2.8 million in the sixth year of operation, a level that is equivalent to the average patronage on which State Transit's bid was based.

It appears that the Audit Office misunderstood the basis for the high estimate of 4.3 million passengers. Reference to the source document, the Bus Operators Plan Study Report by Sinclair Knight Merz (July 2001) in Table 3.5, shows that the estimated patronage for the 2 hour AM peak in 2001 was 3,610 for transitway buses under Scenario 7. This scenario is the closest comparison to the proposal submitted by State Transit, being a stand-alone trunk service operating at a 10-minute frequency in peaks. Annual patronage for this scenario was estimated to be 4.3 million using the demand expansion factors listed in Table 4.1 of the Bus Operators Plan Study Report.

State Transit was well aware that the DoT and RTA gave no warranty as to the accuracy of patronage estimates in the EIS, and that proponents had to make their own independent estimates. However, given that these estimates had been derived from substantive studies by reputable consultants and formed a significant part of the justification for the Transitway project, patronage estimates derived from information in the EIS documentation could not be ignored or dismissed. With the benefit of hindsight we now know that the EIS estimates are well in excess of patronage that has been achieved to date, but at the time the bids were prepared there was no reason to suspect that the estimates derived from the EIS documentation were so much higher than would be achieved. In addition, it is noted that Scenario 7 produced the lowest estimate for trunk Transitway services modelled by Sinclair Knight Merz.

The moderate estimate of 1.7 million passengers considered by State Transit was based on the patronage achieved by existing services operated by State Transit on ordinary roads without bus priority. Given the very high level of infrastructure development and bus priority for the transitway there were strong reasons to expect that patronage on trunk transitway services would be considerably higher than the moderate estimate of 1.7 million.

Patronage in the third year of operation will be around 1.9 million, and is growing by more than 0.3 million per annum. This level of patronage has been achieved despite delays in completing transitway infrastructure and very significant disruption at Parramatta due to construction of the new transport interchange. In addition, running times for transitway services have been much longer than anticipated when the bid was prepared. Considering that these factors are likely to have diminished patronage growth, State Transit's decision to use a patronage base higher than 1.7 million has been completely vindicated. Furthermore, State Transit's decision to use a patronage base lower than 4.3 million has also been vindicated. Indeed, if State Transit were to operate the trunk Transitway services for the full 8-year contract term average annual patronage may well be closer to 2.8 million than to 1.7 million.

Given that the Audit Office has been provided with documentation to support the low, moderate and high estimates of patronage, together with the documented rationale for adopting a bid basis that was higher than the moderate estimate but lower than the high estimate, I cannot agree with the statement that "the STA has been unable to find any documentation to support the higher patronage assumption". In my view, the mere absence of a mathematical calculation of 2.8 million does not constitute lack of documentation when the parameters that set the framework for the judgement made by State Transit were documented and based on the best information available at the time.

The audit observation that stronger substantiation would have been prudent is acknowledged but this observation provides no guidance on what that stronger substantiation entails. In the limited time available to develop a compliant bid for this contract, State Transit considered a range of estimate scenarios and relied on its extensive experience to settle on a forecast that it felt was achievable.

State Transit does not share the views expressed in the report on the level of documentation compiled by State Transit in support of its bid. The assumptions and forecasts adopted by State Transit were explicitly identified in its tender documentation and would have been available to decision makers in the tender evaluation process. The comments in the last paragraph on page 34 suggesting that stronger substantiation "would have provided greater assurance that a decision to award a major contract to the government bidder was the most appropriate decision" is not consistent with State Transit's role as a bidder seeking to win a competitive tender. State Transit was not involved in the decision making process other than as one of the respondents to the invitation to tender.

State Transit's approach to the bid formulation meant that it was prepared to accept the patronage risk on this new service. The audit report indicates that the private operators bids were passing much of that risk back to government. State Transit is not in a position to comment on what the financial and other impacts on the government might have been had a private operator been awarded the contract on its patronage estimates, and having regard to the range of adverse factors outline in the audit report that affected patronage take up, operating costs and financial viability of the service.

State Transit does document and retain documentation supporting major bidding decisions. This is no more evident than the extensive documentation and financial modeling undertaken in the development of its successful bids for the Contract regions included in the new Metropolitan Bus System Contracts. This extensive process also evidences the Board's involvement in the decision making process supporting the bids and the timely consideration of all the relevant issues in the negotiation of these very large contractual commitments.

I have forwarded documentation to you indicating that all reasonable steps were taken by State Transit management to brief and consult with the Board on the bid in the very short timetable allowed during the preferred tenderer negotiation period.

The Board of State Transit pays very careful attention to all decision making in State Transit and ensures that full advice is provided, including risk profiles and risk management strategies, for all projects and programs as the Audit Office is aware through its ex-officio membership of the Board's Audit Committee.

State Transit does not accept the audit recommendations on page 36, as the Board and management of State Transit already complies with these requirements.

(signed)

Roger Wilson
A/Chief Executive.

Dated: 18 November 2005

Response from Roads and Traffic Authority

Thank you for your letter dated 14 November 2005 (PA6397) forwarding the report of the performance audit on Bus Transitways for agency response.

The Liverpool-Parramatta Transitway (LPT) was a new type of project for NSW and involved new aspects of planning and construction for the RTA. The project was developed as a partnership between the RTA and Ministry of Transport (MoT) following its announcement by Government in 1998. To support this partnership, the two organisations formed a Project Control Group to ensure that the bus operational and infrastructure aspects of the project were coordinated and that the needs of passengers were met.

As found in the audit, LPT trunk services have a high level of support from passengers and this can be related to the differences between the LPT and existing bus services in the provision of high standard passenger facilities, long sections of dedicated operation free of general traffic and regular, reliable, high quality bus services.

It is agreed that there will be value in better defining the expected benefits of projects such as the LPT to ensure that post commissioning analysis can more easily evaluate the success of the project in meeting its objectives.

The RTA provides the following comments regarding implementation of issues relevant to the RTA.

Recommendations

Commit to build projects only after the feasibility study

- *As noted in the report the 2005 State Budget Paper No 4 did not include estimated costs for major projects that are in the planning stage. Early project allocations are generally noted as being for "planning".*

Manage project costs better

- *The current RTA methodology for completion of the EIS process is to ensure that there is early discussion with key stakeholders to front load project development and to identify important areas of risk. This includes more comprehensive consultation processes at all project stages.*
- *The establishment of a Project Management Office within the RTA and the adoption of improved estimating and risk management procedures have improved estimating and project management performance. They have also led to better scope definition for projects. The RTA also uses the concept of outturn dollar estimates to better reflect the anticipated final project costs. LPT costs were announced in dollars of the year of preparation of the estimate, and did not reflect expected cost increases due to inflationary cost movements.*
- *The RTA now carries out a detailed review of both cost and risk profiles for projects as part of the EIS process and will review these aspects following finalisation of the Conditions of Approval when required for major projects. This ensures that major cost and risk impacts can be identified and addressed prior to final commitment to the project. This could lead to review of project scope and priority.*
- *The RTA will work with DoP and MoT to identify ways of staging delivery of any future Transitways to match residential and employment growth and the resulting patronage demand. Integrated construction packages (as currently in use on the North-West T-way) will also be considered for future works.*

Reduce cost of building Transitways and other transport projects

- *The RTA will review its property acquisition processes with a view of identifying opportunities to provide greater certainty over property acquisition costs. This review will be carried out in the light of current legislation and acquisition practice. Should opportunities be identified they will be used to prepare a proposal for change to the Minister for Commerce.*

Maximise the potential use of Transitways

- *There will be further work carried out to examine ways to reduce running time on the LPT. It is noted that when the RTA's Public Transport Information and Priority System (PTIPS) is implemented for the Strategic Bus Corridors across Sydney, it will also be implemented on the LPT. This will change the nature of priority given to LPT services from that available at each intersection as the bus approaches to one that depends on the performance of the bus in relation to its timetable. A bus running behind timetable will receive priority through a sequence of intersections, whereas one running ahead of or on timetable will not receive priority. This system allows greater certainty of buses running to timetable compared to the present system which, on occasions, results in buses getting ahead of timetable and having to wait at stations to get back on time. The development of PTIPS has involved close cooperation with MoT and this will continue through the implementation stages.*

  There will also be cooperation given to MoT and the operators of trunk or integrated services in identifying affordable improvements that will assist on-time running of services both in the short and longer term.

  The RTA is presently in the early stages of developing and implementing low cost improvements on Strategic Bus Corridors across Sydney to achieve a target bus average travel speed and improved reliability of timetable performance. These works will be complemented by the introduction of PTIPS on the network. The types of works on Strategic Corridors could be regarded as a precursor to more extensive works delivered as bus frequency increases.

Evaluate the benefits of Transitways

- *The RTA with the MoT will carry out the five year post evaluation of the LPT and during this process ensure that a set of measurable outcomes is developed and for use in future similar public transport projects.*

Audit findings

- *The first estimate for the LPT prepared by the RTA was $198M in 1998 dollars (not outturn) and in retrospect, did not allow sufficient contingency to cover the level of uncertainty over the scope of the project, key risks or areas of uncertainty that existed in the project. The project was significantly different from the RTA's traditional projects and greater allowance should have been made for areas of activity in which the RTA did not have substantial experience.*
- *The risk of major change of scope and resulting project cost increase will be reduced through application of the current estimating and risk identification methodology adopted by the RTA. The expertise of the Project Management Office will also assist in ensuring adoption of more rigorous project management methodology at all stages of major projects. It is noted that these best practice techniques cannot retrospectively improve the accuracy of earlier project estimates.*
- *The RTA is currently reviewing its project approval process and this will include a review of the estimate at each stage in a project's development.*

I would like to thank the audit team for their consultative approach to the audit.

(signed)

Mike Hannon
Acting Chief Executive

Dated: 21 November 2005

Response from Ministry of Transport

The Liverpool-Parramatta Transitway (LPT) is a key part of Sydney's public transport infrastructure. It provides a valuable service to a large area of Western Sydney and is the principal form of transport to thousands of commuters everyday.

The LPT has now been integrated into the broader framework of strategic bus corridors for Sydney that are designed to provide fast, frequent and reliable services for the travelling public. The original concept of seven transit ways has been broadened to a network of over 40 strategic bus corridors that form a central part of the Government's overall bus reform program for metropolitan Sydney. The early patronage results of the LPT auger well for the overall effectiveness of this program.

The enduring legacy of the LPT will go well beyond the original eight year contract with Western Sydney Buses (WSB). The LPT is now the central strategic bus route in the newly established Region 3, and a fully integrated network with both feeder and trunk services throughout the Region will see significant patronage growth for a number of years to come. Planning has already commenced for the better utilisation of the LPT to ensure its continued growth and fulfilment of the Government's bus reform agenda in this Region.

The Ministry of Transport has noted the Audit Report's recommendations and is pleased to report that action is well advanced on a number of these, particularly as they pertain to the future operation of the LPT. The report's assessment of the cost estimation process is noted, however it should be emphasised that the Ministry of Transport is no longer responsible for the planning or development of infrastructure. This responsibility was passed to the Department of Infrastructure, Planning and Natural Resources (DIPNR) when the Ministry of Transport was established in 2003. This notwithstanding, it is understood that the then Department of Transport developed the original estimates for the LPT based on the relevant information available at that time, however it should be noted they were without the benefit of the full costings that became available later as the project developed.

The Ministry of Transport would also like to draw the reader's attention to the performance of WSB since the opening of the LPT. As is highlighted in the report, patronage growth has been substantial (over 60% over the past two years), and the shift from private transport to these bus services has been unprecedented in recent times. These outcomes reflect the professionalism and commitment of the operator.

While the report raises concerns regarding the overall value of the project, the Ministry of Transport believes that the fully integrated nature of the services that will be introduced on the LPT in the near term will help realise the economic and social benefits contemplated as part of this project. This should be achieved through increased patronage and greater service capacity along this corridor.

In relation to the recommendations pertaining to the Ministry of Transport, the following is provided:

The Ministers for Roads, Transport, and Planning only announce the specific cost and timing of major transport projects once reasonably firm information is available

The Ministry of Transport will continue to provide full and detailed information in relation to transport projects and policy in accordance with its roles and responsibilities. The decision for the public release of information pertaining to transport projects is a matter for Cabinet.

The Budget Committee initially fund only feasibility studies of major projects, as a basis for subsequent decisions whether to proceed or not

The decisions in relation to the funding of projects of this nature are a matter for Budget Committee. As stated above, the Ministry of Transport will continue to provide detailed information, as appropriate, for transport projects to assist Government in its funding decision making process.

The Ministry of Transport seek to amend the legislation governing light rail requirements for Transitways

The Ministry of Transport does not agree with this recommendation. The issue of the future of light rail in Sydney is the subject of a separate strategic planning process.

The Ministry of Transport clarify the future role of WSB in LPT operations

The process for the future operation of the LPT is currently being negotiated with STA and the Area Management Company for Region 3. These negotiations will be concluded in the near future and submitted for consideration and approval by the Ministry.

The RTA and Ministry of Transport, in consultation with the Department of Planning, review ways to reduce travel times on the LPT

The Ministry of Transport will review this matter with all of the relevant stakeholders when it undertakes the Integrated Network Planning process for Region 3. This will include a complete assessment of the services that will operate on the LPT, and make provision for the full integration of feeder and trunk services. The Ministry of Transport will also be assessing the improvements in travel times arising out of the completion of all infrastructure projects currently impacting on the LPT, particularly the Parramatta Transport Interchange.

The Ministry of Transport ensure that the transitway services integrate with other bus services from commencement of operation

This has already been taken into consideration in the opening of the North West Transitway which will form a key part of Metropolitan Bus Regions 1 and 4. A fully integrated service is planned to operate on this transitway from commencement of operation.

The Ministry of Transport integrate local and trunk services as the new contract is finalised for the region which encompasses the LPT.

The contract for this region has now been finalised and as stated above, planning is currently underway to meet this recommendation.

The Ministry of Transport examine whether strategies bus corridors could be built up to transitway style corridors over time

As outlined above, the government's bus reform program includes the establishment of over 40 strategic bus corridors in the metropolitan area. These corridors have been identified to receive an additional $90 million in the next three years towards bus priority. In addition, the program includes the introduction of bus priority measures for traffic signalling and related management systems that will result in improved reliability for bus services.

The Ministry of Transport and RTA conduct a post evaluation of the LPT project outcomes after five years of operation

This recommendation is agreed and discussions have commenced with the RTA on this matter.

(signed)

Peter Scarlett
Acting Director General

Dated: 21 November 2005

Response from the Department of Planning

I refer to your letter of 14 November 2005 concerning the final Performance Audit Report on Bus Transitways. Thank you for the opportunity to respond to the Report.

The Department of Planning supports the recommendations of the final Performance Audit Report. I wish to advise that the Department will adopt the following recommendation in relation to any proposed transitways that are within its jurisdiction:

> *"We recommend that ... DoP subject all current proposals for transitways to integrated review and detailed planning".*

It should be noted, however, that the proposed bus transit corridors in the North West and South West Sectors relate to the work of the Growth Centres Commission, not the Department of Planning. The Growth Centres Commission is responsible for facilitating the release of land and the planning and implementation of the requisite infrastructure.

(signed)

Sam Haddad
Director General

Dated: 22 November 2005

Response from Treasury

Thank you for the opportunity to comment on the above audit.

Recent revisions to Procurement Policy have resulted in an improvement in the appraisal of all new capital works. Under the new policy, small agencies are able to obtain from Treasury funding for project feasibility studies and business cases.

The new Procurement Policy facilitates independent "Gateway Reviews" of projects at various stages of development, including a mandatory business case review and an optional Post Implementation review. Current Guidelines for Economic Appraisal also state that "all projects of a size greater than $10 million should be the subject of a (post project) review", and guidelines for Post Implementation Reviews are given in Treasury's Total Asset Management Policy.

In light of the Auditor-General's comments concerning the Transitway contract, Treasury will advise Government on options to strengthen the guidelines for post project evaluations.

(signed)

M Ronsisvalle
for Secretary

Dated: 22 November 2005

Appendix 2: About the audit

Objective

To examine whether the Liverpool to Parramatta Transitway (LPT) is being used as originally envisaged and factors for success and issues requiring careful management in planning future transitways.

Audit criteria

We reviewed whether:

- the forecast demand for LPT services is on track to be met
- the desired quality of the LPT (in both infrastructure and service provision) has been achieved
- relevant agencies have taken steps to achieve the planned integration and usage of bus services
- the impact of additional bus transitways (especially the NW T-Way Network) on the LPT were adequately identified in the planning phase
- the buses are operating at a reasonable carrying capacity
- the LPT meets customer needs in terms of satisfactory reductions in travel time, accessibility, reliability, affordability, etc
- the LPT infrastructure is starting to encourage changes in land use planning, and urban and social development
- the LPT operations are reaching planned financial outcomes
- the relevant lessons from the Liverpool to Parramatta Transitway are being applied to the North-West T-way Network.

Audit approach

We acquired subject matter expertise through:

- interviewing staff of MoT, STA, RTA, DIPNR and Treasury responsible for aspects of the planning, approval, construction, operations and management of the LPT
- discussions with relevant key stakeholders, including community and business representative groups
- review of relevant laws, and government and best practice guidelines
- examination of relevant planning and performance reporting documents
- analysis of performance information
- comparisons where appropriate with other states and countries, including a visit in June 2005 to inspect Queensland's Busways
- an external subject matter expert, Dr Rolf Bergmaier.

Acknowledgements

We thank all those who shared their expertise with us, including bus operators, local government representatives, people from community organisations, and academics. The Queensland Audit Office and Queensland Transport kindly facilitated our visit to the growing system of busways in Brisbane. We gratefully acknowledge the cooperation and assistance provided by representatives of the RTA, MoT, DoP, STA and WSB. In particular we thank our principal liaison officer Steve Warrell of the RTA who assisted in providing relevant material in a timely manner and in reviewing our draft report.

Audit cost

Including printing and overheads, the estimated cost of the audit is $392,000.

Audit team

Our team leader for this performance audit was Henriette Zeitoun, assisted by Rod Plant. Sean Crumlin provided direction and quality assurance.

Appendix 3: Glossary

BCA	Bus and Coach Association
CNG	Compressed Natural Gas
DoP	Department of Planning
DoT	Department of Transport
EIS	Environmental Impact Statement
EoI	Expressions of Interest
GPS	Global Positioning System
ITS	Intelligent Transport System
LPT	Liverpool to Parramatta Transitway
MoT	Ministry of Transport
MSL	Minimum Service Levels
NWTN	North-West T-Way Network
PMO	Project Management Office
PTIPS	Public Transport Information and Priority System
RTA	Roads and Traffic Authority
RTBU	Rail, Tram and Bus Union
STA	State Transit Authority
WSB	Western Sydney Buses

Performance Audits by the Audit Office of New South Wales

Performance Auditing

What are performance audits?

Performance audits are reviews designed to determine how efficiently and effectively an agency is carrying out its functions.

Performance audits may review a government program, all or part of a government agency or consider particular issues which affect the whole public sector.

Where appropriate, performance audits make recommendations for improvements relating to those functions.

Why do we conduct performance audits?

Performance audits provide independent assurance to Parliament and the public that government funds are being spent efficiently and effectively, and in accordance with the law.

They seek to improve the efficiency and effectiveness of government agencies and ensure that the community receives value for money from government services.

Performance audits also assist the accountability process by holding agencies accountable for their performance.

What is the legislative basis for Performance Audits?

The legislative basis for performance audits is contained within the *Public Finance and Audit Act 1983, Part 3 Division 2A,* (the Act) which differentiates such work from the Office's financial statements audit function.

Performance audits are not entitled to question the merits of policy objectives of the Government.

Who conducts performance audits?

Performance audits are conducted by specialist performance auditors who are drawn from a wide range of professional disciplines.

How do we choose our topics?
Topics for performance audits are chosen from a variety of sources including:

- our own research on emerging issues
- suggestions from Parliamentarians, agency Chief Executive Officers (CEO) and members of the public
- complaints about waste of public money
- referrals from Parliament.

Each potential audit topic is considered and evaluated in terms of possible benefits including cost savings, impact and improvements in public administration.

The Audit Office has no jurisdiction over local government and cannot review issues relating to council activities.

If you wish to find out what performance audits are currently in progress just visit our website at www.audit.nsw.gov.au.

How do we conduct performance audits?

Performance audits are conducted in compliance with relevant Australian standards for performance auditing and operate under a quality management system certified under international quality standard ISO 9001.

Our policy is to conduct these audits on a "no surprise" basis.

Operational managers, and where necessary executive officers, are informed of the progress with the audit on a continuous basis.

What are the phases in performance auditing?

Performance audits have three key phases: planning, fieldwork and report writing.

During the planning phase, the audit team will develop audit criteria and define the audit field work.

At the completion of field work an exit interview is held with agency management to discuss all significant matters arising out of the audit. The basis for the exit interview is generally a draft performance audit report.

The exit interview serves to ensure that facts presented in the report are accurate and that recommendations are appropriate. Following the exit interview, a formal draft report is provided to the CEO for comment. The relevant Minister is also provided with a copy of the draft report. The final report, which is tabled in Parliament, includes any comment made by the CEO on the conclusion and the recommendations of the audit.

Depending on the scope of an audit, performance audits can take from several months to a year to complete.

Copies of our performance audit reports can be obtained from our website or by contacting our Office Services Manager.

How do we measure an agency's performance?

During the planning stage of an audit the team develops the audit criteria. These are standards of performance against which an agency is assessed. Criteria may be based on government targets or benchmarks, comparative data, published guidelines, agencies corporate objectives or examples of best practice.

Performance audits look at:

- processes
- results
- costs
- due process and accountability.

Do we check to see if recommendations have been implemented?

Every few years we conduct a follow-up audit of past performance audit reports. These follow-up audits look at the extent to which recommendations have been implemented and whether problems have been addressed.

The Public Accounts Committee (PAC) may also conduct reviews or hold inquiries into matters raised in performance audit reports. Agencies are also required to report actions taken against each recommendation in their annual report.

To assist agencies to monitor and report on the implementation of recommendations, the Audit Office has prepared a Guide for that purpose. The Guide, *Monitoring and Reporting on Performance Audits Recommendations,* is on the Internet at www.audit.nsw.gov.au/guides-bp/bpglist.htm

Who audits the auditors?

Our performance audits are subject to internal and external quality reviews against relevant Australian and international standards. This includes ongoing independent certification of our ISO 9001 quality management system.

The PAC is also responsible for overseeing the activities of the Audit Office and conducts reviews of our operations every three years.

Who pays for performance audits?

No fee is charged for performance audits. Our performance audit services are funded by the NSW Parliament and from internal sources.

For further information relating to performance auditing contact:

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Performance Audit
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Performance Audit Reports

No	Agency or Issues Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
78	State Rail Authority (CityRail) State Transit Authority	*Fare Evasion on Public Transport*	6 December 2000
79	TAFE NSW	*Review of Administration*	6 February 2001
80	Ambulance Service of New South Wales	*Readiness to Respond*	7 March 2001
81	Department of Housing	*Maintenance of Public Housing*	11 April 2001
82	Environment Protection Authority	*Controlling and Reducing Pollution from Industry*	18 April 2001
83	Department of Corrective Services	*NSW Correctional Industries*	13 June 2001
84	Follow-up of Performance Audits	*Police Response to Calls for Assistance* *The Levying and Collection of Land Tax* *Coordination of Bushfire Fighting Activities*	20 June 2001
85*	Internal Financial Reporting	*Internal Financial Reporting including a Better Practice Guide*	27 June 2001
86	Follow-up of Performance Audits	*The School Accountability and Improvement Model (May 1999)* *The Management of Court Waiting Times (September 1999)*	14 September 2001
87	E-government	*Use of the Internet and Related Technologies to Improve Public Sector Performance*	19 September 2001
88*	E-government	*e-ready, e-steady, e-government: e-government readiness assessment guide*	19 September 2001
89	Intellectual Property	*Management of Intellectual Property*	17 October 2001
90*	Intellectual Property	*Better Practice Guide Management of Intellectual Property*	17 October 2001
91	University of New South Wales	*Educational Testing Centre*	21 November 2001
92	Department of Urban Affairs and Planning	*Environmental Impact Assessment of Major Projects*	28 November 2001
93	Department of Information Technology and Management	*Government Property Register*	31 January 2002
94	State Debt Recovery Office	*Collecting Outstanding Fines and Penalties*	17 April 2002
95	Roads and Traffic Authority	*Managing Environmental Issues*	29 April 2002
96	NSW Agriculture	*Managing Animal Disease Emergencies*	8 May 2002
97	State Transit Authority Department of Transport	*Bus Maintenance and Bus Contracts*	29 May 2002
98	Risk Management	*Managing Risk in the NSW Public Sector*	19 June 2002
99	E-Government	*User-friendliness of Websites*	26 June 2002

No	Agency or Issues Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
100	NSW Police Department of Corrective Services	*Managing Sick Leave*	23 July 2002
101	Department of Land and Water Conservation	*Regulating the Clearing of Native Vegetation*	20 August 2002
102	E-government	*Electronic Procurement of Hospital Supplies*	25 September 2002
103	NSW Public Sector	*Outsourcing Information Technology*	23 October 2002
104	Ministry for the Arts Department of Community Services Department of Sport and Recreation	*Managing Grants*	4 December 2002
105	Department of Health Including Area Health Services and Hospitals	*Managing Hospital Waste*	10 December 2002
106	State Rail Authority	*CityRail Passenger Security*	12 February 2003
107	NSW Agriculture	*Implementing the Ovine Johne's Disease Program*	26 February 2003
108	Department of Sustainable Natural Resources Environment Protection Authority	*Protecting Our Rivers*	7 May 2003
109	Department of Education and Training	*Managing Teacher Performance*	14 May 2003
110	NSW Police	*The Police Assistance Line*	5 June 2003
111	E-Government	*Roads and Traffic Authority Delivering Services Online*	11 June 2003
112	State Rail Authority	*The Millennium Train Project*	17 June 2003
113	Sydney Water Corporation	*Northside Storage Tunnel Project*	24 July 2003
114	Ministry of Transport Premier's Department Department of Education and Training	*Freedom of Information*	28 August 2003
115	NSW Police NSW Roads and Traffic Authority	*Dealing with Unlicensed and Unregistered Driving*	4 September 2003
116	NSW Department of Health	*Waiting Times for Elective Surgery in Public Hospitals*	18 September 2003
117	Follow-up of Performance Audits	*Complaints and Review Processes (September 1999)* *Provision of Industry Assistance (December 1998)*	24 September 2003
118	Judging Performance from Annual Reports	*Review of Eight Agencies' Annual Reports*	1 October 2003
119	Asset Disposal	*Disposal of Sydney Harbour Foreshore Land*	26 November 2003

No	Agency or Issues Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
120	Follow-up of Performance Audits NSW Police	*Enforcement of Street Parking (1999)* *Staff Rostering, Tasking and Allocation (2000)*	10 December 2003
121	Department of Health NSW Ambulance Service	*Code Red:* *Hospital Emergency Departments*	15 December 2003
122	Follow-up of Performance Audit	*Controlling and Reducing Pollution from Industry (April 2001)*	12 May 2004
123	National Parks and Wildlife Service	*Managing Natural and Cultural Heritage in Parks and Reserves*	16 June 2004
124	Fleet Management	*Meeting Business Needs*	30 June 2004
125	Department of Health NSW Ambulance Service	*Transporting and Treating Emergency Patients*	28 July 2004
126	Department of Education and Training	*School Annual Reports*	15 September 2004
127	Department of Ageing, Disability and Home Care	*Home Care Service*	13 October 2004
128*	Department of Commerce	*Shared Corporate Services: Realising the Benefit* *including guidance on better practice*	3 November 2004
129	Follow-up of Performance Audit	*Environmental Impact Assessment of Major Projects (2001)*	1 February 2005
130*	Fraud Control	*Current Progress and Future Directions* *including guidance on better practice*	9 February 2005
131	Follow-up of Performance Audit Department of Housing	*Maintenance of Public Housing (2001)*	2 March 2005
132	Follow-up of Performance Audit State Debt Recovery Office	*Collecting Outstanding Fines and Penalties (2002)*	17 March 2005
133	Follow-up of Performance Audit Premier's Department	*Management of Intellectual Property (2001)*	30 March 2005
134	Department of Environment and Conservation	*Managing Air Quality*	6 April 2005
135	Department of Infrastructure, Planning and Natural Resources Sydney Water Corporation Sydney Catchment Authority	*Planning for Sydney's Water Needs*	4 May 2005
136	Department of Health	*Emergency Mental Health Services*	26 May 2005
137	Department of Community Services	*Helpline*	1 June 2005
138	Follow-up of Performance Audit State Transit Authority Ministry of Transport	*Bus Maintenance and Bus Contracts (2002)*	14 June 2005
139	RailCorp NSW	*Coping with Disruptions to CityRail Passenger Services*	22 June 2005

No	Agency or Issues Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
140	State Rescue Board of New South Wales	*Coordination of Rescue Services*	20 July 2005
141	State Budget	*In-year Monitoring of the State Budget*	28 July 2005
142	Department of Juvenile Justice	*Managing and Measuring Success*	14 September 2005
143	Asset Management	*Implementing Asset Management Reforms*	12 October 2005
144	NSW Treasury	*Oversight of State Owned Electricity Corporations*	19 October 2005
145	Follow-up of 2002 Performance Audit	*Purchasing Hospital Supplies*	23 November 2005
146	Bus Transitways	*Liverpool to Parramatta Bus Transitway*	December 2005

* Better Practice Guides

Performance audits on our website

A list of performance audits tabled or published since March 1997, as well as those currently in progress, can be found on our website www.audit.nsw.gov.au.

If you have any problems accessing these reports, or are seeking older reports, please contact our Office Services Manager on (02) 9275 7116.