

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

2. Your submission states that the Transport Construction Authority manages optimism bias 'through a rigorous process of development and review' of project estimates. You mention external review as one example of this. What other examples of this process can you provide?

Response

Transport Projects Division (TPD), and its predecessor Transport Construction Authority (TCA), implements a number of measures to ensure rigor of estimates, to address potential optimism bias and to avoid overly conservative estimates. In addition to the reviews undertaken by external experts, these include:

1. Reviews by in-house experts:

Transport Projects Division (TPD) has a number of in-house senior staff who are experts in engineering, project management, cost planning and quantity surveying, with particular experience in rail costing.

Project cost estimates prepared by external cost planners are reviewed by TPD's senior management at key stages in their preparation before being used as the basis of cost estimates for project funding approvals. Provisions for progressive submissions of estimates are detailed in the tenders and contracts awarded to service providers.

TPD holds risk assessment, staging and planning workshops with external cost planners to ensure accurate risk estimates and contingency allocation are included in estimates.

Internal TPD positions involved in this process include:

- A Risk Manager who provides expert advice and direction to project teams on contingency allocation. The current manager is an engineer with over 20 years experience in risk management, risk engineering and workshop facilitation.
- A Cost Planner who ensures that best-practice estimating is undertaken by TPD and its contractors/consultants. The current planner is a Quantity Surveyor, a Fellow of the Royal Institution of Chartered Surveyors and has over seventeen years experience in cost management, planning and estimating with particular expertise in rail and infrastructure.

- Executive Program Directors (EPDs) are appointed to each TPD program to ensure appropriate expertise is in place to undertake cost estimates and provide cost advice throughout project lifecycle. All EPDs are qualified Engineers and Project Managers:
 - The EPD for the Rail Clearways Program and Auburn Stabling project has more than 25 years experience in the rail industry, and has worked on the KCRC Mainline Ballast Replacement Project and North End Tie-in in Hong Kong and several major rail projects in NSW.
 - The South West Rail Link EPD has more than 16 years experience in the construction and rail sector on projects such as the Chatswood Transport Interchange, Epping to Chatswood Rail Link and Transport for London's Jubilee Line Extension.
 - The EPD for the Northern Sydney Freight Corridor and Wynyard Walk Programs has more than 25 years experience in infrastructure, managing projects including the Epping to Chatswood Rail Link, M4 motorway, the Hume Highway deviation through the Tarcutta Range and the Sydney 2000 Olympics urban domain project.
- A Director Project Development who has 20 years rail industry experience and has been involved in development and appraisals of major projects including the Northern Sydney Freight Corridor, Sydney's Airport Rail Line, East Hills Line Amplification, Very Fast Train, Ardglan Tunnel and Jerry's Plains Rail Spur.
- A Technical Director Commercial, responsible for providing commercial services across all TPD projects. The current director has ten years experience in professional risk management and is one of the pioneers of the previous AS4360 Risk Standard. He has qualifications in civil engineering and has been an estimator for 3 years in infrastructure.
- A Technical Director Engineering Services, responsible for providing engineering services to ensure the delivery of project designs that meet time, costs, safety and quality standards. The current director has more than 30 years rail industry experience involving infrastructure, rolling stock and operations; and has been involved in projects such as the Epping to Chatswood Rail Link, New Metropolitan Railway (Perth), Regional Fast Rail (Victoria), Sydney Light Rail Project and the Bondi Rail Link.

2. Internal benchmarking

Benchmarking is useful in early phases of projects when there is limited information available on which to base estimates. TPD undertakes benchmarking of current estimates against actual costs of similar historic projects.

3. Alliance cost estimates

TPD conducts detailed establishment audits on the financial and management accounts of the two the shortlisted tenderers. Alliance cost estimates are then reviewed to ensure they are consistent with the findings of the establishment audits.

4. Cost Estimating Centre

TPD recently established a Cost Estimating Centre to provide accurate and robust estimating input to NSW government funded transport projects. Key activities include:

- Reviewing and benchmarking cost estimates
- Contingency modelling
- Reviewing and maintaining Cost/Work Breakdown Structures to support estimating methodologies and review Requests for Proposals, tender schedules, project scheduling, accounting systems, databases and external consultants' estimates
- Undertaking cost analyses, maintaining cost databases and cost data libraries
- Managing stakeholders engaged in cost estimating for TPD's projects.

5. Estimating Standard

TPD is developing an Estimating Standard for its projects based on best practice methodologies in the 2008 Federal Best Practice Standard and tailored to suit the particular circumstances of TPD.



Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

3. Is Transport for NSW's staff time factored into project costs? For example, for the NWRL \$8 billion cost?

Response

Yes.



Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

4. What is your internal process for conducting reviews of cost estimates?

Response

Transport Projects Division (TPD) has a number of in-house senior professionals who are experts in engineering, project management, cost planning and quantity surveying, with particular experience in rail costing.

Project cost estimates prepared by external cost planners are reviewed by TPD's senior management at key stages in their preparation before being used as the basis of cost estimates for project funding approvals. TPD also holds risk assessment, staging and planning workshops with external cost planners to ensure accurate risk estimates and contingency allocation are included in estimates.

As part of the review process, TPD undertakes benchmarking of current estimates against actual costs of similar historic projects.

Review of Alliances' cost estimates is undertaken as part of the tender selection process. TPD conducts detailed establishment audits on the financial and management accounts of the two the shortlisted tenderers. Alliance cost estimates are then reviewed to ensure they are consistent with the findings of the establishment audits.

TPD has also established a Cost Estimating Centre to provide accurate and robust estimating input to NSW government funded transport projects. Key activities include:

- Reviewing and benchmarking cost estimates
- Contingency modelling
- Reviewing and maintaining Cost/Work Breakdown Structures to support estimating methodologies and review Request for Proposals, tender schedules, project scheduling, accounting systems, databases and external consultants' estimates
- Undertaking cost analyses, maintaining cost databases and cost data libraries
- Managing stakeholders engaged in cost estimating for TPD's projects.



Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

5. Is contingency applied to concept development? If so, how much and at what stage?

Response

Transport Projects Division (TPD) projects go through four phases: identification, scoping, development and delivery. TPD prepares 'strategic estimates' for rail project costs at the identification phase and 'concept estimates' at the scoping phase.

Project estimates must include an allowance for uncertainty and risk, referred to as a contingency allowance or simply 'contingency'.

Estimates prepared at different phases of the project lifecycle will have different levels of knowledge and certainty of the scope and therefore different levels of uncertainty and risk. Determination of the appropriate amount of contingency therefore depends on the phase of the project lifecycle.

TPD's approach to project estimating, including application of contingency, is consistent with the approach suggested by the Federal Department of Infrastructure and Transport.



Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

6. Given that the South West Rail Link has not yet been completed, how much has been spent to date?

Response

The incurred cost on the South West Rail Link Program to 30 November 2011 is \$512.8 million.



Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

7. Could the committee please be provided with detailed cost breakdowns for each of the announcements for the costs of the South West Rail Link. That is, following the announcement in 2004 that the project would cost \$688m, following the announcement in 2008 that the project would cost \$1.36b and following the announcement in 2010 that it would cost \$2.1b.

Response

In 2004, the then NSW Government announced that it would spend \$688 million for the Glenfield to Leppington rail line component of South West Rail Link.

Transport for NSW was not directly involved with this estimate and is not aware of how it was determined.

In 2008, the former Transport Infrastructure Development Corporation (TIDC) undertook a cost estimate for South West Rail Link which incorporated escalation (referred to as an 'outturn' cost) and a wider scope of works including upgrade of Glenfield Station and transport interchange, addition of Glenfield multi storey car park and Rossmore stabling.

The estimated outturn cost for the project was approximately \$1.36 billion, broken down as follows:

Development phase	\$6,005,352
Including:	
Project management	
Preliminary design	
Detailed design	
Property acquisition	\$2,142,249
Delivery phase client costs	\$185,022,657
Including:	
Project management	
Contract administration	
Insurances, fees, levies	
Integrated test and commission	
Possession and bussing	
Contractor's direct and indirect costs	\$717,674,405
Including:	
Environmental works	
Noise barriers	
Car parking	
Landscaping, urban design and	

fencing
Stations, buildings and facilities
Overhead wiring
Rail communications
Power supply and distribution
Supplementary items
Preliminaries and supervision
Offsite overheads and margin

Client supplied materials or services	\$34,550,640
Contingency	\$129,204,697
Escalation	\$290,400,000
TOTAL	\$1,365,000,000

These costs were reflected in the 2008/09 NSW Budget Papers.

In late 2008, the Government undertook a review of capital works projects in light of the economic circumstances facing the state, and determined to deliver South West Rail Link in two stages.

Stage 1 involved delivery of the Glenfield Transport Interchange with additional works at Glenfield Junction, Airport Line power upgrade and Auburn Stabling projects; while Stage 2 involved delivery of the Glenfield to Leppington rail line.

In respect of the announcement in 2010, construction and tendering for the project is ongoing and therefore the breakdown of the budget is commercial in confidence.



Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

8. How much was the final cost of the North Sydney station upgrade?

Response

The forecast final cost of the North Sydney station upgrade project is \$85,783,607.



Date: 13/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

9. Can you please provide a detailed breakdown of the cost components of this project (North Sydney Station upgrade)?

Response

The forecast outturn cost of the project is \$85,783,607. A break down of this cost is provided below. The categories provided are provided along those categories as suggested in the work breakdown structure defined in the 2008 *Best Practice Cost Estimation for Publically Funded Road and Rail Construction*.

Development phase	\$5,230,655
Including:	
Project management	
Preliminary design	
Detailed design	
Property acquisition	\$2,752,382
Delivery phase client costs	\$10,131,784
Including:	
Project management	
Contract administration	
Insurances, fees, levies	
Integrated test and commission	
Possession and bussing	
Contractor's direct costs	\$42,700,874
Including:	
Environmental works	
Noise barriers	
Car parking	
Landscaping, urban design and fencing	
Stations, buildings and facilities	
Overhead wiring	
Rail communications	
Power supply and distribution	
Supplementary items	
Contractor's indirect costs	\$24,406,843
Including:	
Preliminaries and supervision	
Offsite overheads and margin	
Client supplied materials or services	\$561,069
TOTAL	\$85,783,607

CLock

Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

**GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011**

Supplementary Questions on Notice –

10. Can you please provide a breakdown of the amounts paid to each consultancy and Contractors and what these consultancies and contracts were for?

Response

A number of contractors were engaged on the North Sydney Station upgrade project, with fees as small as several hundred dollars.

The following table details only those engagements where the fee exceeded \$15,000 and predominately captures construction and project management services.

CONTRACTOR		DETAILS OF SERVICE
Deloitte Touche Tohmatsu	\$18,094	Tender Assessment Probitity Audit
PointBlanc	\$18,660	Commercial Assistance
BlueField Consulting	\$22,000	Comparative risk assessment
Hyder Consulting	\$23,478	Peer Review
Halcrow Pacific	\$24,130	Provision of timetable advice for works
KPMG Corp Finance (Aust)	\$24,500	Financial Audit of Managing Contractor
Beaumont Consulting	\$24,636	
Lane & Lane Lawyers	\$25,443	Property Legal advice
PowerEarth Technologies	\$25,855	Peer Review of HV Earthing Design
J M W Consultants Australia	\$27,000	Relationship Workshop
Construction & Contract Services	\$35,238	Audit of Variation Management Process
Davis Langdon Australia	\$43,335	BCA Certifier
Aecom Australia	\$45,020	Construction phasing
Clayton Utz	\$69,727	Legal Advice
Australian Quality Assurance & Superintendence	\$107,208	Environment Management Representative
Tenix Projects	\$123,462	Contract Administration and compliance audit
Degotardi, Smith & Partners	\$145,845	Surveying services
Manidis Roberts	\$195,623	Environmental Assessment
Rider Levett Bucknall NSW	\$212,955	Cost Planning
McLachlan Lister	\$384,040	Design Managers
Evans and Peck	\$736,108	Commercial assistance, vesting and management support
The Cox Group	\$1,201,660	Architectural Services
Maunsell Australia	\$4,689,565	Engineering design
M. & K Napier Constructions	\$70,430	Minor Construction works
Civil Constructions	\$250,000	Construction of Staff Car Park Extension
Liftronic	\$561,069	Supply and Installation of Lifts
Silver Raven	\$1,790,266	Existing Concourse slab remediation
RailCorp	\$2,876,824	Interface and rail systems works
Bovis Lend Lease	\$62,893,696	Managing Contractor
TOTAL:	\$76,665,867	

Chris Lock

Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

11. Does it concern you that in the 10 years between the construction of Airport Line and the latest estimate for the North West Rail Line, the cost of tunnelled rail would appear to have escalated from \$100m / km to around \$450m?

a) Can you give a detailed explanation of how the costs more than quadrupled in 10 years?

Response

11 – 11(a)

The cost of tunnelled rail has not quadrupled over the past 10 years.

Chris Lock

Date:

18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

12. Can you please provide the updated modelling of the cost of the Epping to Parramatta rail link, as reported on page 7 of the Australian newspaper on 23 November 2011?

Response

The Parramatta to Epping Rail Link (PERL) is a proposed rail line between Parramatta and Epping via an upgraded Carlingford Line and two sections of new tunnel.

In 2010, PERL was estimated at \$2.6billion in dollars of the day. Since this time further scoping and feasibility studies have been undertaken.

The current project estimate is \$4.38billion and is an outturn cost.

This updated estimate includes a number of project elements not included in the 2010 estimate such as:

- Renewal of existing surface level track
- Stabling
- Rolling stock
- Escalation



Date: 13/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

13. Would the government please provide the Committee with the cost estimates for the options for adding capacity to the CityRail network as outlined in the SMH article by Jacob Saulwick 'Plenty of sums in rail plans but not everything adds up' on 7 November 2011. These include cost estimates reports by six consultants including:

- a. Halcrow,
- b. LEK and
- c. PWC.

Response

In 2011 Transport for NSW (formerly the Department for Transport) engaged Halcrow to undertake cost estimates for a number of options to meet the objectives of its Long Term Rail strategy.

This information is cabinet-in-confidence as work continues to be undertaken to investigate the feasibility of these options.



Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

14. Would the government please provide the Committee with all cost estimates it has before it for the duplication of the Port Botany goods line.

Response

The Port Botany and Sydney Airport Transport Improvement Plan seeks to develop road and rail options for the efficient and effective movement of freight and people to and from the Port Botany and Sydney Airport. It seeks to address the immediate and longer-term infrastructure challenges faced by this important precinct.

On 11 November 2011, the NSW Government made a submission to Infrastructure Australia, seeking funding for the Port Botany and Sydney Airport Transport Improvement Plan.

As detailed in the submission to Infrastructure Australia, funding of \$28 million was sought from the Australian Government, supplemented by \$7 million in State funding. Together, the funding would be used to undertake planning, economic assessment, engineering, community consultation, options assessment, design and environmental analysis.

Outcomes of this analysis are needed to establish and develop an appropriate response to the transport challenges in the precinct and to then develop detailed mode specific road and rail improvement plans; and would be used to develop cost estimates for further stages of delivery of the Plan.



Date:



Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

Supplementary Questions on Notice –

15. Would the government please also provide the Committee with its working documents to come to conclusion that a feasibility study into the Port Botany Goods line would cost \$30million as referred in its recent Infrastructure Australia submission.

Response

The Port Botany and Sydney Airport Transport Improvement Plan seeks to develop road and rail options for the efficient and effective movement of freight and people to and from the Port Botany and Sydney Airport. It seeks to address the immediate and longer-term infrastructure challenges faced by this important precinct.

On 11 November 2011, the NSW Government made a submission to Infrastructure Australia, seeking funding for the Port Botany and Sydney Airport Transport Improvement Plan.

Funding of \$28 million was sought from the Australian Government, to be supplemented by \$7 million in State funding. Together, the funding would be used to undertake planning, economic assessment, engineering, community consultation, options assessment, design and environmental analysis.



Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

On 21 November 2011, the Hon. Cate Faehrmann asked –
16. Have you ever put something to Treasury and Treasury has added costs
onto it?

Response

No.



Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales

GENERAL PURPOSE STANDING COMMITTEE NO. 3
INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NSW
21 November 2011

On 21 November 2011, the Hon Natasha Maclaren-Jones asked –
17. How many contractors are operating in New South Wales? And of those, how many have common shareholders?

Response

There are thousands of registered contractors operating in NSW, ranging in size.

All businesses registered as construction contractors must be granted an ABN by the Department of Fair Trading NSW. The Department maintains a database of all registered construction contractors, information about which is available on the Department's website.

The Australian Constructors Association represents 19 of Australia's leading construction contracting organisations that operate globally:

- Abigroup Limited
- Boulderstone Pty Ltd
- BGC Contracting Pty Ltd
- Lend Lease Pty Ltd
- Brookfield Multiplex Limited
- CH2M Hill Australia Pty Ltd
- Clough Limited
- Downer EDI Limited
- Fulton Hogan Pty Ltd
- Georgiou Group Pty Ltd
- John Holland Group Pty Ltd
- Laing O'Rourke Australia Construction Pty Ltd
- Leighton Contractors Pty Ltd
- Leighton Holdings Limited
- Macmahon Holdings Limited
- McConnell Dowell Corporation Limited
- Thiess Pty Ltd
- UGL Limited
- WATPAC Limited

A number of these 19 organisations have common shareholders:

- Abigroup Limited and Boulderstone are part of the Lend Lease group
- Leighton Holdings owns John Holland Group, Leighton Contractors and Thiess and is a shareholder of Macmahon Holdings
- Additionally Downer EDI, Lend Lease and Clough have a number of common investment shareholders

Ownership of construction companies often changes. The Australian Securities and Investment Commission (ASIC) reporting service aims to ensure that companies meet their obligations under the Corporations Act 2001. ASIC provides search capability to enable the identification of related entities.

CDLock

Date: 18/1/12

Chris Lock, Deputy Director General, Transport Projects Division
Transport for New South Wales