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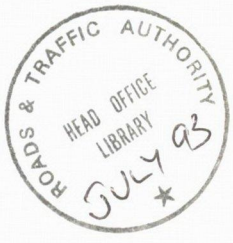
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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

IN RELATION TO

PROPOSAL FOR A NORTH WEST TRANSPORT LINK

DATED: 19 May 1993

PREPARED UNDER SUPERVISION OF:

Annette C Ross
Environmental Manager,
Sydney Region

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

IN RELATION TO

PROPOSAL FOR A NORTH WEST TRANSPORT LINK

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PART 1

INTRODUCTION

1.1 This Assessment Report concerns the proposal for a North West Transport Link in a corridor between Old Windsor Road at West Baulkham Hills and Epping Road at North Ryde ("the Proposed Link").

1.2 This Assessment Report:

(a) aims to ensure that any decision by the RTA in relation to the Proposed Link complies with the requirements of Part V of the Environmental Planning and Assessment Act 1979 ("the EPA Act").

(b) makes recommendations in relation to that decision.

1.3 This Assessment Report considers jointly:

(a) the environmental impact statement prepared for the RTA by Maunsell Pty Limited ("the Eastern EIS");

(b) the environmental impact statement prepared for the RTA by Manidis Roberts Consultants Pty Limited ("the Western EIS")

The Eastern EIS and the Western EIS are together referred to in this Assessment Report as "the 1992 EIS".

1.4 This Assessment Report has eight parts:

Part 1 contains this introduction.

Part 2 describes the events which have led to this Assessment Report. Those events commenced in 1989 with the publication of an environmental impact statement for a proposed four-lane freeway (known as the Castlereagh Freeway), and the holding of a Commission of Inquiry into that proposal.

Part 3 reviews all those events against the requirements of the EPA Act in order to assess whether those requirements have been met. Part 3 also summarises the requirements which remain to be met before the RTA can make a decision in respect of the Proposed Link.

Parts 4, 5, 6 and 7 are in fulfilment of those remaining requirements. Part 4 contains an examination of the environmental impact statement prepared in 1992 in relation to the Proposed Link. Parts 5 and 6 contain an examination of the representations made to that environmental impact statement. Part 7 contains an examination of the factors in clause 56 of the Environmental Planning and Assessment Regulation 1980 ("the EPA Regulation").

Part 8 contains findings and recommendations concerning the Proposed Link in light of the matters examined in Parts 4, 5, 6 and 7.

1.5 This Assessment Report recommends that the Proposed Link should be constructed and operated as described in paragraph 3.1 of Part 8 of this Assessment Report subject to paragraphs 4 to 17 of Part 8 of this Assessment Report. The plans contained in Appendix 47 identify this proposal.

PART 2

COURSE OF EVENTS LEADING TO THIS ASSESSMENT REPORT

1. 1989 Proposal, 1989 Environmental Impact Statement and 1989-1990 Commission of Inquiry

Introduction

1.1 Between 6 June 1989 and 21 July 1989, the RTA exhibited, pursuant to section 113(3) of the EPA Act, an environmental impact statement ("the 1989 EIS") in respect of a proposed four-lane freeway (known as the Castlereagh Freeway) 11.5 km in length from Pennant Hills Road Carlingford to the Lane Cove River at North Ryde ("the 1989 Proposal")[1]. 2714 written representations were received in response to the 1989 EIS.

1.2 On 22 August 1989 the then Minister for Planning directed an inquiry be held into the 1989 Proposal in accordance with Section 119 of the EPA Act. The Minister appointed Commissioner John Woodward, Commissioner of Inquiry for Environment and Planning, to constitute the Commission of Inquiry. The Minister also appointed Mr J Warren to assist Commissioner Woodward[2].

1.3 Hearings for the Commission of Inquiry commenced on 24 October 1989 and finished on 19 April 1990. The Inquiry sat for 33 hearing days.

1.4 The Commission received 829 written submissions from 301 parties, such as the RTA, State Government Departments, local councils, members of Parliament, other bodies (including local interest groups and the NRMA) and individuals. 52 experts from a range of disciplines presented evidence to the Inquiry. The last submission accepted by the Inquiry was received on 18 June 1990.

Findings of Commission of Inquiry

1.5 The Commissioner of Inquiry reported to the Minister for Planning pursuant to section 119(6) of the EPA Act in July 1990 in a document entitled "A Proposed Expressway from Pennant Hills Road, Beecroft to Pittwater Road, Ryde known as the F2 Stage 1" (the "Commissioner's Report") and dated July 1990[3].

1.6 The Commissioner's Report's principal findings were that the 1989 Proposal should not be constructed, and that an upgrading of the existing east-west road system between Pennant Hills Road and Epping Road near the (former) Channel 10 site (together with

---

1 A copy of the 1989 EIS is contained in Exhibit 1 to this Assessment Report.

2 A copy of the Minister's direction appointing the inquiry is contained in Appendix 1 to this Assessment Report.

3 A copy of the Commissioner's Report is contained in Exhibit 2 to this Assessment Report. A summary of the findings in the Commissioner's Report is contained in the Eastern EIS at pp.3 (central and right columns) to 4 (left and central columns).

other measures, including improvements in public transport during peak periods) should be implemented as a matter of high priority.

In particular, the Commissioner's Report found that:

(a) traffic congestion on the existing road system during peak periods is already severe and requires amelioration;

(b) the existing road system works relatively well outside peak periods and could be improved by alternative upgrade works;

(c) the principal cause of peak hour traffic congestion is the high volume of commuters using private cars for journeys to and from work, and the low levels of service of public transport;

(d) the environmental impacts of the 1989 Proposal would be severe, and would include a sudden and substantial increase in noise levels (particularly at night), significant visual impacts, loss of residential aminity and a permanent degradation of the present high residential qualities and general tranquility of the area, loss of urban bushland, and a decline in air quality in residential precincts to levels comparable with other busy main arterial roads.

1.7 The Commissioner's Report states[4] that its findings apply only to the 1989 Proposal and "should not be taken in any way to be a judgment on the construction of a roadway west of Pennant Hills Road".

1.8 The recommendations of the Commissioner's Report were that the existing road system should be upgraded. The Commissioner's Report recommended that, without delay, a by-pass should be constructed to link Carlingford Road to Epping Road, and Epping Road should be widened to 6 lanes throughout it's whole length. (Subject to a feasibility study, the Commissioner's Report favoured a tunnel under Pembroke Street linking Carlingford and Epping Roads). Relatedly, the Commissioner's Report recommended widening of Carlingford Road, the construction of an interchange at Pennant Hills Road, and improvements to intersections on Epping Road.

The Commissioner's Report also recommended that urgent improvements be made to public transport in peak periods, and that a public transport study of the region should be carried out as a matter of priority.

The Commissioner's Report also recommended the undertaking of a review of future urban growth and associated transport and traffic demands in the region. The Commissioner's Report recommended that that review should be based on up-to-date origin and destination surveys, a realistic appraisal of growth in the North West Sector, an examination of practical measures to restrain eastward commuter movements from the West and North West by private cars in peak periods (including controls on commuter car-parking facilities at the major commercial centres at Chatswood, North Sydney and the CBD), and measures to encourage more commuters towards Parramatta and Blacktown.

---

4 Commissioner's Report p 62

The Commissioner's Report also recommended that the existing road reservation be retained for 10 years.

The Commissioner's Report also contains recommendations addressed to the possibility that the 1989 Proposal is built. It recommends as follows:

(a) There should be a bushland management programme within and adjacent to the proposed roadway[5].

(b) Further flood level analyses should be undertaken before any further design work is undertaken[6].

(c) The adequacy and performance of sedimentation basins during the construction phase should be closely assessed and monitored by the SPCC, now the New South Wales Environment Protection Authority ("the EPA"), and RTA[7].

(d) The EPA should monitor dust and smoke pollution during the construction phase in accordance with certain specified control measures[8].

(e) There should be regular monitoring of the air quality along the route of the expressway near residences[9].

(f) There should be full-time monitoring of the construction phase by the EPA (supported by the RTA environmental officer and a community liaison group) with a community "hotline" contact[10].

(g) There should be specified variations to the proposed route[11].

(h) New classrooms should be constructed at Epping Heights Public School, and should be refurbished to EPA noise requirements[12].

(i) An independent person should be appointed to seek resolution of disputes regarding the acquisition of property in certain circumstances[13].

---

5 Commissioner's Report p. 112 at paragraph 6.

6 Commissioner's Report p. 117.

7 Commissioner's Report p. 117.

8 Commissioner's Report p.128.

9 Commissioner's Report p. 129.

10 Commissioner's Report p. 235.

11 Commissioner's Report pp. 190 and 262-263.

12 Commissioner's Report p.262.

13 Commissioner's Report p.233.

Ministerial Advice in Relation to the Commission of Inquiry

1.9 On 17 August 1990, the then Minister for Planning wrote to the RTA[14] stating that:

> "The Commissioner makes the recommendation that the proposal will not proceed at this time and that alternative roadworks should be undertaken. The Commissioner also recommends that the freeway reservation should be retained and the proposal be reviewed in the future."

The Minister for Planning stated as well that:

> "The Commissioner's findings and recommendations raise a number of issues which in my opinion warrant further examination prior to a final decision being made on the proposal. In particular, those issues which I consider warrant examination are:
>
> (i) traffic projections upon which the proposal was based;
>
> (ii) population growth predictions used in justification of the proposals;
>
> (iii) the costing of the proposal;
>
> (iv) the feasibility and costing of the alternative road proposals recommended by the Commissioner; and
>
> (v) the potential effectiveness of alternative proposals recommended by the Commissioner."

1.10 On 7 March 1991, the RTA wrote to the Director of Planning[15] conveying the RTA's understanding that the Minister for Planning's letter of 17 August 1990 was not intended to be an advice for the purposes of section 114(a) of the EPA Act, and requesting the Minister to give advice (if it was the Minister's intention to do so). No such advice has been received to the date of this Assessment Report.

2. 1992 Environmental Impact Statement

General

Announcement of Preparation of 1992 Environmental Impact Statement

2.1 On 13 September 1990, the Minister for Roads announced the preparation of an environmental impact statement relating to a transport link for Sydney's North West Region ("the 1992 EIS").

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[14] A copy of the Minister for Planning's letter is contained in Appendix 2 to this Assessment Report. See also Eastern EIS p.4 (right column).

[15] A copy of the RTA's letter is contained in Appendix 3 to this Assessment Report.

The full text of the ministerial announcement is as follows:

"Deputy Premier and Minister for Roads, Wal Murray, announced the commencement of a major Environmental Impact Statement (EIS) to find solutions for the rapidly growing transport needs of the North Western Metropolitan area. The EIS will determine what measures are needed to provide a balanced transport strategy" Mr Murray said. "Roads are already badly congested and the continued growth in Hornsby and Baulkham Hills and the opening-up of the North West sector as a major residential area, will place enormous demands on the transport system servicing these areas" Mr Murray said. "For example, it is anticipated the North West sector will have a population of 250,000 people - the size of Canberra - within 20 years. The decision to conduct the EIS was prompted by the findings of the Commission into the Castlereagh Freeway. The Commission rejected the F2 Castlereagh Freeway as proposed by the Roads and Traffic Authority. The Commission of Inquiry suggested other options should be considered such as improvements in public transport, a tunnel by-pass of Epping Railway overbridge and upgrading of existing roads. Importantly, the Commission of Inquiry was clear that its findings did not affect the planned development of the Castlereagh Freeway west of Pennant Hills Road. Since then, Hornsby, Baulkham Hills, Parramatta and Hawkesbury Councils have expressed opposition to the Epping Tunnel proposal and called on the State Government to construct an "environmentally sympathetic" Castlereagh Freeway. The EIS will closely examine all of these comments. The EIS will look at the Commission of Inquiry proposal for a tunnel by-pass of Epping which includes upgrading of Carlingford and Epping Roads. The Environmental Planning and Assessment Act requires the alternatives to this proposal should be addressed. Other options to be addressed include use of existing Castlereagh Freeway corridor from North Ryde to Pennant Hills Road, development of public transport services and the potential use of Crimea Road as the link to Epping Road. The EIS will examine transport options for the area west of Pennant Hills Road through to Old Windsor Road. This section will provide essential infrastructure to cater for the population growth expected in the north west sector. During the EIS there will be the widest possible community consultation" Mr Murray said.

Appointment of Consultants for Preparation of 1992 Environmental Impact Statement

2.2 To prepare the 1992 EIS, the RTA appointed Maunsell Pty Limited ("Maunsell"), and the Snowy Mountains Engineering Corporation Limited ("SMEC") in association with Manidis Roberts Pty Limited ("Manidis Roberts"). Both appointments occurred following a process of competitive tender.

2.3 The steps leading to the two appointments were as follows:

Prior to the announcement of the 1992 EIS, in July 1989, the RTA had accepted a tender from SMEC to act in association with Manidis Roberts as project manager in the preparation of an environmental impact statement for a proposed road from Pennant Hills Road to Old Windsor Road. That proposed road had been declared in February 1989 to be part of National Arterial Route 2.

Following the announcement of the 1992 EIS, the RTA commenced the preparation of a comprehensive environmental impact statement in relation to the transport needs of the corridor between Lane Cove River and Old Windsor Road. As part of this process:

(a) the RTA invited SMEC to submit a proposal for an environmental impact statement relating to that part of the corridor between Pennant Hills Road and Old Windsor Road; and

(b) the RTA invited Maunsell and others to submit a proposal for an environmental impact statement relating to that part of the corridor between Pennant Hills Road and Lane Cove River.

In October 1990, SMEC submitted its proposal, again in association with Manidis Roberts. The RTA accepted that proposal in November 1990[16].

Also in October 1990, Maunsell submitted its proposal. The RTA accepted that proposal in October 1990[17].

Coordination of Consultants during Preparation of 1992 Environmental Impact Statement

2.4 SMEC's proposal to the RTA[18] was aimed at ensuring integration of that part of the 1992 EIS being prepared by Manidis Roberts under SMEC's supervision ("the Western EIS") with that part of the 1992 EIS being prepared by Maunsell ("the Eastern EIS"). Similarly, the RTA's brief to Maunsell[19] required close cooperation between Maunsell and SMEC[20].

Consideration of Findings in Commissioner's Report during Preparation of 1992 Environmental Impact Statement

2.5 The RTA's brief to Maunsell[21] required consideration of the findings in the Commissioner's Report. Similarly, the proposal which the RTA accepted from SMEC[22] entailed consideration of the findings in the Commissioner's Report.

An index of the major issues considered, and a summary of the findings, in the Commissioner's Report was prepared and distributed by Maunsell to its subconsultants in the preparation of the Eastern EIS, and copies of the submissions to the Commission of Inquiry were inspected by Maunsell and subconsultants to Maunsell[23]. Similarly, the

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16 The terms of SMEC's and Manidis Roberts' appointment are reproduced in Exhibit 3 to this Assessment Report.

17 The terms of Maunsell's appointment are reproduced in Appendix 2 to the Eastern EIS.

18 A copy of SMEC's letter to the RTA dated 3 October 1990 setting out the proposal is contained in Appendix 4 to this Assessment Report.

19 See Appendix 2 to the Eastern EIS.

20 The Eastern EIS at p.9, and the Western EIS at p.10, describe the level of co-ordination in the preparation of the Eastern and the Western EIS.

21 See Appendix 2 to the Eastern EIS.

22 A copy of SMEC's proposal to the RTA dated 3 October 1990 is contained in Appendix 4 to this Assessment Report.

23 See Eastern EIS pp. 3 (central and right columns), 4 (left and central columns) and Appendix 8 to the Eastern EIS. A summary of the matters arising from the Commission of Inquiry and their consideration by the subconsultants is included in Appendix 8 to the Eastern EIS.

index and summary were distributed by Manidis Roberts to its subconsultants in the preparation of the Western EIS, and copies of the submissions were inspected[24].

Also, the Eastern EIS and the Western EIS were prepared to evaluate the issues raised by the Minister for Planning in his letter to the RTA dated 17 August 1990[25].

Consultation with Director of Planning during Preparation of 1992 Environmental Impact Statement

2.6 Consultations concerning the 1992 EIS were held on several occasions between personnel of the RTA and the Department of Planning.

In addition, Maunsell and Manidis Roberts offered to consult with the Director of Planning. On 1 May 1991 and 5 June 1991 respectively, Manidis Roberts[26] and Maunsell[27] wrote to the Director of Planning offering to consult with the Director of Planning.

Requirements of Director of Planning for Preparation of 1992 Environmental Impact Statement

2.7 On 21 October 1990, the RTA wrote to the Director of Planning requesting advice of the Director's requirements in relation to the 1992 EIS[28].

The Director of Planning advised her requirements in two letters dated 10 January 1991[29].

On 7 March 1991, the RTA wrote to the Director of Planning to confirm matters discussed with her in regard to interpretation of her requirements[30].

On 8 May 1991, the Director of Planning replied to the RTA's letter confirming the acceptability to Department of Planning of the interpretation of her requirements set out in the RTA's letter[31].

Consideration of Overseas EISs and Other Studies during Preparation of 1992 Environmental Impact Statement

2.8 In preparing the 1992 EIS, Maunsell and Manidis Roberts reviewed a range of recent local and overseas environmental impact statements for transport proposals[32].

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24 See Western EIS pp.6-9 and 12.

25 See paragraph 1.9 of Part 2 of this Assessment Report, and Eastern EIS p5.

26 A copy of Manidis Roberts' letter of 1 May 1991 is contained in Appendix 5 to this Assessment Report.

27 A copy of Maunsell's letter of 5 June 1991 is contained in Appendix 6 to this Assessment Report.

28 A copy of the RTA's letter of 21 October 1990 is contained in Appendix 7 to this Assessment Report.

29 Copies of these letters are contained in Appendix 1.1 to the Eastern EIS and Appendix A to the Western EIS.

30 A copy of the RTA's letter is contained in Appendix 1.1 to the Eastern EIS and Appendix A to the Western EIS.

31 A copy of the Director of Planning's letter is contained in Appendix 8 to this Assessment Report.

The Proposal and the Proponent

Approach taken to Identification of Proposal

2.9 As a result of the correspondence between the RTA and the Director of Planning referred to in paragraph 2.7 above, the approach taken to the development and consideration of options for the Eastern EIS was as follows[33]:

(a) Several options were developed and considered towards the recommendation of one option.

(b) The options were developed and considered within the context of a study of the transport needs of the North West Transport Region[34].

(c) The options were developed in conjunction with an extensive process of public consultation[35].

2.10 Following this process, two options remained for further consideration[36]:

(a) an option involving the upgrading of Pennant Hills Road, Carlingford Road and Epping Road[37]; and

(b) an expressway and busway option[38].

The 1989 Proposal was not among the options remaining for further consideration.

The remaining options were subjected to detailed examination and comparison[39] resulting in the selection of the expressway and busway option as the preferred option[40].

2.11 Similarly, the approach taken to the development and consideration of options for the Western EIS was as follows[41]:

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32 See Eastern EIS p.6 (right column). See Western EIS p.12. A list of the materials reviewed is contained in Appendix 9 to this Assessment Report.

33 The approach to the development and consideration of options for the Eastern EIS is summarised on pp.8-9 and in Appendix 6 of the Eastern EIS.

34 See Eastern EIS Chapters 1 and 5. The North West Transport Region is identified in the diagram attached to the RTA's letter to the Director of Planning dated 9 March 1991: see Appendix 10 to this Assessment Report. The Region is also identified in Figure 1.4 of the Eastern EIS. Figure 1.4 of the Eastern EIS locates the North West Transport Region within the larger Sydney metropolitan region.

35 The process of public consultation undertaken in relation to the Eastern EIS prior to its publication is summarised on pp.10-13 and in Appendices 5.1 and 5.2 of the Eastern EIS.

36 See Eastern EIS pp.63-65.

37 This option is described in the Eastern EIS at p. 61 (left and central columns).

38 The expressway and busway option is described in the Eastern EIS at pp. 61 (right column) to 62 (left column), and at pp. 72-79, and in the figures and diagrams reproduced there. See also Figure A7 of the Eastern EIS (pp. A27-A29).

39 See Eastern EIS pp.66-111.

40 See Eastern EIS p.113.

(a) Several options were developed and considered towards the recommendation of one option.

(b) The options were developed and considered within the context of a study of the transport needs of the North West Transport Region[42].

(c) The options were developed in conjunction with an extensive process of public consultation[43].

2.12 Following this process, two options remained for further consideration. Both options involved an expressway and busway.

In the first option[44], the expressway and busway continue to Pennant Hills Road and beyond.

In the second option[45], the expressway and busway do not continue beyond Pennant Hills Road. Instead, the busway is routed along Barclay Road and North Rocks Road to Pennant Hills Road, and the expressway ends at Pennant Hills Road. Pennant Hills Road is upgraded from that point to Carlingford Road. Carlingford Road is upgraded along its length. This option reflects the recommendations of the 1989-1990 Commission of Inquiry.

These options were subjected to detailed examination and comparison[46] resulting in the selection of the first option as the preferred option[47].

2.13 The two processes referred to in paragraphs 2.9-2.10 and 2.11-2.12 above were conducted in close liaison between Maunsell and Manidis Roberts[48].

As mentioned at paragraph 2.4 above, the terms of SMEC's and Maunsell's appointment were aimed at ensuring integration in the preparation of the Eastern EIS and the Western EIS. During the preparation of the Eastern EIS and the Western EIS, 10 meetings between Maunsell personnel and Manidis Roberts personnel were held at which (among other things) the development of options was considered.

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41 The approach taken to the development and consideration of options for the Western EIS is summarised on pp (iv)-(vii) and 12 of the Western EIS.

42 See Western EIS Chapters 1 and 3. The North West Transport Region is identified in the diagram attached to the RTA's letter to the Director of Planning dated 9 March 1991: see Appendix 10 to this Assessment Report. The Region is also identified in Figure 1 of the Western EIS.

43 The process of public consultation undertaken in relation to the Western EIS prior to its publication is summarised on pp.12-17 of the Western EIS.

44 This option is described in the Western EIS at p. 103 and in Chapter 8. See also Figures 28.1-28.9 of the Western EIS.

45 This option is described in the Western EIS at p. 103 and in Chapter 9. See also Figures 29.1-29.3 and 30.1-30.3 of the Western EIS.

46 See Western EIS Parts D, E and F.

47 See Western EIS pp. (i), (xxxiii), 11 and 367.

48 See Eastern EIS p. 9 (right column).

Description of the 1992 Proposal

2.14 The proposal which emerged as a result of the process described in paragraphs 2.9-2.13 above ("the 1992 Proposal") is as follows:

(a) It is proposed to construct an expressway from the Lane Cove River to Old Windsor Road.

(b) The expressway would, with some lateral deviations at certain points along the route, be located within the existing road reservation.

(c) The expressway would cross on bridges over Devlin's and Terry's Creeks and, between the Main Northern Railway line and the proposed bridge over Terry's Creek, the expressway would pass through a tunnel. The expressway would also cross on bridges over Darling Mills Creek and pass through parts of the Darling Mills State Forest. Two variations are proposed for the route through Devlin's Creek[49]. Two variations are proposed for the route near Mahers Road and Pennant Hills Golf Course[50]. Four variations are proposed for the route through Darling Mills State Forest[51].

(d) The expressway would be approximately 30m wide and would consist of four traffic lanes (two in each direction) and two breakdown lanes (one in each direction). The breakdown lanes would be available for use by bicycles.

(e) As well, two busway lanes (one in each direction) would be located in the centre of the expressway between Beecroft Road and Old Windsor Road. The busway would leave the expressway where the expressway meets Beecroft Road, and would lead via Beecroft Road to a bus interchange at Epping Station[52]. The busway would be constructed so as to allow its conversion to use as a light railway.

(f) Grade-separated interchanges would be built at the following locations along the route[53].

(1) Delhi Road;
(2) Lane Cove Road;
(3) Balaclava Road;
(4) Beecroft Road;
(5) Pennant Hills Road; and
(6) Windsor Road.

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49 See Eastern EIS p75 (left column) and Figures 9.25-28 and 9.42.

50 See Eastern EIS p.74 and Figures 9.25, 9.27 and 9.29.

51 See Western EIS Chapter 27.

52 See Eastern EIS pp79 (left column) to 83 (right column).

53 See Eastern EIS Figures 9.35, 9.33, 9.29 and 9.27, and Western EIS Figures 27.4, 27.5, 27.9 and 27.10.

(g) Toll plazas would be constructed and operated between Culloden and Balaclava Roads[54], and on the eastbound off-load and the westbound on-load ramps at Pennant Hills Road[55].

The Proponent

2.15 The RTA is the proponent of the 1992 Proposal within the meaning of the EPA Act[56].

Exhibition of 1992 EIS

2.16 The following documents constitute the 1992 EIS:

(a) "North West Transport Links East Environmental Impact Statement prepared for The Roads and Traffic Authority of NSW Sydney Western Region by Maunsell Pty Limited April 1992".

A copy of this document is contained in Exhibit 4 to this Assessment Report.

(b) "Environmental Impact Statement North West Transport Link Pennant Hills Road to Old Windsor Road Prepared in Sydney by Manidis Roberts Consultants and Snowy Mountains Engineering Corporation Limited on behalf of the NSW Roads and Traffic Authority".

A copy of this document is contained in Exhibit 5 to this Assessment Report.

2.17 The following working papers ("the Working Papers") were prepared for the 1992 EIS[57], and copies of them are contained in Exhibits 6 to 38 respectively to this Assessment Report:

(a) For the Eastern EIS:

(1) "Aboriginal Heritage Archaeology" by Haglund & Associates.

(2) "Air Quality Assessment" by Peter W Stephenson & Associates.

(3) "Community Consultation Program" by Issues Australia Pty Limited.

(4) "Engineering Design" by Maunsell.

(5) "European Heritage Survey" by Conybeare Morrison & Partners.

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54 See Eastern EIS Figure 9.32, and page 78.

55 See Western EIS Figures 27.8 and 27.9, and Addendum paragraph 4.1 and Figures 2 and 3, and 5 and 6.

56 See Eastern EIS p. (xiv) (left column).

57 See Eastern EIS p. 7.

(6) "Flora and Fauna Evaluation: Bushland Effect and Management" by Mount King Ecological Surveys.

(7) "Hazard and Risk Assessment" by RiskCorp Australia.

(8) "Landscape and Visual Impact" by Bruce MacKenzie and Associates Pty Limited.

(9) "Noise Assessment" by Challis and Associates Pty Limited.

(10) "Social Impact Assessment" by Caroline Stone, Phillip Fox.

(11) "Transport and Traffic Analysis" (in 5 volumes) by Denis Johnston & Associates Pty Limited.

(12) "Transport Options: Analysis of Community Voice Feedback Form No. 2" by Quantum Market Research.

(13) "Water Catchment and Soil Management" by R W Roberts & Associates.

(b) For the Western EIS:

(1) "Air Quality" by Stephenson & Associates.

(2) "Assessment of Aboriginal Heritage Aspects" by Haglund, L.

(3) "Civil Engineering" by Snowy Mountains Engineering Corporation Limited.

(4) "Community Consultation" by Manidis Roberts Consultants.

(5) "Dispersion of Emissions: Toll Plaza" by Stephenson & Associates.

(6) "Existing Traffic Conditions" by Denis Johnston and Associates with Stapleton and Hallum.

(7) "Feasibility of Utilising the Castlereagh Expressway Reservation for Public Transport Services" by Denis Johnston and Associates.

(8) "Flora and Fauna Evaluation" by Mount King Ecological Surveys.

(9) "Hazard & Risk Study of Dangerous Goods Transportation" by Riskcorp Australia.

(10) "Land Use and Community Impact" by Manidis Roberts Consultants.

(11) "Landscape & Visual Impact" by Bruce Mackenzie & Associates.

(12) "Noise Investigation" by Wilkinson Murray Griffiths.

(13) "Noise Investigation: Assessment of Tollway" by Wilkinson Murray Griffiths.

(14) "Public Transport: Existing Conditions Report" by Denis Johnston and Associates.

(15) "Public Transport Options Investigation" by Denis Johnston and Associates.

(16) "Soil Erosion and Sedimentation Issues" by Rod Roberts & Associates.

(17) "Traffic Analysis of Toll Options" by Denis Johnston and Associates.

(18) "Transport and Traffic Analysis" by Denis Johnston and Associates.

(c) For both the Eastern and Western EISs:

(1) "Economic Evaluation" by Applied Economics Pty Limited and Manidis Roberts Consultants.

(2) "Metropolitan Strategy Assessment" By MSJ Keys Young Planners Pty Limited.

The subconsultants who produced reports for both the Eastern EIS and for the Western EIS[58] were Haglund[59], Peter W Stephenson & Associates[60], Mount King Ecological Surveys[61], RiskCorp Australia[62], Bruce MacKenzie and Associates Pty Limited[63], Denis Johnston & Associates Pty Limited[64], Applied Economics Pty Limited and Manidis Roberts[65], and MSJ Keys Young Planners Pty Limited[66].

2.18 Appendix 11 contains a summary of the dates of publication of notices for the 1992 EIS, and Appendix 12 contains copies of the notices published.

2.19 Appendix 13 contains a summary of:

(a) the locations at which the 1992 EIS was available for inspection; and

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58 See Eastern EIS p. 9 (right column).

59 Exhibits 6 and 20.

60 Exhibits 7, 19 and 23.

61 Exhibits 11 and 26.

62 Exhibits 12 and 27

63 Exhibits 13 and 29.

64 Exhibits 16 and 36.

65 Exhibit 37.

66 Exhibit 38.

(b) the locations at which display materials relating to the Eastern EIS[67] and the Western EIS[68] were on view.

2.20 At the locations marked "#" in Appendix 13:

(a) the Eastern EIS and the Western EIS were each available for sale at a cost of $20.00;

(b) the documents referred to in paragraph 2.17 were available for sale at a cost of $10.00 each; and

(c) the following materials were available without charge:

(1) brochure entitled "North West Transport Link Lane Cove River to Old Windsor Road Manidis Roberts Consultants Snowy Mountains Engineering Corporation Ltd Maunsell Pty Limited";

(2) brochure entitled "North West Transport Links (East) Environmental Impact Statement Summary Prepared for the Roads and Traffic Authority of NSW Sydney Western Region by Maunsell Pty Limited April 1992";

(3) brochure entitled "Environmental Impact Statement Summary North West Transport Link Pennant Hills Road to Old Windsor Road Roads and Traffic Authority Manidis Roberts Consultants Snowy Mountains Engineering Corporation Ltd 1992".

Copies of the documents referred to in (c) are contained in Exhibits 39 to 41 respectively to this Assessment Report.

2.21 The following additional steps were taken to exhibit the 1992 EIS:

(a) A copy of the brochure entitled "Environmental Impact Statement Summary North West Transport Link Pennant Hills Road to Old Windsor Road Roads and

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67 The display material for the Eastern EIS consisted of the following: a 1.25m x 0.85m display panel containing a summary of the need for transport improvements, a description of the process of evaluation of alternatives, an aerial photo-montage of the two eastern preferred alternatives, and a description of the recommended alternative; a 1.25m x 0.85m display panel containing photo-montages of various elements of the two eastern preferred alternatives, a description of the variations considered in the Eastern EIS to the alignment in Devlin's Creek, and a description of the Epping Interchange; a 1.25m x 0.85m display panel containing a description of the approach taken in the Eastern EIS to primary environmental concerns; a 1.25m x 0.85m display panel containing a description of the environmental impact assessment process and a photo-montage of an alternative involving the upgrading of Epping Road, a tunnel under North Epping, and an expressway within the reservation west of Beecroft Road. The Eastern EIS notes (at page 65) that "there has been some community support for this option" and that "illustrative information" would be made available in the public exhibition period "to allow public recommendation of the judgement that this option not proceed".

68 The display material for the Western EIS consisted of the following: a 1.25m x 0.85m display panel containing an aerial photo-montage of the two western preferred alternatives, and photo-montages of various elements of the two western preferred alternatives; a 1.25m x 0.85m display panel containing further photo-montages of various elements of the two western preferred alternatives, and summaries of the principal matters described in the Western EIS; a 0.42m x 0.30m display panel containing an aerial photo-montage of 4 route variations through Darling Mills State Forest.

Traffic Authority Manidis Roberts Consultants Snowy Mountains Engineering Corporation Ltd 1992" was distributed to the letterbox of each property within and immediately adjacent to the existing road reservation.

(b) A total of 18 walks were conducted along the routes of the two selected options on 8 Saturdays during May, June and July 1992. The numbers taking part varied on the different occasions but, on average, 50 people participated in each walk. Each walk was conducted by an information team comprising RTA representatives (whose roles included receiving, and (where appropriate) subsequently responding to, comments made by participants during the inspection), a representative of Maunsell or Manidis Roberts or SMEC, and an RTA surveyor. Each walk commenced with a 15-20 minute introduction by an RTA representative to the matters set out in paragraphs 1.1 to 2.15 above. As well, the processes of impact assessment under the EPA Act, and the likely timing for decision-making and (if there was a decision to construct) construction of the Proposed Link, were described.

(c) Public meetings were convened by the RTA on 27 May 1992 in the Parramatta Riverside Theatre and in the Ryde Civic Hall on 11 June 1992.

(d) Copies of the 1992 EIS and the Working Papers:

(1) were placed in the various public libraries[69];

(2) were loaned by the RTA free of charge; and

(3) were sent by the RTA, to various governmental departments and bodies[70].

(e) Three Community Consultative Committee meetings were held[71].

(f) On 30 June 1992, senior RTA and SMEC officers gave a presentation concerning the 1992 Proposal and the 1992 EIS to Councillors and senior staff of Baulkham Hills Shire Council. On 7 July 1992, senior RTA officers made a similar presentation to a full meeting of that Council. On 8 July 1992, senior RTA officers made a similar presentation to a full meeting of Hornsby Shire Council.

(g) Fifteen "acquisition information nights" were held. Details of these meetings are contained in Appendix 16.

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69 **See Appendix 14 to this Assessment Report.**

70 **See Appendix 15 to this Assessment Report.**

71 **See Western EIS pp.15-16.**

3. Receipt of Representations

General

3.1 Over 14,000 representations were received. Many of these were duplications. Allowing for duplications, in all 12,757 representations were received in relation to the 1992 EIS. These representation were made up of:

2092	individual representations concerning the Eastern EIS;
3814	form letters (A) concerning the Eastern EIS;
1230	form letters (B) concerning the Eastern EIS;
1510	individual representations concerning the Western EIS;
2959	form letters (A) concerning the Western EIS;
769	form letters (B) concerning the Western EIS;
383	individual representations concerning both EISs;
12757	

Form letters (B) differed from form letters (A) in that form letters (B) contained individual comments. Included in this number are representations lodged outside the publicised representation period, or lodged with the Department of Planning, the Minister for Planning or Members of Parliament and forwarded to the RTA.

3.2 Among the representations received were the following:

Submissions from New South Wales Government Bodies

CityRail
Department of Agriculture
Department of Conservation and Land Management
Department of Health
Department of Housing
Department of Public Works
Department of School Education
Department of State Development
Department of Transport
Department of Water Resources
Environment Protection Authority
Forestry Commission
National Parks and Wildlife Service
State Transit Authority
Upper Parramatta River Catchment Trust

Submissions from Local Government Bodies

Baulkham Hills Shire Council
Blacktown City Council
Hornsby Shire Council
Lane Cove Municipal Council
Parramatta City Council
Ryde City Council

Submissions from Members of Parliament

WA Merton MLA (Member for Baulkham Hills)
AC Packard MLA (Member for the Hills)
A Tink MLA (Member for Eastwood)

Submissions from Groups & Associations

Action for Public Transport
Australian Museum
BACTAG (Beecroft & Cheltenham Tollway Action Group)
BAIRD (Beecroft Against Irresponsible Road Development)
Bicycle Institute of New South Wales Inc
Bush Regeneration Society
CACE
CAMWEST (Cyclists' Action Movement West)
CAT (Citizens Against the Tollway)
Cement & Concrete Association of Australia
CHANGE (Coalition of Hawkesbury & Nepean Groups for the Environment Inc)
Coalition Against Lane Cove Valley Freeways
CORE (Conserve Our Residential Environment)
CTAG (Coalition of Transport Action Groups)
CUTS (Coalition for Urban Transport Sanity)
Darling Mill Bush Regenerators
Epping Civic Trust
Epping Heights Public School
Epping Heights Public School Parents and Friends
Excelsior Park Bushland Society
Excelsior Reserve Management Committee
Gloucestor Avenue Association
Greenpeace
Hills Environment Forum
IFFA (Indigenous Flora & Fauna Association)
Macquarie University
MAPS (Macquarie Area Protection Society)
NAG (Northern Action Group)
National Trust of Australia (NSW)
NEPA (North Epping Progress Association)
North Ryde Resident Group
North Ryde Residents' Action Group
NRMA (National Roads & Motorists' Association)
PAVE (People Against Valley Expressways)
Pennant Hills Golf Club
ROWPAC (Residents of West Pennant Hills Acquisition Campaign)
Royal New South Wales Institute for Deaf & Blind Children
Ryde and Hunters Hill Flora and Fauna Preservation Society
SCARED (Seriously Concerned About new Residential Environment being Destroyed)
SCRAP (Seriously Concerned Residents Against Pollution)
STEP (South Turramurra Environment Protection)
Sutherland Road Action Group
Uniting Church in Australia - West Epping Parish

Collation of Representations

3.3 In June 1992, the RTA called for submissions of interest in assisting the RTA in the clerical exercise of:

(a) reviewing the representations received in relation to the 1992 EIS;

(b) summarising each representation in detail; and

(c) identifying the issues raised by the representations for consideration in this Assessment Report.

Dames & Moore Pty Limited ("Dames & Moore") submitted one of three competitive proposals to the RTA and were selected.

3.4 As representations were received, they were registered in numerical order of receipt and recorded as addressing the Eastern EIS, the Western EIS or both. Each representation was acknowledged as received by letter from the RTA.

Dames & Moore established a "representation management system" similar to the system developed in relation to the environmental impact statement for the Sydney (Kingsford-Smith) Airport Third Runway. Using this system, Dames & Moore created a coded list of issues and the representations were classified according to which issues they addressed on that list. Each representation was read more than three times, and summarised, and a summary of the representations ("the Dames & Moore Summary") was produced[72].

To assist the RTA in its examination and consideration of the 1992 EIS, Dames & Moore was asked to provide an informal review of the 1992 EIS[73].

Dames & Moore also produced an alphabetical list of the names of authors of representations[74].

Despatch of Representations to Department of Planning

3.5 On 22 February 1993 the RTA sent copies of the 12,757 representations, and a copy of the Dames & Moore Summary, to the Department of Planning[75].

On 6 April 1993, senior RTA personnel met with officers of the Department of Planning to discuss matters raised with the Department by persons who had made representations concerning the 1992 EIS.

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72 A copy of the Dames & Moore Summary is contained in Exhibit 42 to this Assessment Report.

73 Appendix 17 contains that review.

74 Appendix 18 contains a copy of the list.

75 A copy of the RTA's letter to the Department of Planning dated 22 February 1993 is contained in Appendix 19 to this Assessment Report.

4. Petitions

4.1 During and after the exhibition period for the 1992 EIS, the RTA received numerous petitions concerning the 1992 Proposal. A list of those petitions, and a summary of their concerns, is set out in Appendix 20 to this Assessment Report.

5. Further Public Consultation

5.1 On 10 March 1993, senior RTA officers held a meeting concerning the 1992 Proposal with the Lamorna Avenue and Adjacent Area Residents Group at Roselea Community Centre, Carlingford.

On 11 March 1993 senior RTA officers held a meeting concerning the 1992 Proposal with the Residents of West Pennant Hills Acquisition Campaign (ROWPAC) at the Gospel Hall in Eaton Road, Carlingford.

On 12 March 1993, senior RTA officers held a meeting with Committee members of the Pennant Hills Golf Club.

On 24 March 1993, senior RTA officers held a meeting concerning the 1992 Proposal with Seriously Concerned Residents against Pollution (SCRAP) at 45 Carmen Drive, Carlingford.

6. Epping Interchange

6.1 Several representations to the 1992 EIS raised concerns over the effect on access to and from North Epping of the proposed bus interchange at Epping station[76].

In response to these representations, the RTA commissioned Transportation Environment Consultants ("TEC") to provide a detailed examination of the traffic patterns in the relevant area. A copy of TEC's report is contained in Appendix 21 to this Assessment Report.

7. Pennant Hills Road Interchange

7.1 Several representations to the 1992 EIS raised concerns over the design proposed for the grade-separated interchange at Pennant Hills Road[77].

In response to these representations, the RTA commissioned SMEC to investigate and report to the RTA on possible variations to the interchange that would address these concerns. A copy of SMEC's report is contained in Appendix 22 to this Assessment Report.

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76 The Epping Interchange is described in the Eastern EIS as pp.79-83.

77 See Eastern EIS Figure 9.25, and Western EIS Figures 27.9 and 27.10.

PART 3

REQUIREMENTS OF PART V EPA ACT

1. 1989 Proposal

General

1.1 Part V of the EPA Act imposes several requirements in relation to the 1992 Proposal. Each of those requirements is dealt with in turn below.

Consideration of 1989 EIS

Statutory Provisions

1.2 Part V of the EPA Act contains provisions which require that:

(a) the RTA may not carry out the 1989 Proposal until it has considered the 1989 EIS and the representations to it, and the findings of the Commission of Inquiry into the 1989 Proposal[78]; and

(b) the RTA must publish a report of its consideration of the 1989 EIS and those representations as soon as practicable after that consideration has been completed[79].

Response

1.3 These provisions give rise to no current obligations. As mentioned in paragraph 2.10 of Part 2 of this Assessment Report, the 1989 Proposal is no longer current.

However, as set out in paragraph 2.5 of Part 2 of this Assessment Report, attention was nevertheless given during the preparation of the 1992 EIS to proper consideration of the findings of the Commission of Inquiry.

Consideration of Ministerial Advice

Statutory Provisions

1.4 Part V of the EPA Act contains provisions which require that:

(a) the RTA must not determine to carry out the 1989 Proposal until it has considered the Commissioner's Report into the 1989 Proposal and the advice given to it by the Minister in accordance with Section 114(a) of the EPA Act[80]; and

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78 Sections 112(1)(a), (b) and (d) EPA Act.

79 Clause 64 EPA Regulation.

80 Section 112(1)(d) EPA Act.

(b) the RTA must publish a report of its consideration of the Commissioner's Report into the 1989 Proposal and the advice given to it by the Minister in accordance with Section 114(a) of the EPA Act as soon as practicable after that consideration has been completed[81].

1.5 These provisions give rise to no current obligations. As mentioned in paragraph 1.10 of Part 2 of this Assessment Report, the Minister for Planning has not issued any advice under section 114(a) of the EPA Act in relation to the 1989 Proposal. As well, as mentioned above, the 1989 Proposal is no longer current.

However, as set out in paragraph 2.5 of Part 2 of this Assessment Report, attention was nevertheless given during the preparation of the 1992 EIS to the findings of the Commission of Inquiry concerning the 1989 Proposal.

2. 1992 Proposal

General

2.1 Part V of the EPA Act imposes several requirements in relation to the 1992 Proposal. Each of those requirements is dealt with in turn below.

Preparation of EIS by or on behalf of Proponent

Statutory Provision

2.2 An EIS for an activity likely to significantly affect the environment must be prepared by or on behalf of the proponent of the activity[82].

Response

2.3 This provision has been complied with. The 1992 Proposal is likely to significantly affect the environment. The RTA is the proponent of the 1992 Proposal[83]. The Eastern EIS has been prepared by Maunsell, and the Western EIS by Manidis Roberts, on behalf of the RTA[84].

Consultation with Director of Planning

Statutory Provision

2.4 The person preparing the EIS must consult with the Director of Planning[85].

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81 Clause 64 EPA Regulation.

82 Section 112(1)(a)(i) of the EPA Act.

83 See paragraph 2.15 of Part 2 of this Assessment Report.

84 See Eastern EIS p.(xii), and Western EIS frontispiece.

85 Clause 58(1) EPA Regulation.

Response

2.5 This provision has been complied with. Reference is made in paragraph 2.6 of Part 2 of this Assessment Report to the consultations which occurred between personnel of the RTA and the Department of Planning, and to the offers of consultation with the Director of Planning made by Maunsell and Manidis Roberts.

Requirements of Director of Planning

Statutory Provisions

2.6 The Director of Planning may notify requirements in respect of the form and content of the statement[86].

2.7 Where the Director of Planning notifies requirements:

(a) the notification:

(1) must be in writing[87]; and

(2) must occur within 28 days from when the person preparing the statement consulted with the Director of Planning[88]; and

(b) the Director must inform the determining authority (RTA) of any requirements at the same time he or she notifies the person preparing the statement of those requirements[89].

Response

2.8 The Director of Planning has notified such requirements.

Reference is made in paragraph 2.7 of Part 2 of this Assessment Report to the correspondence between the RTA and the Director of Planning concerning her requirements.

Form and Content of 1992 EIS

Statutory Provision

2.9 The person preparing the EIS must have regard to the requirements notified by the Director of Planning[90].

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86 Clause 58(1) EPA Regulation.

87 Clause 58(1) EPA Regulation.

88 Clause 58(2) EPA Regulation.

89 Clause 58(3) EPA Regulation.

90 Clause 58(1) EPA Regulation.

Response

2.10 As mentioned in paragraph 2.7 of Part 2 of this Assessment Report:

(a) the Director of Planning advised her requirements in two letters dated 10 January 1991[91];

(b) on 9 March 1991, the RTA wrote to the Director of Planning to confirm matters discussed with her in regard to interpretation of her requirements[92]; and

(c) on 8 May 1991, the Director of Planning replied to the RTA's letter confirming the acceptability to Department of Planning of the interpretation of her requirements set out in the RTA's letter[93].

2.11 The Director of Planning notified the following requirements:

(a) "[Each] EIS" should "specifically address" "a detailed description of" the 1992 Proposal "including earthworks, traffic management arrangements and associated facilities using appropriate diagrams, photo montages based on aerial photographs and drawings to scale...Adjoining landholders will be able to identify with reasonable accuracy (to within 1 metre) the boundary and extent of construction".

Regard has been had in the 1992 EIS to this requirement[94].

(b) "[Each] EIS" should "specifically address" "clear definition of the North West Transport Region and description of its present and likely future transport, mobility and access needs" and "current strategies developed to serve transport requirements in the North West".

Regard has been had in the 1992 EIS to this requirement[95].

(c) "[Each] EIS" should "specifically address" "the role of the [1992 Proposal]" to the "current strategies developed to serve transport requirements in the North West".

Regard has been had in the 1992 EIS to this requirement[96].

(d) "[Each] EIS" should "specifically address":

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91 Copies of these letters are contained in Appendix 1.1 to the Eastern EIS and Appendix A to the Western EIS.

92 A copy of the RTA's letter is contained in Appendix 1.2 to the Eastern EIS, Appendix A to the Western EIS, and Appendix 10 to this Assessment Report.

93 A copy of the Director of Planning's letter is contained in Appendix 8 to this Assessment Report.

94 The expressway and busway option is described in the Eastern EIS at pp. 61 (right column) to 62 (left column), and at pp. 72-79, and in the figures and diagrams reproduced there. See also Figure A7 of the Eastern EIS (pp. A27-A29). The expressway and busway option is described in the Western EIS at p. 103 and in Chapter 8 and in the figures and diagrams reproduced there. See also Figures 34.1-34.9 of the Western EIS.

95 See Eastern EIS Chapters 1 and 5; Western EIS Chapters 1 and 32.

96 See Eastern EIS Chapters 1 and 5, Western EIS Chapters 1 and 32.

(1) "a full assessment of alternatives to the proposal including relative social and economic costs, and impacts of the options considered, and reasons for rejection of alternatives";

(2) "assessment of the [1992 Proposal] with respect to the mobility of goods and people";

(3) "implications of the [1992 Proposal] with respect to access needs of the North West Transport Region;

(4) "implications of the [1992 Proposal] for Parramatta and Sydney CBD and other commercial centres in the Region"; and

(5) "impact of the proposal on the character of Sydney's North West Transport Region".

Regard has been had in the 1992 EIS to these requirements[97].

(e) "[Each] EIS" should "specifically address" "diagrammatic identification of proposed property acquisition, if any, and a description of the acquisition process".

Regard has been had in the 1992 EIS to this requirement[98].

(f) "[Each] EIS" should "specifically address" "likely impact of the [1992 Proposal] on urban bushland and native fauna habitat".

Regard has been had in the 1992 EIS to this requirement[99].

(g) "[Each] EIS" should "specifically address" "impact on air quality and noise levels".

Regard has been had in the 1992 EIS to this requirement[100].

(h) "[Each] EIS" should "specifically address" "implications of the [1992 Proposal] and alternatives for energy use and greenhouse gas emissions; consideration of Government policy to reduce carbon dioxide emissions".

Regard has been had in the 1992 EIS to these requirements[101].

(i) "[Each] EIS" should "specifically address" "provisions and objectives of relevant environmental planning instruments; the decision-making process applicable to the [1992 Proposal], identification of zonings and consideration of need, if any, for rezoning".

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97 See paragraphs 2.2-2.11 of Part 4 of this Assessment Report.

98 See Eastern EIS pp.A28-A29; Western EIS Figures 43.1-43.3.

99 See Eastern EIS pp.86 and 104-106; Western EIS pp.233-248 and 287-300.

100 See Eastern EIS pp. 94-95, 85 and 90-93; Western EIS pp. 277-286 and 249-276.

101 See paragraph 2.2-2.12 of Part 4 of this Assessment Report.

Regard has been had in the 1992 EIS to these requirements[102].

(j) "[Each] EIS" should "specifically address" "commitment to give written notice, at the commencement of the EIS exhibition period, to the apparent owners and occupiers of land adjoining or directly included in the proposal, and where practicable, its alternatives, of the exhibition of the EIS and the opportunity to make a submission".

The RTA interpreted this requirement as meaning that, as far as possible, adjoining landowners and occupiers would be individually notified of the 1992 Proposal and the 1992 EIS. Every effort was made to do this and, as far as the RTA is aware, letterbox drops were made at all adjoining residences within 2 weeks of the opening of the exhibition period for the 1992 EIS. Appendix 23 contains copies of the materials sent out as part of the notification.

Statutory Provisions

2.12 The EIS must be prepared in the following form and manner[103]:

(a) The EIS must be in written form and signed by the person who has prepared it[104].

(b) The EIS must contain a certificate by the person who prepared it to the effect that it has been prepared in accordance with clauses 57 and 58 of the EPA Regulation[105].

(c) The contents of the EIS must include matters listed the clause 57(2) of the EPA Regulation.

Response

2.13 The 1992 EIS is in written form. The Eastern EIS is signed by D N Odgers, Managing Director of Maunsell. The Western EIS is signed by P Manidis, Director of Manidis Roberts.

2.14 The Eastern EIS is certified by D N Odgers, Managing Director of Maunsell, as having been prepared in accordance with clauses 57 and 58 of the EPA Regulation. The Western EIS is certified by P Manidis, Director of Manidis Roberts, as having been prepared in accordance with clauses 57 and 58 of the EPA Regulation.

2.15 The Eastern EIS and the Western EIS both include the matters listed the clause 57(2) of the EPA Regulation, and both contain tables indicating where those matters are included in their contents[106].

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102 See Eastern EIS p.107, and Chapter 3; Western EIS pp.209 and 12.

103 See 112(1)(a)(i) EPA Act.

104 Clause 57(1) EPA Regulation.

105 Clause 59 EPA Regulation.

106 See Eastern EIS p.6 (left column) and Western EIS p.11.

Statutory Provision

2.16 A person may not submit an EIS knowing:

(a) that it is false in any material particular;

(b) that it contains information that is materially misleading in form or context in which it appears; or

(c) that there is an omission of material matter[107].

Response

2.17 There has been no breach of this provision.

Statutory Provision

2.18 The EIS must contain a fauna impact statement ("FIS") if the activity is likely to significantly affect the environment of an endangered species[108].

Response

2.19 There has been compliance with this provision. However, the background to compliance with this provision requires to be set out. It is as follows[109].

2.20 On 17 December 1991, amendments were made to the National Parks and Wildlife Act 1974 ("the Parks Act") and the EPA Act. The central amendment was the insertion of a section 112(1B) into the EPA Act prohibiting the carrying out of activities which are "likely to significantly affect" the environment of "protected fauna" unless an FIS has been prepared in accordance with section 92D of the Parks Act and section 112(1D) of the EPA Act.

2.21 "Protected fauna" is defined[110] to mean any mammal, bird, reptile or amphibian "not named in Schedule 11" to the National Parks and Wildlife Act 1974.

Because of the width of this definition, the view was taken that the Proposed Link was likely to significantly affect the environment of "protected fauna", and Mount King Ecological Surveys ("Mount King") was appointed, as subconsultant to Maunsell and Manidis Roberts, to commence preparation of an FIS in relation to "protected fauna".

2.22 The amendments of 17 December 1991 were amended as from 12 March 1992 by the passage and assent to the Timber Industry (Interim Protection) Act 1992. Section 13 of that Act replaced all references in the EPA Act to "protected fauna" by references to "endangered fauna".

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107 Clause 65 EPA Regulation.

108 Sections 112(1B) and (1C) EPA Act.

109 See Western EIS Appendix D1.

110 Section 5(1) National Parks and Wildlife Act 1974.

Accordingly, as from 12 March 1992, the amendments made on 17 December 1991 were to the following effect. The central amendment is the insertion of a section 112(1B) into the EPA Act which prohibits the carrying out of activities which are "likely to significantly affect" the environment of "endangered fauna" unless an FIS has been prepared in accordance with section 92D of the Parks Act and section 112(1D) of the EPA Act.

2.23 "Endangered fauna" is defined[111] more narrowly than "protected fauna" to mean "protected fauna of a species named in Schedule 12 [of the Act] as threatened, as vulnerable and rare, or as a marine mammal".

2.24 Following the amendments of 12 March 1992, Mount King was appointed to advise the RTA whether there was any "endangered fauna" within the study area of the 1992 EIS whose environment was likely to be significantly affected by the Proposed Link. The advice of Mount King was that there was no such "endangered fauna"[112].

2.25 In light of this advice, the RTA decided:

(a) there is no requirement to produce an FIS in relation to "endangered fauna" within the study area of the 1992 EIS; but

(b) nevertheless to continue preparation of the document relating to "protected fauna" which Mount King had commenced after the amendments of 17 December 1991[113]. That document is not, and is not intended to be, a formal FIS.

Despatch of 1992 EIS to Director of Planning and NPWS

Statutory Provision

2.26 The determining authority must as soon as practicable after obtaining the EIS, but before publicly notifying the EIS, furnish a copy of the EIS to the Secretary of the Department of Planning[114] and must furnish any number of additional copies of the EIS as the Secretary may request[115].

Response

2.27 In her letters of 10 January 1991[116], the Director of Planning requested 6 copies of the 1992 EIS. On 13 May 1992, the RTA sent 8 copies of the 1992 EIS to the Director of Planning[117].

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111 Section 5(1) National Parks and Wildlife Act 1974.

112 See Western EIS Appendix D2.

113 A copy of that document appears in Appendix 9 of Exhibit 11 to this Assessment Report, and in Appendix 9 of Exhibit 29 to this Assessment Report.

114 Section 112(2) EPA Act.

115 Section 112(3) EPA Act.

116 Copies of these letters are contained in Appendix 1.1 to the Eastern EIS and Appendix A to the Western EIS.

117 A copy of the RTA's letter to the Director of Planning dated 13 May 1992 is contained in Appendix 24 to this Assessment Report.

Statutory Provision

2.28 The determining authority must forward forthwith a copy of the EIS to the Director of National Parks and Wildlife[118].

Response

2.29 A copy of the 1992 EIS was forwarded to the Director of National Parks and Wildlife in the first week of the exhibition period for the 1992 EIS.

Notification of 1992 EIS

Statutory Provisions

2.30 Having furnished the Secretary of the Department of Planning with a copy of the EIS, the determining authority must publish a notice that the EIS may be inspected at:

(a) the principal office of the determining authority and the Department of Planning at any time during ordinary office hours;

(b) the office of the New South Wales Environment Centre;

(c) the New South Wales Government Information Centre; and

(d) the offices of the local councils in whose area the proposed activity will be carried out[119];

for a period, of not less than 30 days after the day the notice is published[120].

2.31 The notice must:

(a) be published in at least two newspapers, one being a daily newspaper circulating generally throughout the State and the other being a local newspaper circulating at least once weekly in the locality where the activity is proposed to be carried out;

(b) be published on at least two separate occasions, between 14 and 20 days apart;

(c) appear in two or three columns of the display section of those newspapers;

(d) contain the following heading: **"Assessment of Environmental Impact of (a title description of the proposed activity and its location) - Public Exhibition"**;

(e) contain a brief description of the proposed activity and its locality;

(f) state the name of the proponent;

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118 Section 112(1D) EPA Act.

119 Section 113(1) EPA Act and clause 61 EPA Regulation.

120 Section 113(1) EPA Act.

(g) state the times, places and dates during which the EIS may be inspected;

(h) contain a statement to the effect that any person may before the specified closing date make representations in writing to the determining authority[121].

2.32 The EIS must be publicly exhibited at the dates, times and places specified in the notice[122].

Response

2.33 These provisions have been complied with. Reference is made in paragraph 2.18-2.19 of Part 2 of this Assessment Report to Appendix 11, Appendix 12 and Appendix 13 of this Assessment Report which contain details of notification of the 1992 EIS. The provisions in paragraphs 2.30-2.32 have been complied with.

Sale of 1992 EIS

Statutory Provisions

2.34 The proponent:

(a) must make copies of the EIS available for sale to the public for $25 or less per copy[123]; and

(b) must consult with the Director of Planning prior to making copies of the EIS available for sale to the public, and have regard to any comment made by the Director in that respect[124].

Response

2.35 These provisions have been complied with. Reference is made in paragraphs 2.20-2.21 of Part 2 of this Assessment Report to the public availability of documents relating to the 1992 Proposal.

Despatch of Representations to Department of Planning

Statutory Provision

2.36 The determining authority must as soon as practicable (and not less than 21 days before deciding to carry out the activity) provide the Secretary of the Department of Planning with a copy of all representations made to it under section 113(2) with respect to the activity[125].

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121 Clause 60 EPA Regulation.

122 Section 113(2) EPA Act.

123 Clauses 63(2) and 63(4) EPA Regulation.

124 Clause 63(3) EPA Regulation.

125 Section 113(3) EPA Act.

Response

2.37 This provision has been complied with. On 22 February 1993, the RTA sent copies of the 12,757 representations, and a copy of the Dames & Moore summary to the Department of Planning[126].

Determination

Statutory Provisions

2.38 The determining authority must not decide to carry out the activity until:

(a) it has examined and considered the EIS in respect of the activity[127]; and

(b) it has examined and considered any representations made to it in response to the EIS[128].

2.39 In its consideration of the activity, the determining authority must examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity[129]. Clause 56 of the EPA Regulation lists "factors to be taken into account when consideration is being given to the likely impact of an activity on the environment".

Response

2.40 Part 4 of this Assessment Report records examination and consideration of the 1992 EIS as part of the preparation of this Assessment Report.

Parts 5 and 6 of this Assessment Report record the examination and consideration of the representations to the 1992 EIS that have occurred in the preparation of this Assessment Report.

Part 7 of this Assessment Report records consideration of the factors in clause 56 of the EPA Regulation as part of the preparation of this Assessment Report.

Part 8 of this Assessment Report contains recommendations made in light of the examination and consideration recorded in Parts 4, 5, 6 and 7 of this Assessment Report.

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126 **A copy of the RTA's letter to the Department of Planning dated 22 February 1993 is contained in Appendix 19 to this Assessment Report.**

127 **Section 112(1)(a) EPA Act.**

128 **Section 112(1)(b) EPA Act.**

129 **Section 111 EPA Act.**

Report of Determination

Statutory Provision

2.41 The determining authority must make the report of its examination and consideration of the matters in paragraph 2.38 public as soon as practicable after the examinations and considerations are completed[130].

Response

2.42 This Assessment Report constitutes that examination, and the Assessment Report has been conducted with the aim of complying with the EPA Act.

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130 Clause 64 EPA Regulation.

PART 4

CONSIDERATION OF 1992 EIS

1. Introduction

1.1 As mentioned in paragraph 2.38(a) of Part 3 of this Assessment Report, the RTA must not decide to carry out the 1992 Proposal until it has examined and considered the 1992 EIS[131].

1.2 The purpose of this Part 4 is to record the examination and consideration of the 1992 EIS which occurred as part of the preparation of this Assessment Report. That examination and consideration has occurred as follows.

2. General Matters

2.1 Paragraphs 2.1-2.21 of Part 2 of this Assessment Report describe:

(a) the announcement of the preparation of the 1992 EIS;

(b) the appointment and coordination of consultants for its preparation;

(c) the consultation with the Director of Planning and the consideration of the findings of the Commissioner's Report that occurred during its preparation;

(d) the relationship between the 1992 EIS and the Working Papers prepared for the 1992 EIS;

(e) the approach taken in the 1992 EIS to the identification of the 1992 Proposal; and

(f) the exhibition of the 1992 EIS.

Paragraphs 2.1-2.42 of Part 3 of this Assessment Report describe how those matters conform with the requirements of Part V of the EPA Act.

2.2 As mentioned in paragraphs 2.9-2.12 of Part 2 of this Assessment Report, the Eastern EIS and the Western EIS have broadly similar structures:

(a) They both commence with a discussion of the need for improvements within the study area for the 1992 EIS[132] and conclude that there is a need for transport improvements[133].

(b) They both then consider a range of alternatives[134] leading to detailed consideration of two alternatives[135] and their environmental impacts[136].

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131 Section 112(1)(a) EPA Act.

132 See Eastern EIS pp. 15-51, Western EIS pp. 3-79.

133 See Eastern EIS p. 51, Western EIS pp. 69-70.

134 See Eastern EIS pp.53-63, Western EIS pp.73-119.

135 See Eastern EIS pp. 66-83, Western EIS pp. 129-187.

(c) They both conclude that the optimal alternative is an expressway/busway alternative.

Each of the Eastern EIS and the Western EIS also contains, by way of introduction, a summary of its contents and conclusions[137].

3. Conclusions of 1992 EIS

3.1 Where particular conclusions of the 1992 EIS are relevant to particular matters raised in Parts 5 or 6 of this Assessment Report those conclusions have been considered in responding to those matters. Similarly, the conclusions of the 1992 EIS have been reflected in formulating the responses in Part 7 of this Assessment Report and the recommendations in Part 8 of this Assessment Report.

3.2 The general conclusions of the Eastern EIS and the Western EIS are as follows.

Eastern EIS

3.3 Five strategic transport options were developed and assessed for the Eastern EIS:

(a) the "do nothing option"[138];

(b) the "traffic calming option"[139];

(c) the "stand-alone public transport option"[140];

(d) the "arterial upgrade option"[141]; and

(e) the "expressway option"[142].

3.4 Concerning these strategic options, the conclusions of the Eastern EIS were as follows:

(a) Neither the "do nothing option"[143] nor the "traffic calming option"[144] "would adequately service the requirements for travel and the transport infrastructure for northwestern Sydney, although...traffic calming principles could be integrated with other options to positive effect"[145].

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136 See Eastern EIS pp.84-111, Western EIS pp.191-340.

137 See Eastern EIS pp. xiv-xx, Western EIS pp. i-xxxiv.

138 See Eastern EIS pp. xvi (left column) and 54 (left and centre columns).

139 See Eastern EIS pp. xvi (left and centre columns), 54 (centre and right columns) and 55 (left column).

140 See Eastern EIS pp. xvi (right column), xvii (left column), 55 (centre and right columns) and 57 (left column).

141 See Eastern EIS pp. xvi (centre column) and 56 (left column).

142 See Eastern EIS pp. xvi (centre column) and 56 (centre and right columns).

143 See Eastern EIS pp. xvi (left column) and 54 (left and centre columns).

144 See Eastern EIS pp. xvi (left and centre columns), 54 (centre and right columns) and 55 (left column).

145 Eastern EIS pp. xvi (right column), 54 (centre column) and 55 (left column).

(b) The "stand-alone public transport" option "would generally [result in less severe environmental effects] than [options involving] road construction [but] the effects on bushland and severance would be similar [and the] forecast travel demand and the needs of freight and other commercial traffic are...unlikely to be met by this option"[146].

(c) The demonstrated transport need will best be met by a proposal which integrated road-improvement with facilities for public vehicles[147].

3.5 Four principal proposals of this sort were developed from a wide range of options for assessment in the Eastern EIS:

(a) three "arterial road upgrade options", namely:

(1) the "Epping Bypass Arterial" option[148];

(2) the "Reservation Epping Road Arterial" option[149]; and

(3) the "Pennant Hills - Carlingford - Epping Road Arterial" option[150]; and

(b) an expressway option[151].

3.6 Concerning these options, the conclusions of the Eastern EIS were as follows:

(a) The "Epping Bypass Arterial" option "does not offer a sufficiently attractive increase in transport effectiveness to merit more detailed scrutiny"[152].

(b) The "Reservation Epping Road Arterial" option "[fails] in respect of resulting deficiency in network flexibility to accept future growth and traffic rearrangement under abnormal traffic conditions"[153]. The "Reservation Epping Road Arterial" option performed at a similar level to the expressway option but was rejected because it was more expensive, provided less network flexibility, entailed the construction of numerous flyovers on Epping Road which would be disruptive and prone to expenditure over-run, was not as suitable for operation as a toll road, did not allow Epping Road to act as a distributor road for Macquarie University, North Ryde Business Park and other adjacent land uses, and did not allow the exclusive bus lane facilities to be as easily developed along the full length of its route.

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146 See Eastern EIS pp. xvi (right column) and 63 (left and centre columns).

147 See Eastern EIS pp. xvii (left column) and 63 (centre and right columns).

148 See Eastern EIS pp. xvii (left column) and 60 (centre and right columns), and Figure 8.8.

149 See Eastern EIS pp. xvii (left column) and 61 (left column), and Figure 8.9.

150 See Eastern EIS pp. xvii (left column) and 61 (left and centre columns), and Figure 8.12.

151 See Eastern EIS pp. xvii (left column) and 61 (right column), and Figure 8.13.

152 See Eastern EIS pp. 62-64 and 65 (left column).

153 See Eastern EIS pp. 62-64 and 65 (left column).

3.7 The remaining options, the "Pennant Hills - Carlingford - Epping Road Arterial" option and the expressway option, were then assessed for their potential environmental effects, and mitigative measures proposed[154]. In the case of the expressway option, the potential environmental effects of its operation as a tollway were also assessed[155].

Western EIS

3.8 Four strategic transport options were developed and assessed for the Western EIS:

(a) the "demand management option"[156];

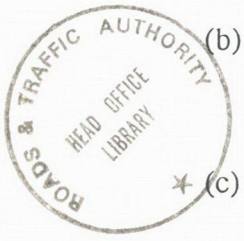
(b) the "traffic calming option"[157];

(c) the "improving public transport option"[158]; and

(d) the option of providing "additional road capacity in the transport corridor"[159].

3.9 Concerning these strategic options, the conclusions of the Western EIS were as follows:

(a) "Demand management would require changes in social attitudes, public will and government policy which could...not provide a solution to the area's traffic congestion over the next...20 years[160].



(b) "[Traffic] calming on heavily traffic roads would be difficult to achieve, particularly in peak periods...[Traffic] calming can only be included as a long-term goal which may be partially achievable"[161].

(c) "There are significant constraints on developing a new light or conventional railway service...[Public] transport [will] not provide a total solution because it would not serve the needs of the large number of commuters who do not, or cannot, use public transport"[162].

(d) "The preferred alternative is therefore to provide an integrated strategy involving additional road space plus a new busway which could one day be converted to light rail"[163].

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154 Appendix 25 to this Assessment Report lists the mitigative measures proposed in the Eastern EIS and identifies their location in the Eastern EIS.

155 See Eastern EIS pp.78-9,84 (left column), 89 and 108.

156 Western EIS pp.iv and 79-80.

157 Western EIS pp. iv and 80-81.

158 Western EIS pp. iv and 82-87.

159 Western EIS pp. iv and 90-91.

160 Western EIS pp. v and 80.

161 Western EIS pp. v and 81.

162 Western EIS pp. v and 88-89.

163 Western EIS pp. v and 92.

3.10 Over 50 possible alignments for such an integrated road and busway were developed[164] leading to two "shortlisted" alignments. As mentioned in paragraph 2.12 of Part 2 of this Assessment Report, both options involved an expressway and busway. In the first option[165], the expressway and busway continue to Pennant Hills Road and beyond. In the second option[166], the expressway and busway do not continue beyond Pennant Hills Road. Instead, the busway is routed along Barclay Road and North Rocks Road to Pennant Hills Road, and the expressway ends at Pennant Hills Road.

3.11 These options were then assessed for their potential environmental effects, and mitigative measures proposed[167]. In the case of the expressway option, the potential environmental effects of its operation as a tollway were also assessed[168].

4. Dames & Moore Comments

4.1 As mentioned in paragraph 3.4 of Part 2 of this Assessment Report, the RTA appointed Dames & Moore to undertake an informal review of the 1992 EIS for the purposes of assisting the RTA in its examination and consideration of the 1992 EIS. Appendix 17 contains that review .

Appendix 17 draws together the issues discussed in the EIS. In particular, it deals with the issues under the following headings: noise, air quality, social and community effects, landscape and visual effects, erosion, sedimentation and water quality, flora, fauna, aboriginal and European heritage, transport efficiency, transport intrusion, safety, utilities and services, economic effects, and land uses. Appendix 17 is not complete, but the issues it deals with are fully dealt with elsewhere in this Assessment Report.

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164 Western EIS pp. vi and 93-100.

165 This option is described in the Western EIS at p. 103 and in Chapter 9.

166 This option is described in the Western EIS at p. 103 and in Chapter 8.

167 Appendix 25 to this Assessment Report lists the mitigative measures proposed in the Western EIS and identifies their location in the Western EIS.

168 See Western EIS pp183-5 and Addendum.

PART 5

CONSIDERATION OF REPRESENTATIONS TO 1992 EIS: SPECIAL MATTERS

1. Introduction

1.1 This Part 5 sets out several matters which arose for special discussion.

Those special matters are:

(a) the representation received by the RTA from, and the RTA's responses to, the Environmental Protection Authority of New South Wales;

(b) the representation received by the RTA from, and the RTA's responses to, the National Parks and Wildlife Service;

(c) the supplementary advice received by the RTA from consultants to the 1992 EIS in response to issues raised in the representations to the 1992 EIS, particularly in relation to:

(1) noise issues;

(2) air quality issues;

(3) the proposed route through Darling Mills State Forest;

(4) the proposed interchange at Pennant Hills Road;

(d) the letter received by the RTA from CTAG dated 19 March 1993;

(e) the proposed route through Devlins Creek;

(f) the proposed route near Mahers Road and Pennant Hills Golf Course;

(g) the proposed bus-rail interchange at Epping;

(h) the proposal for tolling; and

(i) the consideration given to the findings of the 1989-1990 Commission of Inquiry.

2. Representation from Environment Protection Authority of New South Wales ("the EPA")

2.1 The EPA's representation is contained in a letter to the RTA dated 19 January 1993. A copy of the EPA's representation is contained in Appendix 26 to this Assessment Report. The EPA's representation makes several statements which are considered in turn in paragraphs 2.2-2.62 below.

General

Issue

2.2 Paragraph 8 of the EPA's representation states that "the EPA considers that a number of environmental issues [referred to in the representation] have not been adequately addressed in the EISs".

Response

2.3 This statement could be interpreted as meaning that the EPA considers that the 1992 EIS is legally inadequate.

It appears that this is not the interpretation that the EPA intends because paragraph 8 of the EPA's representation goes on to say that "the EPA expects that the RTA...will address these issues more fully during the EIS assessment process".

At a meeting between RTA and EPA personnel on 17 March 1993, the EPA confirmed that the EPA's representation is intended only to point out matters for the RTA's consideration in its role as determining authority in relation to the EISs, and that the EPA's representation is not meant to be interpreted as directing any criticism to the legal adequacy of the EISs.

Issue

2.4 Paragraph 1 of the EPA's representation states that, if the 1992 Proposal is constructed, "the developer" must ensure that construction is carried out in compliance with the requirements of the "environment protection legislation" as defined in the Protection of the Environment Administration Act 1991. This legislation is the following Acts (and the regulations and other instruments made under those Acts):

Clean Air Act 1961;
Clean Waters Act 1970;
Dangerous Goods Act 1975 (Division 2 of Part 3);
Environmental Education Trust Act 1990;
Environmental Offences and Penalties Act 1989;
Environmental Research Trust Act 1990;
Environmental Restoration and Rehabilitation Trust Act 1990;
Environmentally Hazardous Chemicals Act 1985;
Noise Control Act 1975;
Ozone Protection Act 1989;
Protection of the Environment Administration Act 1991;
Pollution Control Act 1970;
Radiation Control Act 1990;
Recreation Vehicles Act 1983;
Unhealthy Building Land Act 1990; and
Waste Disposal Act 1970.

Response

2.5 **If it is decided to proceed with the 1992 Proposal, the conditions of determination will require compliance with this legislation.**

Issue

2.6 Paragraph 1 of the EPA's representation states that conditions of pollution control licences or pollution control approvals issued in relation to the 1992 Proposal by the EPA under the legislation referred to in paragraph 2.4 may include a requirement to implement quality assurance and quality control principles in accordance with Australian Standards 3900 program. Relatedly, in paragraph 6 of the EPA's representation, it is stated that "[a] detailed program to check the environmental impact assessment methods applied and the effectiveness of environmental impact control measures, similar to the West Link EIS program, will need to be prepared".

Response

2.7 If it is decided to proceed with the 1992 Proposal, the conditions of determination will, in addition to requiring compliance with the legislation referred to in paragraph 2.4:

(a) note that the EPA has advised the RTA that conditions of pollution control licences or pollution control approvals issued in relation to the 1992 Proposal by the EPA under the legislation referred to in paragraph 2.4 may include requirements:

(1) to implement quality assurance and quality control principles in accordance with Australian Standard 3900; and

(2) to prepare a program to check the environmental impact assessment methods applied and the effectiveness of environmental impact control measures; and

(b) require any contractor for construction and operation of the 1992 Proposal:

(1) to implement quality assurance and quality control measures in accordance with Australian Standard 3900; and

(2) to prepare and implement to the EPA's satisfaction a detailed program to check the effectiveness of these measures.

Issue

2.8 Paragraph 1 of the EPA's representation states that a separate pollution control approval will be required for any on-site concrete batching plant for the 1992 Proposal.

Response

2.9 If it is decided to proceed with the 1992 Proposal, the conditions of determination will, in addition to requiring compliance with the legislation referred to in paragraph 2.4, note that the EPA has advised the RTA that a separate pollution control approval will be required for any on-site concrete batching plant for the 1992 Proposal.

Water Issues

Issue

2.10 Paragraph 2.1 of the EPA's representation states that a pollution control licence[169] should be obtained prior to any discharge to waters, and that any application for such a licence will need to be accompanied by an environmental management plan containing water pollution control systems addressing the issues mentioned in paragraphs 2.1.1 - 2.3.2 of the EPA's representation. Paragraph 2.4 of the EPA's representation states that "it would be advisable to conduct field demonstration trials of control systems prior to the commencement of road construction in order that construction staff be fully aware of their responsibilities".

Response

2.11 If it is decided to proceed with the 1992 Proposal, the conditions of determination will, in addition to requiring compliance with the legislation referred to in paragraph 2.4:

(a) note that the EPA has advised the RTA that a pollution control licence should be obtained prior to any discharge to waters, and that any application for such a licence will need to be accompanied by an environmental management plan containing water pollution control systems addressing the issues mentioned in paragraphs 2.1.1 - 2.3.2 of the EPA's representation; and

(b) require any contractors for construction and operation of the 1992 Proposal to prepare and implement such a plan to the EPA's satisfaction.

Issue

2.12 Paragraph 2.1.1 of the EPA's representation states that [the] proposals [in the EISs] for the control of soil erosion and sediment control, "particularly those referred to in the East section, are largely based on assumptions and lack details on how the proposed control measures may be implemented".

Following meetings between RTA and EPA personnel on 17 March 1993, the EPA has confirmed that paragraph 2.1.1 of the EPA's representation is to be interpreted as meaning only that, if the RTA decides to proceed with the 1992 Proposal, the conditions of determination should contain details of proposed control measures and their implementation.

Response

2.13 If it is decided to proceed with the 1992 Proposal, the conditions of determination will, in addition to requiring compliance with the legislation referred to in paragraph 2.4 and in addition to requiring the matters set out in paragraph 2.7(b), require any contractors for construction and operation of the 1992 Proposal to prepare to the EPA's satisfaction

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169 Section 16(1) of the Clean Waters Act 1970 makes it an offence to pollute waters. Section 16(6) of the Clean Waters Act 1970 provides that no offence arises under section 16(1) if the polluter holds a licence and does not pollute in contravention of any of the conditions of the licence.

and implement a program to control water pollution during construction of the 1992 Proposal.

Issue

2.14 Paragraph 2.1.5 of the EPA's representation states that "[the] EIS for the East Section does not provide sufficient information relating to the existing water quality in local creeks. Typical water quality values are meaningless unless sampling conditions and locations are specified...[Stream] water quality monitoring at locations likely to be affected by the proposal will need to be undertaken...in order to establish baseline data prior to the commencement of construction activities".

Response

2.15 If it is decided to proceed with the 1992 Proposal, the conditions of determination will, in addition to requiring compliance with the legislation referred to in paragraph 2.4 and in addition to requiring the matters set out in paragraph 2.7(b) and in addition to requiring the matters set out in paragraph 2.13, require any contractors for construction and operation of the 1992 Proposal to undertake to the EPA's satisfaction:

(a) (prior to the commencement of construction activities) baseline stream water quality monitoring at locations likely to be affected by the proposal; and

(b) (during construction of the 1992 Proposal) periodic stream water quality monitoring at those locations.

Issue

2.16 Paragraph 2.3.1 of the EPA's representation states that "[the] EPA is particularly concerned about accidents involving vehicles carrying chemicals and hazardous wastes" and that:

(a) "sedimentation basins or other collection systems...designed to contain spillage resulting from road accidents or leakages from improper transportation of goods...will need to be installed in the high rate accident areas...identified in the" Western EIS; and

(b) for this purpose "[it] will...be necessary to identify the areas most likely to be affected by accidents in" the eastern section of the 1992 Proposal.

Response

2.17 **If it is decided to proceed with the 1992 Proposal, the conditions of determination will in addition to requiring compliance with the legislation referred to in paragraph 2.4 and in addition to requiring the matters set out in paragraph 2.7(b), require any contractors for construction and operation of the 1992 Proposal:**

(a) to include in the detailed design for the 1992 Proposal:

(1) structures which will control direct and indirect discharge of road drainage (including flammable and toxic spills) to natural waterways during operation of the 1992 Proposal; and

(2) provision for emergency egress from, and access to, the 1992 Proposal;

(b) to develop in conjunction with the RTA, and to implement and review periodically, emergency plans in relation to flammable and toxic spills which occur during the operation of the 1992 Proposal;

(c) to include in those plans methods for informing the EPA immediately of the occurrence of any such spill.

Issue

2.18 Paragraph 2.4 of the EPA's representation states that "neither EIS addresses the extent of flood prone areas" and that "the environmental management plan will need to address the ... control of pollution discharges".

Response

2.19 If it is decided to proceed with the 1992 Proposal, the conditions of determination will, in addition to requiring compliance with the legislation referred to in paragraph 2.4 and in addition to requiring the matters set out in paragraph 2.7(b) and in addition to requiring the matters set out in paragraph 2.13, require any contractors for construction and operation of the 1992 Proposal to develop and implement to the RTA's satisfaction procedures to control pollution discharges at sites likely to be affected by flooding.

Issue

2.20 Paragraph 2.4 of the EPA's representation states that "[the] EISs have not considered the possible changes in the groundwater table due to modifications to the terrain, loss of vegetation and the increase in soil erosion as a result of road construction".

Response

2.21 If it is decided to proceed with the 1992 Proposal, the conditions of determination will, in addition to requiring the matters set out in paragraph 2.15, require any contractors for construction and operation of the 1992 Proposal to develop and implement to the RTA's satisfaction procedures to monitor changes in the groundwater table due to modifications to the terrain, loss of vegetation and the increase in soil erosion as a result of road construction.

Noise Issues

2.22 At the meeting between RTA and EPA personnel on 17 March 1993, the EPA acknowledged that the control of noise on freeways was being addressed progressively by the RTA, and that the RTA's Interim Traffic Noise Policy was the most appropriate interim government policy at this time. The targets adopted in the 1992 EIS reflect or exceed those of the Interim Traffic Noise Policy. The EPA acknowledged that the points raised in the EPA's representation should be considered in that general light.

Following the meeting on 17 March 1993, the EPA wrote on 7 April 1993 to the RTA confirming, subject to conditions, the EPA's endorsement of the use of the RTA's Interim Traffic Noise Policy as an appropriate way for the RTA to fulfil its obligations

with respect to the 1992 EIS. A copy of the EPA's letter to the RTA dated 7 April 1993 is contained in Appendix 26 to this Assessment Report.

The conditions mentioned by the EPA in its letter were that:

(a) the RTA's Interim Traffic Noise Policy is to be considered the absolute minimum design objective; and

(b) during design, assessments should occur to identify areas not meeting TNL 55 and to have all practical measures applied to approach this goal.

To give effect to these conditions, it is proposed to establish a Project Liaison Group, and Local and School Liaison Groups, to make comments and recommendations concerning the design and implementation of the 1992 Proposal, and to appoint a representative of the EPA to each of those Groups.

Issue

2.23 Paragraph 3.1 of the EPA's representation states that "[there] is no reason given [in the EIS] why a particular monitoring location was chosen and no determination of the boundaries of the areas to which the results...apply".

Response

2.24 On 5 March 1993, the RTA wrote to Challis & Associates Pty Limited ("Challis")[170] and Wilkinson Murray Pty Limited ("Murray")[171] asking for professional opinions on whether, in light of this statement, any further information was required concerning the choice of monitoring sites and the determination of areas before the RTA made a decision concerning the 1992 Proposal.

Challis replied to the RTA's letter on 15 March 1993[172], and Murray replied to the RTA's letter on 18 March 1993[173]. Challis and Murray both advised that no further information was required before the RTA made a decision concerning the 1992 Proposal. Challis advised in his reply that "the reasons and rationale for adopting the 41 monitoring locations" were contained "in section 2.2 of [his] report no 6257-6-92". Murray set out in his reply a summary of the reasons for selecting monitoring locations.

Issue

2.25 Paragraph 3.1 of the EPA's representation states that "[it] appears that the East section of the Expressway corridor has not been sufficiently monitored, especially in quiet areas".

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170 See Appendix 27 to this Assessment Report.

171 See Appendix 28 to this Assessment Report.

172 See Appendix 29 to this Assessment Report.

173 See Appendix 30 to this Assessment Report.

Response

2.26 On 5 March 1993, the RTA wrote to Challis[174] asking for professional opinion on whether, in light of this statement, any further information was required concerning the monitoring of the East section of the 1992 Proposal before the RTA made a decision concerning the 1992 Proposal.

Challis replied to the RTA's letter on 15 March 1993[175]. Challis advised that no further information was required before the RTA made a decision concerning the 1992 Proposal. Challis advised in his reply that he "recorded background sound levels at 10 locations adjacent to [the east section of the expressway], with a nominal duration of 7 days data at each, to assess the background noise levels in quiet and other related areas".

Issue

2.27 Paragraph 3.1 of the EPA's representation states that "[there] are some inconsistencies in the reported data". Reference is made particularly to Table 6.8 of the Eastern EIS.

Response

2.28 On 5 March 1993, the RTA wrote to Challis[176] asking for professional opinion on whether this statement was correct.

Challis replied to the RTA's letter on 15 March 1993[177]. Challis advised in his reply as follows:

(a) There were two typographical errors in Table 6.8:

(1) Position No 38 is wrongly recorded as being 62.5dB(A) and should be recorded as 46.5db(A).

(2) Position No 2 is wrongly recorded as having a minimum $L_{A90(18hr)}$ value of 56.3db(A) and should be recorded as 46.3dB(A).

(b) These typographical errors do not invalidate the conclusions or recommendations in the Eastern EIS.

Issue

2.29 Paragraph 3.1 of the EPA's representation states that:

(a) "the [residential] areas likely to be affected by the [North West Transport Link]";

(b) "where the classifications [set in Appendix B of the Australian Standard AS1055.2 - 1989] apply"; and

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174 See Appendix 27 to this Assessment Report.

175 See Appendix 29 to this Assessment Report.

176 See Appendix 27 to this Assessment Report.

177 See Appendix 29 to this Assessment Report

(c) "the transition areas between the classified zones";

have not been sufficiently defined.

Response

2.30 On 5 March 1993, the RTA wrote to Challis[178] and Murray[179] asking for professional opinions on whether these statements were correct.

Challis replied to the RTA's letter on 15 March 1993[180], and Murray replied to the RTA's letter on 18 March 1993[181]. Challis and Murray both advised that no further information was required before the RTA made a decision concerning the 1992 Proposal. Challis advised in his reply that, having "nominated the lowest possible criterion, ie an R2 Zone, for approximately 90% of the Expressway, further reference to 4 possible diurnal time zones" was not necessary. Murray also advised in his reply that the methodology he had adopted covered the concerns raised by the EPA.

Issue

2.31 Paragraph 3.1 of the EPA's representation states that "at some locations there are considerable differences between the $L_{aeq,6h}$ and $L_{a90,T}$ levels...No explanation has been given as to the kind of noise sources which may have caused such discrepancies.

Response

2.32 On 5 March 1993, the RTA wrote to Challis[182] and Murray[183] asking for professional opinions on whether this statement was correct.

Challis replied to the RTA's letter on 15 March 1993[184], and Murray replied to the RTA's letter on 18 March 1993[185]. Challis and Murray both advised that no further information was required before the RTA made a decision concerning the 1992 Proposal. Challis advised in his reply that "the position [he had] taken [was] the ... most pragmatic possible in the circumstances". Murray advised in his reply that he was "confident that [the differences between $L_{aeq,6h}$ and $L_{a90,T}$ levels] are due to intermittent traffic flow at night-time which raises the [former] level without affecting the [latter] level".

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178 See Appendix 27 to this Assessment Report.

179 See Appendix 28 to this Assessment Report.

180 See Appendix 29 to this Assessment Report.

181 See Appendix 30 to this Assessment Report.

182 See Appendix 27 to this Assessment Report.

183 See Appendix 28 to this Assessment Report.

184 See Appendix 29 to this Assessment Report.

185 See Appendix 30 to this Assessment Report.

Issue

2.33 In paragraph 3.1 of the EPA's representation, it is stated that:

(a) "[the] use of the L_{aeq} and L_{a10} descriptors to interpret the existing ambient noise, particularly the use of L_{aeq6h} of $L_{a1,6h}$, to present night-time noise levels, instead of $L_{a90,t}$, often gives the improper impression that the existing noise levels are high"; and

(b) "it is considered that the $L_{a90,T}$ descriptor is more appropriate for the purpose of assessment of the significance of noise impact at night".

Response

2.34 The RTA's policy position is that the $L_{a90,T}$ descriptor represents the background noise level but ignores noise from intermittent sources such as vehicles, trains, aircraft and dogs. The RTA's Interim Traffic Noise Policy compares predicted noise levels with the existing noise levels using L_{eq} which takes into account existing sources of noise such as vehicles, trains, aircraft and dogs. The increase thus represents the change in acoustic environment as a result of the road project alone.

Issue

2.35 Paragraph 3.1 of the EPA's representation states that "the EISs and reports average the values of the descriptors over the areas and time, which disadvantages quiet areas, ascribing to some locations a noise level 5 dB higher than the levels actually measured. The EPA considers such interpretation of the existing noise environment data inappropriate".

Response

2.36 The EIS was based on preliminary road design plans which precluded the noise impact assessment at individual properties. In accordance with the RTA Interim Traffic Noise Policy which was released on 23 September 1992, once final road design plans have been approved, then noise measurements will be undertaken at the worst affected properties in order to determine the appropriate Noise Level Objective at each property. Noise mitigation measures will then be determined for those properties which are the worst affected. This will ensure that other properties are subject to noise levels below the Noise Level Objectives.

Issue

2.37 Paragraph 3.2 of the EPA's representation states that "none of the EISs or acoustical reports considers the impact of continuous vibration on buildings, or on people's amenity".

Response

2.38 On 5 March 1993, the RTA wrote to Challis[186] and Murray[187] asking for professional opinions on whether the RTA required any further information concerning these impacts before the RTA made a decision concerning the 1992 Proposal.

Challis replied to the RTA's letter on 15 March 1993[188], and Murray replied to the RTA's letter on 18 March 1993[189]. Challis and Murray both advised that no further information was required before the RTA made a decision concerning the 1992 Proposal. Challis advised in his reply that his "detailed instrumental assessment ... revealed no problems of continuous vibration". Murray recommended some further investigations concerning continuous vibration during construction. These were completed and Murray's recommendations in light of them were that both vibratory compactors and rock breakers can be used in constructing the 1992 Proposal providing that they operate no closer than the following distances from residential buildings: 15m (in the case of vibratory compactors) and 25m (in the case of rock breakers)[190].

Issue

2.39 Paragraph 3.3.1 of the EPA's representation states that "[traffic] noise level predictions for both sections of the [North West Transport Link] were based mainly on traffic density and traffic mix estimated for the year 2006...[There] are no details of the traffic mix used to predict the noise levels likely to be emitted from the East section of the [1992 Proposal]".

Response

2.40 On 5 March 1993, the RTA wrote to Challis[191] and Murray[192] asking for professional opinions on whether the RTA required any further information concerning traffic level predictions before the RTA made a decision concerning the 1992 Proposal.

Challis replied to the RTA's letter on 15 March 1993[193], and Murray replied to the RTA's letter on 18 March 1993[194]. Challis and Murray both advised that no further information was required before the RTA made a decision concerning the 1992 Proposal. Challis advised in his reply that his investigations were based on the traffic study provided by Denis Johnston & Associates, and that he increased the figures in that study to provide a higher, more conservative, figure for his own investigations. Murray

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186 See Appendix 27 to this Assessment Report.

187 See Appendix 28 to this Assessment Report.

188 See Appendix 29 to this Assessment Report.

189 See Appendix 30 to this Assessment Report

190 See Appendix 31, p4.

191 See Appendix 27 to this Assessment Report.

192 See Appendix 28 to this Assessment Report.

193 See Appendix 29 to this Assessment Report.

194 See Appendix 30 to this Assessment Report.

advised in his reply that the predictions were based on forecasts for the year 2006 and that "information [was also] provided ... regarding noise levels in both 2016 and 1996".

Issue

2.41 Paragraph 3.3.1 of the EPA's Letter states that "[the noise report for the Eastern EIS] assumes a speed of 90km/h in the noise level prediction".

Response

2.42 On 5 March 1993, the RTA wrote to Challis[195] asking for professional opinion on whether this statement was correct and on whether the RTA required any further information concerning this matter before the RTA made a decision concerning the 1992 Proposal.

Challis replied to the RTA's letter on 15 March 1993[196]. Challis advised that no further information was required before the RTA made a decision concerning the 1992 Proposal. Challis advised in his reply of the basis on which he had adopted the figure of 90 km/h, and advised that this approach was "realistic and appropriate ... to ensure that the roadside barriers ... will achieve the appropriate level of environmental amenity".

Issue

2.43 Paragraph 3.3.1 of the EPA's Letter states that "traffic noise levels for the West section have been calculated assuming that heavy truck exhaust will, by the year 2006, be lowered to a level of 1.2 m above road level...This does not take account of the initial noise impact".

Response

2.44 On 5 March 1993, the RTA wrote to Murray[197] asking for professional opinion on whether this statement was correct and on whether the RTA required any further information concerning traffic level predictions before the RTA made a decision concerning the 1992 Proposal.

Murray replied to the RTA's letter on 18 March 1993[198]. Murray advised that no further information was required before the RTA made a decision concerning the 1992 Proposal[199]. Murray advised in his reply that "the main traffic noise level predictions were made for the year 2006, based on the fact that truck exhausts would be lowered", but that his report "also indicates noise levels for 1996 on the assumption that truck exhaust heights would be at the level of today".

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195 See Appendix 27 to this Assessment Report.

196 See Appendix 29 to this Assessment Report.

197 See Appendix 28 to this Assessment Report.

198 See Appendix 30 to this Assessment Report.

199 See also Appendix 37 (p.2) in which Murray confirms that his assumptions on truck exhaust heights "lead to an accurate assessment of traffic noise impact".

Issue

2.45 Paragraph 3.3.2 of the EPA's Letter states that "[the noise report for the Eastern EIS] states that the [SPCC] adopted similar night-time criteria to that proposed in the EIS, ie $L_{aeq,6h}$ = 55dB. This statement is misleading as the L_{aeq} limit of 55dB given in the Environmental Noise Control Manual for intermittent noise and low density traffic was not meant to be applied as the night-time criterion".

Response

2.46 The criterion $L_{aeq,6h}$ = 55dB accords with the RTA's Interim Traffic Noise Policy.

Issue

2.47 Paragraph 3.5 of the EPA's Letter states that "[the] EISs do not provide data on the predicted noise levels for the Links' options without noise barriers".

Response

2.48 On 5 March 1993, the RTA wrote to Challis[200] and Murray[201] asking for professional opinions on whether the RTA required any further information concerning this matter before the RTA made a decision concerning the 1992 Proposal.

Challis replied to the RTA's letter on 15 March 1993[202], and Murray replied to the RTA's letter on 18 March 1993[203] Challis and Murray both advised that no further information was required before the RTA made a decision concerning the 1992 Proposal. Challis and Murray both advised in their replies that it was not necessary to contemplate the absence of noise barriers.

Issue

2.49 Paragraphs 3.3.2-3.3.3 of the EPA's representation propose that the appropriate noise criterion should be TNL=55dBA in order that, at a maximum, 10% of the community would be highly annoyed by the predicted traffic on the 1992 Proposal.

Response

2.50 Challis and Murray have considered the noise impacts of the 1992 Proposal in terms of the RTA's Interim Traffic Noise Policy. This Policy contains noise level objectives ("NLOs") for new roads which use the L_{eq} descriptor. The RTA, in formulating the Policy, examined the suitability of using TNL as a descriptor but decided that the lack of scientific validity for TNL precluded its use at this time. The Task Force on Road

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200 See Appendix 27 to this Assessment Report.

201 See Appendix 28 to this Assessment Report.

202 See Appendix 29 to this Assessment Report.

203 See Appendix 30 to this Assessment Report.

Traffic Noise [204] has produced a draft report which recommends against the adoption of TNL.

The NLO for sleeping hours is the existing noise level (measured in $L_{eq(8h)}$) plus 12dBA for quiet areas. The NLOs in the Policy have been chosen so as to represent a balance between what is environmentally desirable and what is practical and cost-effective to achieve.

Issue

2.51 The EPA' Submission also makes the following points concerning construction and operation of the 1992 Proposal:

(a) Paragraph 1 of the EPA's representation states that, if the 1992 Proposal is constructed, the premises on which the 1992 Proposal is constructed will be scheduled premises under the Noise Control Act 1975[205], and that "the developer" must obtain a licence from the EPA under that Act. Paragraph 3.2 of the EPA's Submission states that any application for such a licence will need to be supported by a noise impact statement "which should provide a current construction noise assessment and include proposals for noise mitigating measures" in relation to the matters set out in paragraph 3.2 of the EPA's representation. These statements are reiterated in paragraph 3.5 of the EPA's representation.

(b) Paragraph 3.4 of the EPA's representation states that noise control measures should "explore combinations of all possible measures, such as acoustical treatment of houses and noise barriers at the residential premises, in order to achieve the most effective and economic solution for traffic noise abatement".

(c) Paragraph 3.4 of the EPA's representation also states that, in designing noise control measures, consideration should be given to "sound transmission loss performance within the dominant traffic noise frequency range".

Response

2.52 The RTA's response to the matters in paragraphs 2.51(a)-(c) is as follows. If it is decided to proceed with the 1992 Proposal, the conditions of determination will, in addition to requiring compliance with the legislation referred to in paragraph 2.4:

(a) note that the EPA has advised the RTA that:

(1) the premises on which the 1992 Proposal is constructed will be scheduled premises under the Noise Control Act 1975;

(2) any contractor for construction of the 1992 Proposal must obtain such a licence from the EPA; and

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[204] The Task Force is comprised of representations of the EPA, Department of Planning, the RTA, the Department of Local Government, the Department of Housing, and Local Government and Shires Association.

[205] Section 18 of the Noise Control Act 1975 makes it an offence for an occupier of scheduled premises not to hold a pollution control licence issued under section 17A of the Noise Control Act 1975.

(3) any application for such a licence will need to be supported by a noise impact statement which should provide a current construction noise assessment and include proposals for noise mitigating measures in relation to the matters set out in paragraph 3.2 of the EPA's representation;

(b) require any contractor for construction of the 1992 Proposal:

(1) to develop and implement such a noise impact statement to the EPA's satisfaction; and

(2) to include in such statement combinations of noise mitigation measures, such as acoustical treatment of houses and noise barriers at the residential premises; and

(3) to ensure that, in designing those noise control measures, consideration is given to "sound transmission loss performance within the dominant traffic noise frequency range".

Air Quality Issues

2.53 At the meeting between RTA and EPA personnel on 17 March 1993, the EPA agreed that the issue of air quality was essentially a metropolitan-wide issue, and that monitoring and modelling efforts should be jointly focussed by the RTA and the EPA to that end rather than to specific long term monitoring of single projects. The EPA agreed that the points raised in the EPA's representation should be considered in this general light.

Following the meeting on 17 March 1993, the EPA wrote on 7 April 1993 to the RTA confirming, subject to conditions, the EPA's endorsement of the use of the RTA's Interim Air Monitoring Plan as an appropriate way for the RTA to fulfil its obligations with respect to the 1992 EIS. A copy of the EPA's letter to the RTA dated 7 April 1993 is contained in Appendix 26 to this Assessment Report.

The conditions mentioned by the EPA in its letter were that the RTA and the EPA should consent to develop:

(a) general monitoring studies; and

(b) monitoring of the 1992 Proposal to occur after completion to confirm air quality objectives.

To give effect to these conditions, it is proposed to require the operation of the 1992 Proposal to be monitored in accordance with any procedures agreed by the RTA and the EPA.

Issue

2.54 Paragraph 4.1 of the EPA's representation states that:

(a) "[the] EIS identified other air pollutants in addition to CO and NOx which are relevant to areas of high motor vehicle activity, but these were not measured"; and

(b) "pollutants such as hydrocarbons, particulate matter, lead, sulphur compounds, odours and toxic substances such as benzene, should be considered and an assessment made of their likely future impact".

Response

2.55 On 5 March 1993, the RTA wrote to Peter W Stephenson & Associates Pty Limited ("Stephenson")[206] for professional opinion in light of these statements before the RTA made a decision concerning the 1992 Proposal.

Stephenson replied to the RTA's letter on 12 March 1993[207] advising that no further information was required before the RTA made a decision concerning the 1992 Proposal.

Issue

2.56 Paragraph 4.2 of the EPA's representation states that "[the] overnight build-up of pollutants in areas of poor dispersion, such as valleys, is of concern" and suggests that, accordingly:

(a) "[an] assessment should be made of pollutant levels at the nearest residences and, if necessary, a buffer zone should be considered in order to comply with the [nitrogen dioxide] goals"; and

(b) "[the] impact on specific receptors like schools, nursing homes and hospitals should be addressed".

In paragraph 4.5 of the EPA's representation, these suggestions are reiterated when it is stated that "[the] long-term impact on specific receptors should be addressed, including those residences currently experiencing good air quality. A buffer zone may be considered as a means of achieving adequate air quality at those nearby residences".

Response

2.57 The RTA referred this issue to Stephenson in its letter of 5 March 1993[208]. Stephenson's reply[209] advised that no further monitoring was required before the RTA made a decision concerning the 1992 Proposal, but suggested that consideration should be given to monitoring data under actual operating conditions.

If it is decided to proceed with the 1992 Proposal, the conditions of determination will require any contractors for construction and operation of the 1992 Proposal to develop and implement to the RTA's satisfaction any procedures agreed with the EPA to

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206 A copy of the RTA's letter to Stephenson dated 5 March 1993 is contained in Appendix 32 to this Assessment Report.

207 A copy of Stephenson's letter to the RTA dated 12 March 1993 is contained in Appendix 33 to this Assessment Report.

208 See Appendix 32 to this Assessment Report.

209 See Appendix 33 to this Assessment Report.

monitor emissions of CO, NOx, hydrocarbons, particulate matter, lead, sulphur compounds and benzene during operation of the 1992 Proposal.

Issue

2.58 Paragraph 4.5 of the EPA's representation states that "[further] monitoring of the existing environment should be considered in order that existing air quality may be compared with all relevant health-based criteria. Particular emphasis should be given to road segments experiencing frequent traffic congestion and to those areas with poor air dispersion".

Similarly, paragraph 4.2 of the EPA's representation states that:

(a) "[monitoring] near busy roads for long periods should be considered so that existing air quality may be compared with all relevant health-based criteria";

(b) "[monitoring] for extended periods near the toll plazas on the M4 and M5 motorways should be considered in order to assess the likely future impact of a toll plaza on the North West Link"; and

(c) "[monitoring] of CO, NO_2 and PM-10 levels on a continuous basis for at least one month in each location might be sufficient".

Response

2.59 If it is decided to proceed with the 1992 Proposal, the conditions of determination will require any contractors for construction and operation of the 1992 Proposal to develop procedures for, and to implement to the RTA's satisfaction, such monitoring referred to in paragraph 2.58 as is agreed between the RTA and the EPA.

Issue

2.60 The EPA's representation also makes the following points concerning construction and operation of the 1992 Proposal:

(a) In its paragraph 4.2, the EPA's representation suggests addressing at the design stage issues relating to dispersal of air pollutants at tunnel portals and noise barriers.

If it is decided to proceed with the 1992 Proposal, the conditions of determination will require these issues to be addressed at the design stage.

(b) In its paragraph 4.3, the EPA's representation states that monitoring of dust levels will need to be undertaken during construction and "appropriate dust suppression techniques implemented to ensure that the ambient criteria are met".

If it is decided to proceed with the 1992 Proposal, the conditions of determination will require such monitoring and will require dust suppression techniques to be developed and implemented to the RTA's satisfaction to ensure that ambient criteria are met.

(c) In its paragraph 4.4, the EPA's representation states that continuous air quality monitoring at several locations may be necessary during operation of the 1992 Proposal "in order to verify predictions made in the EISs and also to follow long-term trends in air quality. Particular emphasis should be given to congested intersections on feeder roads and to areas beside the [Proposal] with poor dispersion, as well as to areas near tunnel portals".

If it is decided to proceed with the 1992 Proposal, the conditions of determination will require procedures for such monitoring to be developed and implemented to the RTA's satisfaction.

Soil Contamination Issues

Issue

2.61 Paragraph 5 of the EPA's representation states that "contaminated sites have not been identified in either EIS", and that "[there] will be a need to identify contaminated sites that are likely to be disturbed during the construction phase in the preparation of the Clause 64 Assessment prior to the occurrence of any construction on-site".

Following a meeting between RTA and EPA personnel on 17 March 1993, paragraph 5 of the EPA's representation is to be interpreted as meaning only that, if the RTA decides to proceed with the 1992 Proposal, the conditions of determination should require the undertaking of environmental audits to identify contaminated sites prior to construction.

Response

2.62 Potential contaminated sites are indicated in Figure 6.12 of the Eastern EIS, but it is correct that contaminated sites have not been identified in either the Eastern EIS or the Western EIS. If it is decided to proceed with the 1992 Proposal, the conditions of determination will, in addition to requiring compliance with the legislation referred to in paragraph 2.4, require the undertaking of environmental audits to the RTA's satisfaction to identify any contaminated sites which may exist and to prepare a management plan prior to construction.

3. Representation from the National Parks and Wildlife Service ("the NPWS")

3.1 The NPWS representation is contained in:

(a) a letter from the National Parks and Wildlife Service ("the NPWS") to the RTA dated 14 August 1992 ("the First NPWS Letter"); and

(b) a letter from the National Parks and Wildlife Service to the RTA dated 9 October 1992 ("the Second NPWS Letter").

A copy of the NPWS representation is contained in Appendix 34 to this Assessment Report.

The NPWS representation makes several statements which are considered in turn in paragraphs 3.2-3.9 below.

First Statement

Issue

3.2 The First NPWS Letter states (on page 2) that "the options chosen for development must be those that minimise any further loss of remnant bushland".

Response

3.3 The investigations carried out in the 1992 EIS have been with a view to minimising any further loss of remnant bushland[210].

Second Statement

Issue

3.4 The First NPWS Letter states (on pages 2-3) that "the Service strongly objects to the proposed expressway option [but] does not object to the proposed arterial upgrade option". The following reasons for this view are given (on page 3):

(a) "[It will not be possible] to contain all the effects of the proposed transport link to within the area of the actual road structure."

(b) "Significant increases in sedimentation and concentrated runoff in the short term and potentially in the long term are very difficult to prevent, and will result in degradation of adjoining and downstream natural areas."

(c) "[A] major road through or adjoining remnant urban bushland area will exacerbate its isolation from other similar areas reducing the long term viability of the area to support the maximum diversity of species of flora and fauna."

Response

3.5 These matters have been considered in the 1992 EIS[211].

Third Statement

Issue

3.6 The NPWS representation makes several statements concerning the need for, and adequacy of, a fauna impact statement:

(a) The First NPWS Letter states (on page 4) that "the Fauna Impact Statement is inadequate. Further survey is required to establish whether the proposal will have a significant impact on endangered species and their habitat".

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210 See Eastern EIS pp. 103-106; Western EIS pp. 295-297.

211 See Eastern EIS p. 86 (left and centre columns); Western EIS pp. 277-279.

(b) The First NPWS Letter states (on page 4) that "[should] a significant impact be established then a Fauna Impact Statement and licence application for each EIS would have to be "submitted to the Director of the Service".

(c) The Second NPWS Letter states (on page 1) that "the Director will need to have sufficient information to enable him to assess the impact on endangered fauna...The original report...was undertaken ...before the introduction of the current legislation.

(d) The Second NPWS Letter states (on page 1) that "[the working paper for the 1992 EIS on fauna and flora impacts] did not specifically aim to address the concerns of the current legislation".

(e) The Second NPWS Letter states (on page 1) that "[the 1992 EIS does] not provide sufficient information to support the conclusions in the [working papers] that endangered species do not occur on the development site", and that 3 items of work listed on page 2 of the Second NPWS Letter should be performed.

(f) The Second NPWS Letter states (on page 3) that only "[two] options of procedure for fully assessing the impact on threatened species are possible...The first is the production of a supplement to the [1992 EIS] covering the above points...[The second] is that the RTA, on advice from the Service, would be obliged to determine that a significant impact on endangered fauna is likely [and] would then proceed in the production of a FIS".

Response

3.7 For the reasons set out in paragraph 2.19-2.25 of Part 3 of this Assessment Report, the RTA decided at the time of the preparation of the 1992 EIS that no FIS was required in relation to "endangered fauna" within the study area of the 1992 EIS. Contrary to the statements referred to in paragraphs 3.6(c)-(d), this view was formed having regard to the requirements and concerns of the then current legislation.

In light of the statements in paragraph 3.6(e), the RTA contacted Mount King requiring Mount King to perform and report to the RTA on the 3 items of work listed on page 2 of the Second NPWS Letter. Mount King reported to the RTA[212]. On the basis of this report, the RTA is of the view that:

(a) no significant impact on endangered fauna is likely as a result of the construction and operation of the 1992 Proposal;

(b) no FIS or other document is required to be published in relation to "endangered fauna" within the study area of the 1992 EIS.

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[212] See Appendix 35 to this Assessment Report.

Fourth Statement

Issue

3.8 The NPWS representation makes several statements concerning aboriginal sites:

(a) The First NPWS Letter states (on page 4) that "[to] enable a complete assessment of the Aboriginal heritage along the route options, further archaeological survey in the areas of private property not surveyed for the EIS will be required".

(b) The First NPWS Letter also states (on page 4) that, if specified options are selected, "test excavation" at other specified sites "will be required".

(c) The First NPWS Letter states (on page 5) that:

(1) "buffer zones to prevent inadvertent damage [during construction to specified sites] will need to be determined in consultation with the Service and the Metropolitan Local Aboriginal Land Council";

(2) "temporary protective fencing should be erected around these sites"; and

(3) "[all] employees and contractors employed on the project should be informed of the presence of these sites and advised to remain outside the buffer zones and to prevent machinery from entering these buffer zones".

(d) The First NPWS Letter states (on page 5) that "[once] a route option is selected and construction proceeds, survey and monitoring will be required as detailed in Section 7.1 of the working paper by Dr L Haglund".

(e) The First NPWS Letter states (on page 5) that:

(1) "[the] Service also requires that minor adjustments be made to the proposal to avoid Sites CF1-5"; and

(2) "[the] potential archaeological sites should be tested prior to completion of the route design".

(f) The First NPWS Letter states (on page 5) that "the RTA should engage an archaeologist to design a management program [which] should include the views of the Metropolitan Local Aboriginal Land Council and Daruk Local Aboriginal Land Council. Consultation with the Service will also be required".

Response

3.9 If it is decided to proceed with the 1992 Proposal, the conditions of determination will:

(a) require construction of the 1992 Proposal to be carried out in compliance with the National Parks and Wildlife Act 1974 and, in particular, require any permissions and licences necessary under that Act to be obtained;

(b) require, prior to commencement of construction, a report from an archaeologist qualified in aboriginal heritage to confirm conclusions in the 1992 EIS as to the location and affectation of sites of significance;

(c) require the production of a management program by an archaeologist qualified in aboriginal matters;

(d) require buffer zones to prevent inadvertent damage to sites during construction, the zones to be determined in consultation with NPWS and the Metropolitan Local Aboriginal Land Council and the Daruk Local Aboriginal Land Council;

(e) require temporary protective fencing to be erected around these sites; and

(f) require survey and monitoring during construction as detailed in Section 7.1 of the working paper to the 1992 EIS by Dr L Haglund.

4. Referral of Representations to Consultants

4.1 As mentioned, the RTA sought and received supplementary advice from consultants to the 1992 EIS. Following the preparation of the Dames & Moore Summary as described in paragraph 3.4 of Part 2 of this Assessment Report, the RTA referred to Challis, Murray, Stephenson, R.W. Roberts and Associates Pty Limited ("Roberts"), TEC and SMEC, for comment the representations referred to in the Dames & Moore Summary which raised issues within their fields of expertise.

Copies of the comments of Challis, Murray, Stephenson, Roberts, TEC and SMEC are respectively contained in Appendix 36, Appendix 37, Appendix 38, Appendix 39, Appendix 40 and Appendix 41 to this Assessment Report. Particular comment is made below concerning the issues which were referred to those consultants and which related to noise, air quality, the proposed route through Darling Mills State Forest, and the proposed interchange at Pennant Hills Road.

Noise Issues

4.2 The noise issues raised in the representations included:

(a) appropriate design criteria for the 1992 Proposal;

(b) the accuracy of the measurements of night-time background noise levels;

(c) the consideration by Challis and Murray of the findings of the Commission of Inquiry into the 1989 Proposal;

(d) the assumptions made by Challis and Murray concerning "facade attenuation" (that is, the amount of attenuation of noise which occurs as a result of its passage through open windows); and

(e) the traffic modelling on which Challis' and Murray's assumptions were based.

4.3 Challis and Murray reviewed the issues raised by the representations to the 1992 EIS, and their comments are reflected in Part 6 of this Assessment Report. Both Challis and Murray, having examined and considered the noise issues raised in the representations, confirmed that, for the RTA's decision-making purposes in relation to the 1992 Proposal, the conclusions of theirs on which the 1992 EIS was based were sound. Murray's response deals in turn with the matters in paragraph 4.2. Challis' response deals with those matters more generally. It states that the noise assessments undertaken

by Murray and Challis constitute "the most exhaustive and detailed assessment of its type ever undertaken in Australia for an environmental study of this type", that the computations and procedures adopted were carefully reviewed in light of the issues raised in the representations to the 1992 EIS, and that they "present an accurate review and an objective assessment of the relevant acoustical issues involved in both the construction as well as in the future operation of" the 1992 Proposal.

4.4 Challis was also asked to comment further in relation to noise attenuation at Epping Heights Public School. A copy of his report is contained in Appendix 42 to this Assessment Report. His conclusions are[213] that:

(a) noise control barriers constructed in accordance with the 1992 EIS (5m) would mean peak traffic noise levels within the closest school rooms equal to or less than 47dBA with the windows on the northern facade fully opened;

(b) these levels would exceed the RTA Interim Traffic Noise Policy; and

(c) the levels would not exceed the RTA Interim Traffic Noise Policy when the windows are not fully opened.

He recommends that the noise barriers be increased in height (to 6m) to ensure compliance with the RTA Interim Traffic Noise Policy under all possible conditions.

4.5 Murray was asked to comment further in relation to noise attenuation at the Deaf & Blind Children's Centre. A copy of his report is contained in Appendix 43 to this Assessment Report. His conclusions were[214] that noise levels at the School for both Variation B and Variation C through Darling Mills State Forest would comply with Australian Standard 2107 for Open Space Teaching Areas and the Department of Public Works School Noise Guidelines.

Air Quality Issues

4.6 The air quality issues raised in the representations included:

(a) the existing levels of air pollution;

(b) concern that the 1992 Proposal would adversely affect regional and global air quality;

(c) the sufficiency and accuracy of the background ambient monitoring data;

(d) the accuracy and completeness of air pollution dispersion modelling, particularly in relation to Variation C through Darling Mills State Forest;

(e) the consideration of the findings of the Commission of Inquiry into the 1989 Proposal;

(f) the impacts of air pollutants other than CO and NOx; and

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213 See Appendix 42, p.6.

214 See Appendix 43, p2.

(g) air pollution in valleys and at toll gates.

4.7 Stephenson reviewed the issues raised by the representations to the 1992 EIS, and his comments are reflected in Part 6 of this Assessment Report. Having examined and considered the air quality issues in the representations, Stephenson confirmed that the conclusions of his on which the 1992 EIS was based were sound.

Darling Mills State Forest

4.8 As mentioned in paragraph 2.14 of Part 2 of this Assessment Report, four variations are proposed for the route of the 1992 Proposal through Darling Mills State Forest. The Western EIS, having examined the four variations, concluded[215] that the variation known as "Variation C"[216] represented the most viable compromise between loss of houses and loss of bushland, and recommended the adoption of "Variation C"[217] .

The Western EIS did not contain an analysis of Variation C in terms of noise and air quality separate from the analysis of Variation B.

Noise issues in relation to Variation C were analysed as part of the Working Paper on noise prepared for the Western EIS[218]. The conclusions of this Working Paper were that Variation C "will affect slightly fewer houses than" Variation B and that the "changes to the total number of residences affected ... are insignificant". Also, as mentioned at paragraph 4.5 above, Murray was asked to comment further on noise attenuation at the Deaf and Blind Children's Centre, and his conclusions were that noise levels for the School for both Variation B and C would comply with AS2107.

Air issues in relation to Variation C were analysed as part of the Working Paper on air quality prepared for the Western EIS[219]. The conclusions of this Working Paper were that "the difference in air quality impact terms would be marginal" between Variation C and other options. The modelling for air quality assumed the worst case of traffic and meteorological conditions, and this was equally applicable to Variation C and other options.

Pennant Hills Road Interchange

4.9 As mentioned in paragraph 6.1 of Part 2 of this Assessment Report, the RTA commissioned SMEC to investigate and report on possible variations to the Pennant Hills Road Interchange. Having considered a number of possible variations and noise, traffic and visual issues relating to them, SMEC concluded[220] that a diamond interchange, instead of the proposed loop ramp, would best meet community aspirations. The diamond interchange recommended by SMEC is illustrated in SMEC's

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215 See Western EIS p344.

216 See Western EIS Figure 41.

217 See Western EIS p367.

218 See Exhibit 30 section 4.9 and Figures 73 and 74.

219 See Exhibit 19 p.110.

220 See Appendix 20 p7.

report[221]. SMEC's report pointed out[222] that the adoption of this recommended interchange would require increasing the number of toll booths on the west-bound on-load ramp from 3 to 4, and correspondingly increasing the width of the toll plaza.

5. Letter from CTAG 19 March 1993

5.1 A copy of CTAG's letter of 19 March 1993 ("the CTAG Letter") is contained in Appendix 44 to this Assessment Report.

The CTAG Letter makes several statements or comments which are considered below in paragraphs 5.2 to 5.19.

First Statement

Issue

5.2 In paragraph 1 on page 2, the CTAG Letter states that "Appendix F of the EIS Working Paper, "Transport and Traffic Analysis", by Denis Johnston and Associates, clearly demonstrates that performance of the F2 corridor will not vary significantly between the major options at 5, 15, and 25 years from now. As well, data indicate neither negligible variations among options in traffic on local streets and arterial roads nor reductions in traffic on local streets and arterial roads". The CTAG Letter asks:

(a) "Does the RTA's Assessment reflect its expert consultant's findings that the F2 would not solve traffic problems on local streets and arterial roads?"

(b) "Does the RTA's Assessment reflect its expert consultant's findings that the F2 would not perform better than the alternatives in improving traffic flow?"

(c) "Is there another appropriate justification for building the road?"

(d) "If so, does such a justification appear in the EIS?"

Response

5.3 Paragraphs 3.3 to 3.11 of Part 4 of this Assessment Report describe the process by which strategic options for the North West Transport Link were developed and assessed leading to the 1992 Proposal. This process was conducted relying extensively on expert opinion on a variety of matters including strategic justification. The 1992 EIS reflects this expert opinion. This opinion is that there is a clear need for a transport link in the corridor, and the 1992 Proposal best meets those needs.

Second Statement

Issue

5.4 In paragraph 2 on page 2, the CTAG Letter states that the Working Paper "Social Impact Assessment" concludes on page 47 that "neither option works well...neither

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221 See Figure labelled "Acoustic Barrier Wall Heights Variation C" in Appendix 22.

222 See Appendix 22 p3.

option is considered desirable...the overall social impact is equally adverse for both options", and on page 48 that "there are relatively few mitigative measures which may be employed to ameliorate adverse impacts". The CTAG Letter asks:

(a) "Is this considered opinion reflected in the RTA's Assessment?"

(b) "Is it related in the Assessment to the Denis Johnston Working Paper...to demonstrate that severe social and environmental damage would be inflicted to no good purpose?"

Response

5.5 The consideration of ameliorative measures in the 1992 EIS is extensive. If the 1992 Proposal proceeds, the RTA will appoint a Community and Environment Liaison Officer with wide powers to consult with the local community and to advise on the ameliorative measures to be implemented.

Third Statement

Issue

5.6 In paragraph 3 on page 2, the CTAG Letter states that the F2 tollways should have been rejected as major options on two grounds:

(a) "The 1990 findings of the F2 Commission of Inquiry suggest that the F2 Castlereagh Tollway East presented in the 1989 EIS was not justified on economic, social and environmental grounds and that a need for the proposal had not been established...Denis Johnston indicates that no need was discovered subsequently".

(b) "Stone found that there were few opportunities to mitigate the adverse impacts on the community"

Response

5.7 As mentioned in paragraph 5.3 above, the 1992 EIS process was conducted relying extensively on expert opinion on a variety of matters including strategic justification. The 1992 EIS reflects this expert opinion. This opinion is that there is a clear need for a transport link in the corridor, and the 1992 Proposal best meets those needs. The 1989 Proposal is no longer proposed. The 1992 Proposal differs from the 1989 Proposal by including changes to location at the eastern end, a tunnel at North Epping, and by including the section from Pennant Hills Road to Old Windsor Road and an exclusive busway west of Epping which can be converted to light rail at a later date. As mentioned in paragraph 5.5 above, the consideration of ameliorative measures in the 1992 EIS is extensive. If the 1992 Proposal proceeds, the RTA will appoint a Community and Environment Liaison Officer with wide powers to consult with the local community and to advise on the ameliorative measures to be implemented.

Fourth Statement

Issue

5.8 In paragraph (a) on page 3, the CTAG Letter states that "Road Transport - Future Directions" was "suppressed at the time when documents data and findings would have reflected badly on justification of the F2 Tollway as proposed in 1992. Instead, Roads 2000 - an earlier document discredited by RTFD as an RTA shopping list was employed" in the 1992 EIS.

Response

5.9 The Future Directions Study of the RTA commenced after the start of the preparation of the 1992 EIS. The study is in fact referred to in section 5.4.1 of the Eastern EIS. The integrated transport philosophy of the 1992 EIS is consistent with Future Directions suggestions of improving public transport, providing a strategic road corridor, and providing an integrated approach to transport planning. Roads 2000 described the proposals for road development in Sydney as agreed with Government in 1978. The F2 was included in that document. The release of the RTFD was not suppressed by the RTA.

Fifth Statement

Issue

5.10 In paragraph (b) on page 3, the CTAG Letter states that "the true state of the existing noise environment in the area through which the F2 would pass has been falsified by data manipulation, in breach of clause 65 of the Regulation".

Response

5.11 There has been no breach of clause 65 of the EPA Regulation. As mentioned in paragraphs 4.1 to 4.5 of Part 5 of this Assessment Report, the RTA referred various matters raised by representations to the 1992 EIS to its noise consultants for further comment, and those consultants confirmed that, for the RTA's decision-making purposes in relation to the 1992 Proposal, the conclusions of theirs on which the 1992 EIS was based were sound.

Sixth Statement

Issue

5.12 In paragraph (c) on page 3, the CTAG Letter states that "traffic data published in the [1992 EIS] show major traffic desire lines crossing the corridor, rather than along it, showing agreement with the [findings of the 1989-1990] Commission of Inquiry that these claims are unfounded".

Response

5.13 As mentioned in paragraph 5.3 above, paragraphs 3.3 to 3.11 of Part 4 of this Assessment Report describe the process by which strategic options for the North West Transport Link were developed and assessed leading to the 1992 Proposal. This process

was conducted relying extensively on expert opinion on a variety of matters including strategic justification. The 1992 EIS reflects this expert opinion. This opinion is that there is a clear need for a transport link in the corridor, and the 1992 Proposal best meets those needs. As mentioned in paragraph 5.7 above, the 1989 Proposal is no longer proposed. The 1992 Proposal differs from the 1989 Proposal by including a busway which can be converted to light rail at a later date. In addition, a benefit of providing an east-west route is to relieve congestion and so improve access across the corridor to both Parramatta and Hornsby. (See paragraph 9.1 of Part 6 of this Assessment Report).

Seventh Statement

Issue

5.14 In paragraph (d) on page 3, the CTAG Letter states that "[fixed] track public transport was studied, but not subjected to the same analysis of benefits as well as costs, as road options".

Response

5.15 The background working papers by Denis Johnston and Associates, 1991, after extensive analysis concluded that there was no justification for a new fixed rail system in the corridor at this time. The diverse patterns of origin and destination, the ability of a bus service to handle the demands, and the high cost of a rail system were all relevant factors. The options were not dismissed lightly and conversion of the busway to light rail at a later date will be possible.

Eighth Statement

Issue

5.16 In paragraph (e) on page 3, the CTAG Letter states that "finance is not addressed adequately [in the 1992 EIS] and remains a point of particular conjecture".

Response

5.17 Paragraph 9.1 of Part 5 of this Assessment Report sets out where the issue of the funding of the 1992 Proposal, particularly by tolls, was dealt with in the preparation of the 1992 EIS.

Ninth Statement

Issue

5.18 In paragraph (f) on page 3, the CTAG Letter states that "[strong] support was given in many submissions to a variation of a tunnel bypass of Epping Bridge, linking Epping Road to Beecroft Road north of Carlingford Road". The CTAG Letter asks:

(a) "Was this tunnel variation addressed adequately in the Assessment?"

(b) "Were further studies made to assess its practicality as a solution to the recognised traffic congestion caused by Epping Bridge?"

(c) "Will these matters be presented in a Supplementary EIS?"

Response

5.19 This option is like a combination of the Beecroft Road connection from the "Epping Bypass Proposal" and the tunnel and connection to Epping Road of the "Reservation - Epping Road Arterial."

Paragraph 3.6 of Part 4 of this Agreement sets out the consideration given to the Epping Bypass Proposal and the Reservation - Epping Road Arterial. This option would have poor performance in network terms because of its connection to Beecroft Road and would provide no alternative to Epping Road which would result in saturated traffic flows. It is not proposed to undertake further studies to assess the practicality of this option as a solution to the recognised traffic congestion caused by Epping Bridge, and it is not proposed to present these matters in a supplementary EIS.

6. Devlins Creek

6.1 As mentioned in paragraph 2.14 of Part 2 of this Assessment Report, two variations are proposed for the route of the 1992 Proposal through Devlins Creek. The Eastern EIS, having examined the two variations, recommended[223] the adoption of the variation known as the "southern alignment"[224] subject to implementing various mitigative measures[225].

7. Mahers Road & Pennant Hills Golf Club

7.1 As mentioned in paragraph 2.14 of Part 2 of this Assessment Report, these variations are proposed for the route of the 1992 Proposal near Mahers Road and Pennant Hills Golf Club. The Eastern EIS, having examined the two variations, recommended[226] the adoption of the variation known as the "southern alignment"[227] subject to the implementation of various mitigative measures[228].

As mentioned in paragraph 6.1 of Part 2 of this Assessment Report, the RTA commissioned SMEC to investigate and report on possible variations to the Pennant Hills Road Interchange. SMEC's report confirmed the southern alignment and rejected a more northerly alignment affecting the golf course.

8. Epping Interchange

8.1 As mentioned in paragraph 2.14 of Part 2 of this Assessment Report, it is proposed as part of the 1992 Proposal to carry out low-cost upgrading for a bus interchange at Epping Station and the construction of an underpass for buses beneath the Main

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223 See Eastern EIS P103 (right column) and p104 (centre column).

224 See Eastern EIS Figures 9.27-28 and Figure 9.42.

225 See Eastern EIS p104 (left column).

226 See Eastern EIS p74 (right column).

227 See Eastern EIS Figures 9.25, 9.27 and 9.39.

228 See Eastern EIS p104 (left column).

Northern Railway line ("Stage 1 Upgrading")[229]. It is also proposed, but not as a part of the 1992 Proposal, to undertake investigations for, and (depending on the results of the investigations) to carry out, future construction works relating to the interchange ("Stage 2 Upgrading").

8.2 As mentioned in paragraph 5.1 of Part 2 of this Assessment Report, the RTA commissioned TEC to provide a detailed examination of the effect of the Stage 1 Upgrading and the proposed closure of Sutherland Road on access to and from North Epping. TEC reported[230] that there would be an improvement in traffic access to and from North Epping as a result of the Stage 1 Upgrading.

8.3 One aspect of the Stage 1 Upgrading needs to be clarified. The Eastern EIS states[231] that two eastern kerb-side lanes of Beecroft Road south of the 1992 Proposal would be dedicated to buses. Figure 9.47 to the Eastern EIS on the other hand, does not show dedicated bus lanes but, rather, a signalised junction with Beecroft Road. The Stage 1 Upgrading includes the latter, not the former, arrangements for buses on Beecroft Road.

8.4 In relation to the Stage 2 Upgrading, the Eastern EIS recommended[232] the establishment of a task force comprised by representatives of the RTA, the State Rail Authority, the State Transit Authority and others to oversee the carrying out of investigations for any construction work relating to, the Stage 2 Upgrading.

9. Tollway Issues

9.1 As mentioned in paragraph 2.14 of Part 2 of this Assessment Report, there is a proposal to construct and operate toll plazas at the locations mentioned in those paragraphs. As mentioned in paragraphs 2.7 and 2.11 of Part 4 of this Assessment Report, the 1992 EIS examined the option of operating the proposed expressway along its entire length as a tollway. As mentioned there:

(a) a private tollway alternative is a means of securing funding where existing sources of funding are not available or are restricted; and

(b) recent changes to the State's road funding framework have restricted the sources of available funding[233].

Those changes are described in a letter from the RTA to the Community Consultative Committee which is reproduced in full in the Addendum to the Western EIS. The consequent need for alternative funding sources was discussed with the Community Consultative Committee at a meeting with it on 12 December 1991.

Also as mentioned in the Addendum, tolling would allow construction of the 1992 Proposal, to meet the need for it outlined in Chapter 3 of the Western EIS, without the potential delays associated with the uncertainties of public funding.

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229 See Western EIS p81 (left and centre column).

230 See Appendix 40, pp.11 & 13. See also Appendix 21 pp12-14.

231 See Eastern EIS p81 (left column).

232 See Eastern EIS p83 (centre and right columns).

233 See Western EIS addendum p3.

The Addendum considered 2 systems of toll collection, including the ETC ("Electronic Toll Collection") System, the question of how many times tolls should be collected along the route of the 1992 Proposal, and the effect of tolling on traffic on the 1992 Proposal and arterial roads. This consideration led to the adoption of the preferred option for tolling described in 2.14(g) of Part 2 of this Assessment Report: namely, tolling plazas constructed and operated between Culloden and Balaclava Roads and on the east-bound off-load and the west-bound on-load ramps at Pennant Hills Road. The environmental impacts of this option were then assessed for 2 possible routes through Darling Mills State Forest known as Variations B and C respectively.

The Addendum concluded that the impacts associated with tolling the proposed expressway would be minimal,[234] but that some additional (but minor) impacts would be experienced if the alignment through Darling Mills State Forest known as "Variation C" was adopted[235].

10. Commission of Inquiry

10.1 As mentioned in paragraph 2.5 of Part 2 of this Assessment Report, the findings of the Commission of Inquiry have received extensive consideration.

Appendix 8 to the Eastern EIS contains a summary of the findings of the Commissioner's Report and states where those findings have been addressed in the preparation of the Eastern EIS.

As mentioned in paragraph 1.8 of Part 2 of this Assessment Report, the Commissioner's Report also contains recommendations addressed to the possibility that the 1989 Proposal is built. These recommendations have been adopted in relation to the 1992 Proposal and are each reflected in the recommendations set out in Part 8 of this Assessment Report. The recommendations in subparagraphs (a), (b), (c), (d), (e), (f), (g), (h) and (i) of paragraph 1.8 of Part 2 are reflected respectively in recommendations 13.23, 13.15, 13.11, 13.19, 13.21, 5, 7 and 8, 10, and 11.1 of Part 8.

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234 Eastern EIS p108, Western EIS Addendum p31.

235 See Western EIS Addendum p27.

PART 6

CONSIDERATION OF REPRESENTATION TO 1992 EIS:

GENERAL MATTERS

1. INTRODUCTION

1.1 As mentioned in paragraph 3.4 of Part 2 of this Assessment Report, as representations were received, they were registered in numerical order of receipt and recorded as addressing the Eastern EIS, the Western EIS or both. Each representation was acknowledged as received by letter from the RTA.

A "representation management system" was established similar to the system developed in relation to the environmental impact statement for the Sydney (Kingsford-Smith) Airport Third Runway. Using this system, a coded list of issues was created and the representations were classified according to which issues they addressed on that list.

Each representation was read at least three times, and summarised, and a summary of the representations was produced.

1.2 This Part 6 sets out in accordance with the "representation management system" the issues raised by the representations, and the RTA's responses to them.

1.3 No decision has yet been made as to whether the 1992 Proposal will proceed. Many of the RTA's responses in this Part 6 expressly say that no decision has yet been made. Where the responses do not expressly say so, such a statement is to be implied.

2. DESIGN ISSUES

2.1 Access

	Typical submissions include:
Access to Carlingford Court by way of local roads would considerably alter amenity of adjacent areas.	5723

Response:

The alternative giving rise to this issue is no longer proposed. The construction of the proposed expressway avoids this concern.

	Typical submissions include:
Hard to access Lane Cove State Recreation Area north of Talavera Road for recreation.	6074

Response:

Local access from Talavera Road north across the proposed expressway will be provided to Busaco Road, Culloden Road, Balaclava Road and Khartoum Road as shown on the plan set out in Appendix 45.

	Typical submissions include:
Upgrading of Carlingford Road effectively divides Epping and would affect North-South access to shops, trains, buses.	1024, 2033

Response

The alternative giving rise to this issue is no longer proposed. The construction of the proposed expressway avoids this concern.

	Typical submissions include:
The closures of Canyon Road and Linton Street would result in access problems.	635, 958, 6325, 6908

Response:

If it is decided to proceed with the proposed expressway, the conditions of determination will require the junction of Oakland Avenue and Windsor Road to be signalised to facilitate access into the area east of Windsor Road affected by road closures, and will require the RTA to investigate the provision of a bus turning facility within this precinct to cater for bus movements.

	Typical submissions include:
If exit lights at Eaton Road/Pennant Hills Road are removed access to Beecroft station and shops would be a problem and create a problem for children crossing Pennant Hills Road.	4743

Response:

As part of the reconstruction and widening currently being carried out on Pennant Hills Road between Mahers Road and Boundary Road Beecroft, a signalised intersection will be provided at Pennant Hills Road/ Eaton Road/ Copeland Road which includes dedicated right turn and shared left turn/through movements for traffic exiting Eaton Road. Signalised pedestrian movements across Pennant Hills Road, Eaton Road and Copeland Road will also be included.

	Typical submissions include:
Concern regarding the accessibility of Winston Hills Public School and the Winston Hills Shopping Centre.	417, 883, 1089, 1729, 2419, 2435, 3802, 5545, 6901, 7013, 7876

Response:

The preferred alternative proposed that there will be north-south vehicular and pedestrian access across the proposed expressway in the Winston Hills area via Langdon Road, Cropley Drive, Watkins Road and Windsor Road, and that there will be a pedestrian overbridge at Gooden Reserve linking the Shopping Centre and Winston Hills Public School with the adjacent residential area. If it is decided to proceed with the proposed expressway, the conditions of determination will also require the provisions of a pedestrian overbridge between Ixion Street and Heatherwood Court, and temporary pedestrian access facilities will be required during construction. Construction of such an overbridge does not entail any significant environmental impacts additional to those already dealt with in the EIS.

	Typical submissions include:
No pedestrian crossings on Pennant Hills Road between Moseley Street and North Rocks Road.	5156

Response:

The alternative giving rise to this concern is no longer proposed. The construction of the proposed expressway avoids this concern.

	Typical submissions include:
Concern regarding Fire Brigade access to Darling Mills Creek.	5523

Response:

If it is decided to proceed with the proposed expressway, the conditions of determination will require the provision of emergency vehicle access to be provided to service the local bushland areas. Access locations will be determined during the detailed design stage and following consultation between the RTA and the appropriate emergency services.

	Typical submissions include:
In order to construct the road and inspect the viaduct, service roads will damage the bushland. There should be access for ongoing maintenance.	2375, 3259, 3483, 6916, 14139

Response:

If it is decided to proceed with the proposed expressway, the conditions of determination will require the number and width of service roads, and the number of vehicles permitted access, to be restricted to minimise intrusion into bushland areas, and will require restoration after completion of service roads not permanently needed.

	Typical submissions include:
The residents from Beecroft, Cheltenham and North Epping will not benefit from the link and must suffer the cost of high transport levels through their suburbs without having access to the link.	5138

Response:

A major benefit of the proposed expressway will be the removal of traffic from arterial and local roads in Beecroft, Cheltenham and North Epping. This will improve local access as well as reduce the transport impact of existing traffic. There will be access to the proposed expressway to travel east from Beecroft Road.

	Typical submissions include:
Pedestrian walking tracks will be destroyed by construction of the F2.	7326

Response:

Pedestrian access will be available across the proposed expressway as illustrated on plan set out in Appendix 45.

	Typical submissions include:
North Ryde Industrial Area - east facing ramps be provided in the vicinity of North Ryde Industrial Area near Macquarie Centre.	4777, 6910

Response:

Access to the North Ryde Industrial Area from the east is now planned via Talavera and Waterloo Roads from Lane Cove Road and from Herring Road off Epping Road. Should the proposed expressway proceed, it is unlikely that east-facing ramps at (say) Herring Road would be feasible. Any further access proposals will be examined if a warrant exists in the future.

2.2 Access Ramps

	Typical submissions include:
Many access points have been eliminated to maximise returns to the private operator. Access to the expressway west of Pennant Hills Road is limited.	876, 1544, 3076, 3088, 3830, 4357, 4361, 5510, 5516, 5564, 7927

Response:

No access points west of Pennant Hills Road have been eliminated. By its nature, an expressway is an access controlled facility for through traffic ie regional movements as compared to local area trips. A function of this proposal, as part of the Sydney Orbital Route, is the "linking of all major incoming highways for quick distribution across the city" as outlined in the Roads 2000 Strategy Plan in March 1987. The three access locations proposed west of Pennant Hills Road are in conformity with that strategy namely the signalised at-grade intersection with Old Windsor Road/Abbott Road, the grade separation with Windsor Road and the grade separation with Pennant Hills Road. The proposed expressway will supplement the existing road network and its provision would alleviate congestion on the existing system by reducing through traffic on arterial roads and local streets.

	Typical submissions include:
The addition of access ramps at Old Windsor Road has greatly increased the ground consumed by the tollway and pushed it closer to properties than could have been envisaged by any fair minded person.	1026, 6965

Response:

When the road reservation was put in place, the main corridor was to the north of Abbott Road with access ramps to Abbott Road and Old Windsor Road. The current design meets the current or planned arterial role of Abbott Road and provides for future extension of the expressway to the west.

	Typical submissions include:
If the project goes ahead every effort must be made to move the ramps at Abbott Road toward the factories and to maximise the excavation of the motorway.	2226, 6965

Response:

Geometric parameters preclude moving the ramp arrangement further west than proposed. The issue of maximising of excavation has already been addressed in developing the concept for the proposed expressway set out in the EIS. Wherever practicable the proposed expressway will be in excavation.

2.3 Alternatives

	Typical submissions include:
Options not fully investigated in EIS were omitted because they could solve traffic problems but could not be built as a tollway.	5219, 6932

Response:

A wide range of options was developed, as set out in the EIS, during the extensive community consultation phase. These were progressively evaluated with full investigation of two preferred options. It is not correct that options that could not be built as a tollway were not investigated.

	Typical submissions include:
Failure to give sufficient consideration to alternative choice of routes or bus options.	875, 6378, 6884,6979

Response:

The EIS and background working papers detail the extensive options considered in addressing the transport needs of the North West Transport Link.

Studies of travel demand based on population density and origin/destination information resulted in a number of alternatives being evaluated. As a result of the studies the proposed expressway (which includes a busway) is now proposed.

	Typical submissions include:
Choice of routes and an exclusive bus lane were limited political choices.	6884

Response:

The proposal for a busway and expressway emerged from consideration of a wide range of options and was supported by the Department of Transport which assisted in detailed evaluation of demand and available public transport carried out by the consultant (Transport Environmental Consultant).

	Typical submissions include:
The Reservation/Epping Road option did not proceed to full investigation.	727, 1138, 2712, 4886, 5219, 6169, 6270, 6932, 7299, 7305,

Response:

The Reservation/Epping Road arterial option was fully examined and considered to fail in respect of resulting deficiency in network flexibility to accept future growth and traffic rearrangement under abnormal traffic conditions. There was some community support for this option. Illustrative information of this option was included in the public exhibition to allow public comment regarding the judgment that this option not proceed. The "Reservation Epping Road Arterial" option performed at a similar level to the expressway option but was rejected because it was more expensive, provided less network flexibility, entailed the construction of numerous fly-overs on Epping Road which would be disruptive and prone to expenditure over-run, was not as suitable for operation as a toll road, did not allow Epping Road to act as a distributor road for Macquarie University, North Ryde Business Park and other adjacent land uses, and did not allow the exclusive bus lane facilities to be as easily developed along the full length of its route.

	Typical submissions include:
Carlingford Road option is obviously too complex and cost loaded so that it will not be considered a viable alternative.	4886, 5155, 5173, 6168, 7369

Response:

The Carlingford Road option was developed to a standard to meet the realistic transport needs of the community. In order to mitigate the environmental effects of this option and to meet traffic capacity needs there was no alternative to the introduction of complex traffic arrangements and noise mitigation measures. The reasons for rejection of the Carlingford Road option are set out in Section 11 of the Eastern EIS.

	Typical submissions include:
Why is the F2 an option when the Commission of Inquiry recommended against building it?	2948

Response:

The proposed expressway (which includes a busway) is a different proposal from the proposal in the 1989 EIS considered by the Commission of Inquiry. The findings of the Commission of Inquiry were to retain the existing corridor for at least 10 years, and to undertake a detailed public transport study. The current proposal has been developed after implementing these findings. The findings of the Commission of Inquiry did not relate to that part of the corridor west of Pennant Hills Road.

	Typical submissions include:
Alternatives other than options 1 and 2 should have been considered.	147, 149, 157, 176, 188, 227, 404, 673, 721, 750, 810, 816, 874, 1033, 1417, 1418, 1505, 1536, 1595, 1597, 1611, 1615, 1689, 1713, 1734, 1817, 1853, 1931, 2090, 2150, 2286, 2346, 2354, 2356, 2387, 2639, 2668, 2687, 2723, 2738, 2747, 2756, 2757, 2764, 2766, 2773, 2789, 2809, 2819, 2823, 2882, 2883, 2888, 2895, 2901, 2907, 2913, 2914, 2918, 2925, 2945, 2948, 3094, 3104, 3108, 3108, 3135, 3222, 3226, 3243, 3247, 3253, 3255, 3262, 3264, 3316, 3322, 3325, 3373, 3380, 3381, 3382, 3388, 3402, 3450, 3468, 3515, 3547, 3559, 3560, 3565, 3608, 3649, 3658, 3681, 3777, 3964, 3970, 3972, 3973, 3986, 4024, 4031, 4032, 4043, 4045, 4057, 4065, 4081, 4508, 4776, 4812, 4813, 4814, 4821, 4930, 4836, 4838, 4878, 4885, 4886, 4887, 4889, 4895, 4904, 4905, 4906, 4910, 4920, 4923, 4931, 4939, 4970, 5078, 5082, 5084, 5091, 5093, 5099, 5109, 5110, 5127, 5134, 5138, 5150, 5154, 5155, 5170, 5182, 5183, 5196, 5201, 5204, 5219, 5220,

	5221, 5225, 5236, 5242, 5244, 5261, 5264, 5266, 5269, 5273, 5278, 5286, 5320, 5347, 5374, 5444, 5732, 5738, 5741, 5740, 5742, 5747, 5749, 5752, 5754, 5769, 5782, 5784, 5786, 5788, 5799, 5800, 5801, 5854, 5858, 5861, 5866, 5868, 5875, 5896, 5901, 5906, 5919, 5920, 5927, 5929, 5930, 5931, 5947, 5948, 5950, 5961, 5978, 5979, 5992, 5995, 6002, 6028, 6029, 6034, 6038, 6039, 6040. 6042, 6043, 6044, 6047, 6048, 6058, 6060, 6066, 6081, 6082,.6086, 6093, 6106, 6114, 6115, 6119, 6127, 6128, 6130, 6135, 6136, 6139, 6140, 6149, 6154, 6157, 6167, 6169, 6170, 6175, 6162, 6263, 6269, 6270, 6341, 6346, 6353, 6365, 6378, 6804, 6883, 6884, 6890, 6892, 6896, 6905, 6912, 6922, 6979, 6996, 7011, 7156, 7158, 7169, 7174, 7205, 7206, 7209, 7213, 7215, 7220, 7245, 7246, 7246, 7255, 7258, 7259, 7286, 7287, 7289, 7290, 7292, 7293, 7296, 7304, 7305, 7306, 7310, 7311, 7316, 7318, 7325, 7326, 7328, 7332, 7334, 7336, 7341, 7346, 7349, 7355, 7368, 7369, 7393, 7394, 7398, 7427, 7465, 7551, 7635, 7644, 7731, 7780, 7793, 7913, 7927, 8073, 10782, 10910, 10992, 10993, 11002, 11055, 11058, 11355, 11481, 11494, 12371, 12512, 12576, 12704, 12774, 12846, 13077, 13298, 13426, 14040, 14057, 14063, 14137, 14207, 14208

Response:

This issue is dealt with in detail in paragraphs 2.1-2.11 of Part 6 of this Assessment Report.

The general conclusions of the Eastern EIS and the Western EIS are as follows.

Eastern EIS

Five strategic transport options were developed and assessed for the Eastern EIS:

(a) the "do nothing option";

(b) the "traffic calming option";

(c) the "stand-alone public transport option";

(d) the "arterial upgrade option"; and

(e) the "expressway option".

Concerning these strategic options, the conclusions of the Eastern EIS were as follows:

(a) Neither the "do nothing option" nor the "traffic calming option" "would adequately service the requirements for travel and the transport infrastructure for north western Sydney, although...traffic calming principles could be integrated with other options to positive effect".

(b) The "stand-alone public transport" option "would generally [result in less severe environmental effects] than [options involving] road construction [but] the effects on bushland and severance would be similar [and the] forecast travel demand and the needs of freight and other commercial traffic are unlikely to be met by this option".

(c) The demonstrated transport need will best be met by an integrated transport strategy.

Four principal road options were developed from a wide range of options for assessment in the Eastern EIS:

(a) three "arterial road upgrade options", namely:

(1) the "Epping Bypass Arterial" option;

(2) the "Reservation Epping Road Arterial" option; and

(3) the "Pennant Hills - Carlingford - Epping Road Arterial" option; and

(b) an expressway option.

Concerning these options, the conclusions of the Eastern EIS were as follows:

(a) The "Epping Bypass Arterial" option "does not offer a sufficiently attractive increase in transport effectiveness to merit more detailed scrutiny".

(b) The "Reservation Epping Road Arterial" option "[fails] in respect of resulting deficiency in network flexibility to accept future growth and traffic rearrangement under abnormal traffic conditions".

The remaining options, the "Pennant Hills - Carlingford - Epping Road Arterial" option and the expressway option, were then assessed for their potential environmental effects, and mitigative measures proposed. In the case of the expressway option, the potential environmental effects of its operation as a tollway were also assessed.

Western EIS

Four strategic transport options were developed and assessed for the Western EIS:

(a) the "demand management option";

(b) the "traffic calming option";

(c) the "improving public transport option"; and

(d) the option of providing "additional road capacity in the transport corridor".

Concerning these strategic options, the conclusions of the Western EIS were as follows:

(a) "Demand management would require changes in social attitudes, public will and government policy which could...not provide a solution to the area's traffic congestion over the next...20 years.

(b) "[Traffic] calming on heavily traffic roads would be difficult to achieve, particularly in peak periods.[Traffic] calming can only be included as a long-term goal which may be partially achievable".

(c) "There are significant constraints on developing a new light or conventional railway service.[Public] transport [will] not provide a total solution because it would not serve the needs of the large number of commuters who do not, or cannot, use public transport".

(d) "The preferred alternative is therefore to provide an integrated strategy involving additional road space plus a new busway which could one day be converted to light rail".

Over 50 possible alignments for such an integrated road and busway were developed leading to two "shortlisted" alignments. As mentioned in paragraph 2.12 of Part 2 of this Assessment Report, both options involved an expressway and busway. In the first option, the expressway and busway continue to Pennant Hills Road and beyond. In the second option, the expressway and busway do not continue beyond Pennant Hills Road. Instead, the busway is routed along Barclay Road and North Rocks Road to Pennant Hills Road, and the expressway ends at Pennant Hills Road.

These options were then assessed for their potential environmental effects, and mitigative measures proposed. In the case of the expressway option, the potential environmental effects of its operation as a tollway were also assessed.

	Typical submissions include:
The expressway would duplicate a road that already exists for no good social or economic reason.	399, 7519

Response:

The existing roads do not have the capacity to meet the transport needs of the region. This was fully evaluated by detailed investigation and by extensive community consultation referred to in the EIS. The social and economic aspects for the proposed expressway are set out in the EIS.

	Typical submissions include:
Construction of flyovers at North Rocks/Pennant Hills Road, and at Epping Railway would relieve congestion. Noise buffers, pedestrian overpasses and widenings would be needed to meet local concerns.	399, 875, 6378

Response:

The essential weakness in the current network is that there is no continuous east-west route servicing this growth corridor. Roads such as Beecroft Road, Pennant Hills Road, Windsor Road and Old Windsor Road must carry both north-south and east-west traffic. Fly-overs alone cannot correct this situation.

	Typical submissions include:
Concerns regarding impact of widening of Pennant Hills Road on Church of Jesus Christ of Latter Day Saints	426, 427, 428, 479, 922, 947, 1048, 1712, 2079, 2149, 2234, 2657, 3206, 3241, 3313, 3351, 3376, 3542, 3566, 3959, 4003, 4107, 5111, 5246, 5863, 5945, 6051, 6374, 7391, 7499, 7632

Response:

The alternative giving rise to this issue is no longer proposed. The construction of the proposed expressway avoids this concern. Representations received on this matter are contained in Volume 4 of Exhibit 42.

2.4 Cyclists

	Typical submissions include:
Provision should be made for cyclists, bicycle security parking and low-stress crossing facilities, both within the proposed expressway and in adjoining areas.	6028, 6075, 6889, 6892, 6895, 6910, 7234, 7780, 7839, 13598

Response:

Provision will be made for cyclists on the proposed expressway in the combined bicycle and breakdown lane. Provision of such bicycle facilities is RTA policy. Cyclists will be able to cross the proposed expressway at vehicular and pedestrian underbridges and overpasses.

	Typical submissions include:
Cyclists on the expressway would create a safety hazard. Cyclists are concerned about shallow V shaped drainage grates becoming commonplace on freeways and tollways.	6884, 6890, 6910, 8209

Response:

Any grates placed in the gutter would be suitable for bicycles. Provision will be made for cyclists on the expressway in the combined bicycle and breakdown lane independent of the proposed vehicular lanes.

	Typical submissions include:
Cycle separation from traffic or other safe means are required at exit and entry ramps to avoid cycle/traffic conflicts	6889

Response:

As stated in section 9.3.6 of the Eastern EIS, there will be localised widening of shoulders to reduce the hazard of cyclists crossing ramps.

	Typical submissions include:
Cycle ramps at Cropley Drive and Barclay Road are suggested.	6889

Response:

At this stage, it is not proposed to provide additional cycle exit and entry ramps. Discussions will be held with the local community during the design stage and the Bicycle Institute of NSW will be consulted.

2.5 Future Provision for Public Transport

	Typical submissions include:
Adequate provision be made in the freeway design for future public transport expansion to include light rail and/or high speed buses.	4288, 6894

Response:

The busway west of Beecroft Road will be designed to allow conversion to light-rail. East of the Epping Interchange, the bus priority is on Epping Road and could be converted if so decided.

2.6 Future Upgrades

	Typical submissions include:
As subsequent widening of structures is so disruptive provision should be made for future 3 lanes on structures.	2015

Response:

As indicated in the EIS, the proposed expressway is to be 2 lanes and a shoulder (in each direction). It is not proposed to provide wider structures. The traffic modelling indicates that the designed width will cater for the predicted traffic demand until 2006. It is RTA policy to provide sufficient capacity to meet strategic need rather than unrestrained peak demand.

2.7 Height of Earthworks/Structures

	Typical submissions include:
Somerset Road, Devlins Creek and Terrys Creek Bridge - Height of earthworks not shown. Concern regarding visual impact and accuracy of noise predictions. None of the diagrams in the Eastern EIS show the height of the structure. Difficult to understand what the height of the expressway will be.	2387, 2758, 3247, 3541, 4504, 4776, 4787, 4806, 5134, 5219, 5221, 5225, 5286, 5749, 5764, 5961, 6013, 6039, 6139, 10782, 14207

Response:

Indicative heights are indicated in the longitudinal sections in the diagrams in the eastern EIS and the Western EIS. The height of earthworks and the Terry's Creek Bridge as indicated on Sheet 6 of the Expressway Alignment in the Eastern EIS. The visual impacts of retaining walls and noise barriers are shown as Figure 9.48 of the artist's impression or the Norfolk Road Tunnel Eastern Portal. The noise impacts are described in the EIS. In addition, public site inspections were conducted along the entire route and dimensions indicated.

	Typical submissions include:
No heights are shown on the alignment sheets so it is not possible to form an impression of the structure's size and effect on the landscape.	90, 4905, 6884, 6890, 7336

Response:

The artists impressions in the EIS give an indication of the visual impact of the proposed expressway, and the elevation shown on the alignment sheets in the EIS is to scale and generally indicates the height of fill and cuts. The detail provided allows the relative heights of structures to be gauged. In addition, the site inspections conducted during the EIS exhibition period assisted people to gauge the relative height of structures. Final height at specific locations will be determined at the detail design stage.

2.8 Hydrology/Drainage

	Typical submissions include:
Concerns regarding hydrology, sedimentation, erosion, flooding and water quality impacts of the proposal.	734, 877, 935, 1024, 1207, 2217, 2712, 2882, 3088, 3214, 3255, 3427, 3881, 4320, 4361, 4747, 4821, 4957, 5510, 5516, 5545, 5578, 5734, 5757, 6185, 6197, 6881, 6908, 6913, 6923, 6973, 7087, 7341, 7539, 7701, 7927, 8917

Response:

The Scott and Furphy Devlin's Creek Drainage Study 1989 examined in detail the issues of flooding, drainage erosion and sedimentation in relation to construction of an expressway in the valley from Pennant Hills Road to the Main Northern Railway.

East of the Main Northern Railway the proposed expressway is clear of the valley and specific hydrological and flooding problems are avoided.

The SMEC background working paper on Civil Engineering details the investigation and design issues relating to the hydrological impacts of the proposed expressway west of Pennant Hills Road. This included liaison with the Upper Parramatta River Catchment Trust regarding mitigation of hydrological concerns.

Detailed hydrological aspects of the proposed expressway will be addressed in the final design of the project. This will include drainage, water quality, erosion, sedimentation, contaminated spillage containment and disposal and will involve consultation with the appropriate authorities including the Environment Protection Authority, Department of Conservation and Land Management, Waste Management Authority and the Upper Parramatta River Catchment Trust.

A licence for construction will be required from the EPA in accordance with the Clean Waters Act. This will include licence conditions as indicated in the EPA letter (see Appendix 26).

Detailed investigative reasons are set out in Chapter 24 of the Western EIS and Section 10.2.1 of the Eastern EIS.

	Typical submissions include:
Are adequate measures included to cope with flooding and run-off from the F2?	3088, 4389, 8917

Response:

These issues have been examined and reported in the Scott and Furphy Devlins Creek Drainage Study (1989) and the SMEC working paper (Exhibit 21) as set out above. These reports indicate that run-off and flooding issues can be adequately addressed in the detail design.

	Typical submissions include:
How will the RTA comply with the statutory requirements of the Rivers & Foreshores Improvement Act?	6908

Response:

The Rivers & Foreshores Improvement Act does not apply to the RTA. However, the RTA will nevertheless require compliance with the Act as a condition of approval.

	Typical submissions include:
Issues regarding hydrology, sedimentation, erosion, flooding and water quality, as they affect Upper Parramatta River.	6913

Response:

The appropriate treatment for waterways draining into the Upper Parramatta River has been discussed with the Upper Parramatta River Catchment Trust, and these consultations will continue during development of detailed design.

2.9 Lane Numbers

	Typical submissions include:
How many lanes between Pennant Hills Road and Beecroft Road?	85

Response:

The proposed expressway will have two traffic lanes in each direction and one dedicated bus lane in each direction. Access ramps are also provided.

2.10 Lighting and Headlight Glare

	Typical submissions include:
Concerns regarding the impact of expressway lighting on adjacent residences, especially at the toll gates. Screening of lights. No consideration of lights impact in the EIS.	1032, 1495, 1627, 2286, 3247, 4673, 4885, 5668, 7276, 7399, 8203

Response

These issues have been considered in the Eastern EIS (p.89). If it is decided to proceed with the proposed expressway, the conditions of determination will require the development and implementation, to the RTA's satisfaction, of a lighting plan for the proposed expressway (including the toll plazas) designed to minimise adverse lighting impacts on adjoining residences. That plan would provide for lighting at access ramps and merging areas and bus stops only. Other areas would not be lit. All lighting would be shielded to minimise impacts on adjoining areas.

	Typical submissions include:
Glare from headlights, lighting on tollway plaza, bus stops, or roads will severely damage amenity of the area and will cause sleep disturbance.	4872, 4885, 5607, 5645, 6883, 7276

Response:

If it is decided to proceed with the proposed expressway, the conditions of determination will require the development and implementation, to the RTA's satisfaction, of a lighting plan for the proposed expressway (including the toll plazas) designed to minimise adverse lighting impacts on adjoining properties. There would be provision to control headlight glare.

2.11 Local Government

	Typical submissions include:
Local government authorities raised many design issues including drainage, revegetation, noise, traffic, road closures, hydrology and development	4777, 6016, 6894, 6908, 6923

Response

Due to the very specific and detailed nature of the many issues raised, Councils will be consulted during final design in the first instance and will be consulted on an ongoing basis during construction.

2.12 Local Traffic

	Typical submissions include:
Local streets would be impacted if expressway is constructed.	497, 691, 1002, 1554, 1684, 1736, 2081, 2197, 2217, 2530, 2541, 3008, 3090, 3436, 3440, 3448, 3472, 3907, 4304, 4379, 4732, 4743, 4757, 4761, 4908, 5564, 5625, 5645, 5663, 5674, 5698, 5717, 5729, 6197, 6203, 6204, 6445, 6465, 6470, 6884, 6890, 6908, 6892, 6894, 6953, 7056, 7102, 7153, 7154, 7852, 7858, 7900, 7923, 8209, 10381, 12121

Response:

Removal of traffic from local streets is one reason for, and an outcome of, construction of an expressway such as the proposed expressway. Mitigative measures to enhance local traffic movements and residential amenity are generally LATM (Local Area Traffic Management) schemes and are usually the responsibility of the local council. The Authority will liaise with councils in the preparation of their traffic management plans with the objective of discouraging through traffic from using local streets whilst providing access for local residents. In general, traffic in local streets will be reduced by the proposed expressway.

2.13 Pavements

	Typical submissions include:
Alternative pavements, other than open-graded asphalt, can reduce tyre noise and may have a lower cost and have durability benefits. Open graded asphaltic concrete is not the best surface for the expressway. Concrete pavements can be used at a lower cost and higher safety and durability with lower tyre noise generation.	4364, 5133, 5645, 6181, 6231, 7224

Response:

If it is decided to proceed with the proposed expressway, the conditions of determination will require alternative pavement types to be evaluated at the detail design stage for ability to reduce noise. At this time the RTA considers open-graded asphalt to be the best proven technology for surface noise suppression, and the RTA will specify use of open-graded asphalt until a superior

product emerges. Open-graded asphalt also provides superior drainage and skid resistance properties.

2.14 Pedestrian Provision

	Typical submissions include:
Walking Tracks - Tracks will be destroyed by construction of the F2. Access to Darling Mills Forest will be denied. The Sydney to Blue Mountains walking track using Darling Mills Forest will be destroyed	7326, 7049, 6892

Response:

Pedestrian access will be available as illustrated in the plans set out in Appendix 45. Construction of the proposed expressway is not expected to destroy or deny these amenities.

	Typical submissions include:
A pedestrian overbridge is necessary in the vicinity of Old Beecroft Road.	5133

Response:

If it is decided to proceed with the proposed expressway, the conditions of determination will require the design of the Beecroft Road overbridge to be amended to provide pedestrian access. This amendment does not entail any significant environmental impacts additional to those already dealt with in the EIS.

	Typical submissions include:
Pedestrian access is necessary to walking tracks in the Orchard Road area.	4912, 6896

Response:

The current design allows for pedestrian access under the proposed expressway structure over Devlins Creek immediately east of Orchard Road as illustrated on the plan set out in Appendix 45.

	Typical submissions include:
Concerns regarding pedestrian access across Devlins Creek to Beecroft railway station.	6910, 7304

Response:

The current design allows for pedestrian access via a culvert under the proposed expressway just west of Murray Farm Road/Kirkham Street, the Murray Farm Road overbridge and a pedestrian overpass at Kent Street. This culvert is shown on Sheet 4 of the Expressway Alignment in the Eastern EIS.

	Typical submissions include:
Concerns as to where pedestrian and cyclist access across the expressway would be provided.	6094, 6140, 6362, 6892, 6901, 6908, 6910, 7234, 9290, 11216, 13441

Response:

Pedestrian access will be available as illustrated in the plan set out in Appendix 45. Cyclists will be able to cross the proposed expressway at road bridges and where pedestrian bridges or subways are provided. Where accesses illustrated on that plan are in addition to those considered in the EIS, their construction does not entail any significant environmental impacts additional to those already dealt with in the EIS. Cyclists would be able to use these facilities.

	Typical submissions include:
Concerns regarding pedestrian access across the expressway in the vicinity of Busaco Road.	2650, 4898, 7329, 7497, 7636

Response:

As a result of further examination, a pedestrian underpass will be provided at Busaco Road. The construction of such an underpass does not entail any significant environmental impacts additional to those already dealt with in the EIS.

	Typical submissions include:
Pedestrian provision is required across Windsor Road for Baulkham Hills Public School and Our Lady of Lourdes School.	635

Response:

The RTA envisages that the junction of Oakland Avenue and Windsor Road will be signalised and to include a signalised pedestrian crossing of Windsor Road which will cater for the needs for pedestrian access to the two schools.

	Typical submissions include:
Concerns regarding pedestrian access to Carmen Drive shops from Westmore Drive.	3830

Response:

Pedestrian access will be available via the Oakes Road bridge over the proposed expressway as illustrated on the plan set out in Appendix 45.

	Typical submissions include:
Concerns regarding pedestrian access through Darling Mills State Forest from Westmore Drive to Yale Close.	5698, 6884, 7049

Response:

Pedestrian access will be available across the proposed expressway as illustrated on the plan set out in Appendix 45.

	Typical submissions include:
Concerns regarding pedestrian access to Windsor Road from Linton Street and Canyon Road.	7056, 7154

Response:

A pedestrian connection from Linton Street to Canyon Road will be provided in the road reserve adjacent to the eastbound on-load ramp. This arrangement will permit access from Canyon Road

to Windsor Road. The construction of this connection does not entail any significant environmental impacts additional to those already dealt with in the EIS.

	Typical submissions include:
Concerns regarding existing pedestrian access from Allerton Road to Welham Street.	3483, 3564, 4787

Response:

Pedestrian access will be available under the proposed expressway at Devlins Creek Reserve.

	Typical submissions include:
Concerns regarding pedestrian access to Cheltenham railway station.	5755

Response:

Pedestrian access will be available via the Kent Street pedestrian overpass and the Beecroft Road overbridge. The design of the Beecroft Road overbridge will be amended to provide pedestrian access.

	Typical submissions include:
F2 will make access to Carlingford High School and Carlingford Court by pedestrians harder.	4778, 7917

Response:

Pedestrian and bicycle access will be available across the proposed expressway at 4 points including at Pennant Hills Road, Oakes Road, Murray Farm Road and under the Devlins Creek viaduct, these will allow access to Carlingford High School and Carlingford Court.

	Typical submissions include:
People will be unable to walk to shops and schools from West Epping when the expressway is constructed.	2948

Response:

Pedestrian access across the expressway corridor will be provided at the Beecroft Road overpass.

2.15 Risk/Safety

	Typical submissions include:
Concerns about risks to creeks and homes from accidents involving vehicles carrying dangerous goods.	1026, 1118, 1439, 2419, 6884, 6894, 4366, 4668, 5221, 5607, 5645, 6173, 6185, 6873, 6908, 7960

Response:

These concerns have been discussed in the Eastern EIS (p.88) and the Western EIS (p.323). The RTA will require the design of the proposed expressway to incorporate the mitigative measures set out there. The RTA will also require the development and implementation, to the RTA's satisfaction, of emergency plans for accidents from vehicles carrying dangerous goods.

	Typical submissions include:
Concerns regarding accident rates on expressways.	5685, 6884, 7304, 8015, 8209

Response:

These concerns have been considered in the Eastern EIS (p.88) and the Western EIS (p.199). Experience in New South Wales and other States, and overseas, indicates that expressways are inherently safer than arterial roads in terms of accidents. RTA data indicates that urban expressways have an accident rate of 39 accidents per 100 million vehicle kilometres while urban divided roads greater than four lanes have a rate of 152 accidents per 100 million vehicle kilometres.

2.16 Road Closures and Alterations

	Typical submissions include:
Road closures/alterations would inconvenience local residents/businesses. The social impact assessment working paper did not address the impact of the proposed road closures.	1544, 2217, 3088, 3449, 3802, 4389, 5530, 6884, 6908, 6956, 7213, 7876, 7891

Response:

The social impacts of road closures, and in particular the impacts of the closure of the junction of Junction Road with Windsor Road, were considered in the EIS. (See Section 10.54 of the Eastern EIS and Section 16 of the Western EIS). The closure of that junction is necessary to allow the proposed expressway interchange. Traffic which currently uses Junction Road near Windsor Road would use alternative routes such as the expressway (for longer distance trips originating from Old Windsor Road), Watkins Road/Arthur Street (for trips from the north), Asquith Avenue/Model Farms (for trips to and from the south).

	Typical submissions include:
Closure of Horwood Avenue and the alteration of Torrs Street.	2217, 2229, 3651, 3881, 6908. 6956

Response:

The RTA will liaise with Baulkham Hills Shire Council and investigate the provision of a new road linking Livingstone Avenue with Windsor Road opposite Oakland Avenue at a signalised intersection.

2.17 Route/Design Changes

	Typical submissions include:
Magnitude of the proposal was not anticipated. The proposal has changed from the original design.	3, 98, 107, 141, 177, 201, 209, 384, 389, 488, 523, 649, 670, 704, 729, 739, 759, 810, 885, 886, 887, 891, 907, 921, 925, 931, 935, 939, 963, 966, 968, 979, 982, 986, 995, 1004, 1018, 1029, 1042, 1118, 1160, 1223, 1315, 1418, 1423, 1461, 1487, 1488, 1494, 1505, 1532, 1594, 1596, 1612, 1620, 1622, 1626, 1627, 1684, 1699, 1702, 1728, 1730, 1736, 1742, 1765, 1810, 1868, 1917, 1919, 2081, 2124, 2125, 2197, 2237, 2354, 2358, 2377, 2378, 2424, 2426, 2428, 2466, 2530, 2637, 2655, 2747, 2758, 2880, 2882, 2914, 2938, 3045, 3052, 3064, 3067, 3070, 3090, 3092, 3115, 3151, 3160, 3214, 3219, 3226, 3247, 3257, 3375, 3384, 3424, 3432, 3438, 3442, 3453, 3464, 3468, 3472, 3526, 3545, 3556, 3565, 3570, 3577, 3583, 3601, 3684, 3684, 3696, 3743, 3762, 3767, 3771, 3772, 3802, 3815, 3830, 3833, 3837, 3913, 3964, 4089, 4098, 4100, 4275, 4278, 4279, 4281, 4290, 4295, 4314, 4316, 4331, 4357, 4360, 4361, 4362, 4379, 4387, 4416, 4431, 4441, 4445, 4452, 4456, 4494, 4504, 4508, 4555, 4673, 4677, 4705, 4709, 4710, 4727, 4734, 4743, 4750, 4759, 4761, 4764, 4788, 4838, 4851, 4887, 4892, 4897, 4911, 4912, 5080, 5089, 5090, 5160, 5161, 5216, 5237, 5243, 5248, 5272, 5317,

	5320, 5328, 5372, 5516, 5517, 5542, 5555, 5565, 5580, 5614, 5627, 5631, 5637, 5645, 5658, 5663, 5664, 5666, 5668, 5674, 5716, 5722, 5731, 5738, 5744, 5767, 5769, 5813, 5907, 5913, 5924, 5937, 5939, 5956, 6015, 6023, 6039, 6054, 6057, 6100, 6101, 6112, 6115, 6149, 6168, 6176, 6178, 6198, 6203, 6209, 6303, 6341, 6378, 6428, 6440, 6445, 6449, 6494, 6873, 6884, 6892, 6903, 6952, 6967, 6969, 6977, 6978, 6979, 7012, 7021, 7056, 7153, 7154, 7204, 7205, 7208, 7273, 7302, 7318, 7340, 7399, 7433, 7434, 7435, 7442, 7448, 7451, 7501, 7530, 7539, 7540, 7654, 7699, 7701, 7723, 7730, 7734, 7749, 7794, 7818, 7852, 7858, 7869, 7883, 7912, 7960, 7978, 8019, 8098, 8203, 8204, 8206, 8210, 8217, 8221, 9377, 9399, 9502, 9530, 9545, 9550, 9801, 10934, 10960, 11018, 11403, 11469, 12370, 12403, 12575, 12590, 12703, 12705, 12787, 12831, 12847, 12848, 12882, 12953, 13018, 13086, 13143, 13219, 13368, 13374, 13442, 13498, 13550, 13703, 14093

Response:

Planning for a proposed transport link commenced as early as 1951 with the release of the County of Cumberland Planning Scheme. The Scheme covered that part of the route of the proposed expressway east of Alma Road Ryde. The full length of reserve for the F2 Castlereagh Freeway had been set aside in planning instruments by the mid 1970's. The intention to include the route as part of the proposed Sydney Orbital Route was stated in Roads 2000. Concepts for the F2 Castlereagh Freeway have varied from 6 to 4 lanes. The proposal in the 1989 EIS was for a four-lane, expressway standard, major arterial road for both light and heavy vehicles. The 1992 EIS proposed expressway retains these characteristics. However, in response to community requests and current Government objectives, public transport is to be enhanced by the inclusion of, an exclusive busway. While the corridor was first set aside in the 1970's, it is appropriate to

consider a proposal to meet the transport needs apparent now and predicted during the current planning horizon.

	Typical submissions include:
Concerns regarding variations through Devlins Creek.	4, 10, 160, 99, 885, 201, 230, 399, 527, 679, 692, 876, 896, 950, 963, 968, 1160, 1619, 1715, 1728, 1966, 2124, 2286, 2428, 2541, 2665, 2882, 3052, 3064, 3067, 3070, 3081, 3087, 3151, 3424, 3438, 3472, 3684, 3696, 3771, 3830, 4032, 4279, 4300, 4364, 4387, 4452, 4709, 4764, 4892, 5088, 5604, 5610, 5637, 5645, 5697, 5795, 5937, 5997, 6098, 6115, 6341, 6449, 6471, 6494, 6499, 6884, 6958, 6977, 6978, 7049, 7206, 7539, 7564, 7777, 7787, 7795, 8025, 8098, 8203, 8221

Response:

The concerns regarding the variations through Devlins Creek are discussed in section 9.3.3 (p.25) of the Eastern EIS and mitigating measures are summarised in section 10.6 of the Eastern EIS. It is proposed to adopt the southern alignment for the reasons set out in the Eastern EIS. The southern alignment is recommended in order to avoid the worst aspects of permanent damage to the natural environment.

	Typical submissions include:
The proposal has changed from a freeway to a tollway.	2124, 2378, 2424, 2466, 3045, 3090, 3442, 3815, 3830, 3837, 4357, 4360, 4379, 4441, 4709, 4710, 4743, 4761, 5542, 5555, 5580, 5627, 5663, 5666, 5668, 5716, 5767, 7153, 7869, 7883, 8210, 8221, 8224, 10105, 10373, 10379

Response:

It is proposed to operate the proposed expressway as a tollway. The reasons for this proposal, and the environmental effects of the operation of the proposed expressway as a tollway, are set out in the Eastern EIS (at pages 78-9, 84, 89 and 108) and in the Addendum to the Western EIS. At the outset of preparation of the 1992 EIS, the Western expressway option was envisaged as a federally-funded national arterial project and therefore not a tollway. As outlined in the Addendum to the Western EIS, the National Arterial programme is to cease from July 1993. It is considered that the project can best be progressed by arranging for the total length from Lane Cove River to Old Windsor Road to be managed as a single toll facility with toll plazas between Culloden and Balaclava Roads in the east and on the ramps to Pennant Hills Road from the west.

	Typical submissions include:
The project has been over engineered for a project in a densely populated area.	7505

Response

The concept for the proposed expressway is in accordance with accepted AUSTROADS and RTA guidelines and practices. The RTA will require detailed design to be in accordance with AUSTROADS and RTA guidelines and practices. The nominal 2m median, 3.5m lanes, and 2.5m breakdown/cycle lanes produce a compact cross-section.

	Typical submissions include:
Disturbed that the design is only a concept.	2886

Response

There is need for community agreement to a concept prior to proceeding to detail design. The concept design was developed to a stage where realistic assessment of cost and impacts could be assessed for the purposes of the EIS.

2.18 Schools

	Typical submissions include:
Clarification regarding access to Matthew Pearce Public School.	93

Response:

Access to the 1992 Proposal will be by means of an at-grade intersection at Old Windsor Road/Abbott Road and at Windsor Road by means of a grade-separated with interchange. Vehicle overpasses would also be located at Langdon Road, Cropley Drive and Watkins Road.

	Typical submissions include:
Muirfield Technology High School requires access to Darling Mills Creek for science studies.	4367, 4744, 4746

Response:

Access from the Muirfield Technology High School to Darling Mills Creek would be available under the proposed expressway bridge over the creek tributary just east of the school. This access is illustrated on the plan contained in Appendix 45.

	Typical submissions include:
Concerns regarding provision for pedestrians and children from Baulkham Hills Public School and Our Lady of Lourdes School to cross a widened Windsor Road. Our Lady of Lourdes School will be affected by the proposed expressway - part of one classroom will be demolished.	958, 5530, 7876

Response:

The RTA will require the junction of Oakland Avenue and Windsor Road to be signalised and to include a signalised pedestrian crossing of Windsor Road. Part of one classroom at Our Lady of Lourdes School is affected by the current proposal. Realignment at the school will occur in close consultation with the school.

2.19 Shadow Effect

	Typical submissions include:
Noise barriers and retaining walls will reduce light and sunshine into properties.	1532, 3449

Response:

Noise barriers and retaining walls will be erected as close to the edge of the roadway as possible to provide maximum noise attenuation and to reduce over-shadowing effects. Where possible landscaping will be carried out to reduce the visual impact. The final choice of barrier design and location (including shadow aspects) will occur following community consultation.

2.20 Toll Plazas

	Typical submissions include:
Concerns with impacts of the toll plaza on adjacent areas.	3, 415, 530, 662, 738, 966, 1403, 1495, 1627, 1736, 2221, 2466, 2637, 3045, 3070, 3452, 3465, 3696, 3771, 3775, 3815, 3910, 4275, 4316, 4357, 4379, 4673, 5555, 5625, 5627, 5668, 5717, 5719, 5767, 6176, 6228, 6445, 6465, 6977, 6999, 7057, 8025 8203, 8210, 8217

Response

The impacts of the toll plazas on adjacent areas have been assessed in the Eastern EIS on pp78-79, 84, 89 and 108 and in the Addendum to the Western EIS.

	Typical submissions include:
Locate toll plaza in a bushland section.	5767

Response

The toll plaza on the eastern section of the proposed expressway is proposed to be located away from residential areas. The process by which locations were chosen for the collection of tolls for the western section of the proposed expressway is set out in the Addendum to the Western EIS.

	Typical submissions include:
Locate toll plaza away from the Graduate School of Management at Macquarie University to avoid disturbance.	3080

Response:

The reasons for the choice of location for the toll plaza for the eastern section of the proposed expressway are set out on page 78 of the Eastern EIS. The impact on the Graduate School of Management will be mitigated by noise barriers and landscaping.

	Typical submissions include:
Tollgates will be a small distance from residents' property.	5767

Response

The toll plaza for the eastern section of the proposed expressway is not located near residences. The process by which a location was chosen for a toll plaza for the western section of the proposed expressway is set out in the Addendum to the Western EIS. The positioning of tollgates has been determined to meet traffic capacity and safety needs as well as minimising the impact on adjacent property. The RTA will ensure that mitigating measures such as noise barriers are implemented to reduce adverse impacts on property.

	Typical submissions include:
Harbour Bridge is already a toll for the "North Shore".	2893

Response:

Given that the proposed route extends to Old Windsor Road, the collection of tolls is similar to that now carried out on the M4 at Auburn. A large amount of the travel on the proposed expressway will stop short of the Sydney Harbour Bridge. The travel cost savings by using a toll route as well as the cost of the toll need to be considered. The existing routes will remain available and it will be up to the individual to choose to use the tollway. Existing roads will remain available for motorists who elect not to use the tollway. Existing roads will carry less traffic.

	Typical submissions include:
Construction of the transport link as a tollway will require a toll plaza which will have adverse impacts including noise and air pollution which would not occur if there was no toll.	2637, 4452, 6475, 6953, 8025

Response:

It is proposed to operate the proposed expressway as a tollway. The reasons for this proposal, and the environmental effects of the operation of the proposed expressway as a tollway (including its noise and air impacts), are set out in the Eastern EIS (at pages 78-9, 84, 89 and 108) and in the Addendum to the Western EIS.

	Typical submissions include:
Will arterial roads, e.g, Epping Road, Carlingford Road, etc, be allowed to run down to encourage motorists to use the Tollway?	7323

Response

The existing arterial roads will remain essential links in the road network. The RTA has performance indicators which are regularly monitored to provide a record of change in condition. The condition of the existing arterial roads will be compared with target conditions as a routine RTA activity to ensure adequate maintenance is undertaken.

	Typical submissions include:
Tollway is the wrong solution to the problems that greater Sydney currently faces.	6959

Response

The community consultation process supported the view that urgent strategic action was required to meet the transport needs of the North West corridor. Further funding constraints would delay the construction of the proposed expressway unless private resources are used. Tollway contracts have successfully brought forward other transport projects and it is proposed to seek private participation to bring forward construction of the proposed expressway.

2.21 Tunnels

	Typical submissions include:
Tunnel under railway line near Epping joining Carlingford Road/Kandy Avenue/ Derby Street/Somerset Road with Epping Road in vicinity of Terrys Creek. It would cost only $40m and would reduce impacts on North Epping, no acquisition, bushland retained, no increase in noise and no increase in air pollution. Money saved could be put to light rail. This alternative not fully investigated although it would solve traffic problems, it could not be built as a tollway. In addition, Epping rail bridge could be improved.	1138, 1417, 1418, 1689, 1713, 1734, 1817, 1853, 1931, 2090, 2150, 2387, 2639, 2712, 2738, 2756, 2757, 2764, 2766, 2773, 2789, 2819, 2882, 2888, 2901, 2895, 2948, 3135, 3222, 3243, 3247, 3253, 3262, 3264, 3316, 3322, 3325, 3380, 3382, 3560, 3608, 3681, 3970, 3972, 3986, 4024, 4031, 4032, 4043, 4045, 4081, 4836, 4886, 5109, 5154, 5219, 5868, 5929, 5947, 5950, 5992, 6082, 6086, 6135, 6169, 6353, 6883, 7271, 7299, 7635, 7790

Response:

This matter has been assessed as part of the EIS process. The investigation into the North West Transport Link addressed the transport needs in the region and not only the local transport problems in Epping. The tunnel proposed addresses some of the problems in Epping but does not address problems of congestion on Epping Road to the east or the lack of adequate public transport or an appropriate link to the west of the corridor.

	Typical submissions include:
Tunnel from Pennant Hills Road to North Ryde as an alternative to resumption of properties and to reduce noise.	3255, 5090

Response:

Tunnelling does provide an option to avoid resumption and reduce noise impacts and is proposed for the proposed expressway through the North Epping area as a viable way to address these and community severance problems. However, the length of tunnel proposed in these submissions would result in a very expensive project, and operating costs could not be considered viable in this instance. It would also be difficult to provide access at Beecroft Road, Herring Road and Lane Cove Road.

	Typical submissions include:
Tunnel under Epping joining east Carlingford Road option with F2 option.	2925, 2945

Response:

The evaluation of options and the community consultation undertaken as part of the EIS process indicated transport and environmental concerns regarding the components of the proposal listed above. After assessing these concerns, the proposed expressway with a busway emerged as the most suitable solution. It is not proposed to proceed with the Carlingford Road option.

	Typical submissions include:
Tunnel entry at Somerset Street will be very close to the Poplars Hospital.	5134

Response:

The tunnel portal is more than 200m from the hospital. This separation and the construction of the tunnel will minimise adverse affects from the proposed expressway on the hospital.

	Typical submissions include:
Tunnel near Epping Heights Public School to reduce noise and increase safety.	956

Response:

A tunnel at this location is not thought practical when engineering design, topography and economic benefits are considered. Features to protect the school from noise and to ensure pupil safety from arterial traffic will be included in the detail design.

	Typical submissions include:
What risk exists to a community above a tunnel.	13934

Response:

There is essentially no risk to a community above a tunnel. Tunnel construction would not affect the community above the tunnel. A major incident such as a fire could result in smoke at a portal but this would not pose any increased risks to the public above those pertaining to other roads. The risk to occupants of vehicles is managed in the design and operation of the tunnel.

	Typical submissions include:
The construction of a tunnel under the environmentally sensitive forest areas would be more acceptable and less damaging to the forest and wildlife habitats.	399, 7049, 8099

Response:

Although construction of a tunnel under the forest would be less damaging to forests and wildlife it is not proposed to provide a tunnel in the Darling Mills Forest areas as the costs are prohibitive.

2.22 Utilities

	Typical submissions include:
Water Board recommends that the RTA provide the following information at the design stage: • estimated volumes of sediment associated with average and exceptionally high rainfall events. • what represents "average" and "exceptionally high" intensity rainfall.	6906

Response:

If it is decided to proceed with the proposed expressway, this information will be provided to the Water Board.

2.23 Variations A, B, C & D, Western EIS

	Typical submissions include:
Preferred Option C was not indicated until late in the EIS . Virtually all the data is for Option B. This is misleading. Not enough detail on the impact of Variation A.	876, 1728, 3067, 5089, 5580, 8203

Response:

The variations to the proposed expressway through Darling Mills Forest are set out in chapter 27 of the Western EIS and the environmental impacts summarised there. Noise impacts are set out in the Specialist Working Paper (Wilkinson Murray Griffiths 1992). The air quality impacts of each alternative have minimal variation. Data collected and presented in the EIS, particularly relating to noise and air, for Variation B can be applied to Variation C. Variations A & D are not feasible alternatives to Variation B. In turn, Variation C is more feasible than Variation B by reducing some impact on the forest but at the expense of some houses.

2.24 Western Terminus

	Typical submissions include:
Concerns that the proposed expressway should not have its western terminus at Old Windsor Road/Abbott Road, but further west.	453, 1026, 1463, 1687, 3035, 3119, 6894

Response:

It is not realistic at this stage to extend the proposed expressway further west than Old Windsor Road/Abbott Road.

	Typical submissions include:
The proposed expressway should be constructed 6 lanes wide plus the bus lanes to cater for future demand.	7518, 7544

Response:

The traffic analysis was produced specifically for the EIS and indicated that by constructing the 4 lane proposed expressway with a dedicated busway the present and predicted future traffic demands would be met in the most cost effective manner.

3. CONSTRUCTION ISSUES

3.1 Construction

	Typical submissions include:
Would the RTA be prepared to halt construction, if noise impacts are found to be excessive?	3135, 7564

Response:

Construction noise is controlled by the EPA in accordance with the Noise Control Act. Limits of noise at construction sites are set and enforced by the EPA. All contracts will require compliance with EPA requirements.

3.2 Construction Impacts

	Typical submissions include:
Disposal of overburden - Where will overburden from the Epping Tunnel be disposed and a statement regarding the environmental impacts of disposal is required?	3259

Response:

The conditions of determination will require all consents and authorities for the disposal of construction spoil to be obtained. The precise locations for disposal of overburden will be determined following the design phase.

	Typical submissions include:
Heavy Vehicles - Concerns regarding noise, pollution and impediments to daily activities of residents from trucks moving cut and fill materials through narrow streets over a long period.	2764

Response:

These issues have been considered in the EIS. Section 10.6 (Western EIS) - Construction Traffic - describes the roads most likely to be used by construction traffic removing or delivering excavated spoil, concrete and asphalt, and construction materials. There will be some short term inconvenience and impact on residents during construction. Section 10.2.5 (Eastern EIS) - Community Disturbance - describes the impact of construction traffic on local communities.

3.3 Construction Noise

	Typical submissions include:
Concern about construction noise. What can be done to minimise this impact before and during construction?	2637, 3088, 3465

Response:

Section 10.2.2 - Construction Noise (Eastern EIS) and Section 19.7 (Western EIS) address the impact of construction noise, and measures to minimise this impact. These measures include erecting noise barriers and temporary barriers prior to construction, use of quiet techniques, fitting noise control kits on noisy mobile equipment and shorter working hours for noisy activities. Construction noise controls will be agreed with the EPA.

3.4 Construction Program

	Typical submissions include:
What is the construction program for the freeway?	703, 5944, 6890

Response:

If it is decided to proceed with the proposed expressway, the expressions of interest for construction of the expressway would be called some months after the determination. Negotiations would then proceed towards achieving a contract, and these negotiations could take up to 1 year or more to conclude. Section 10 - Construction - (Western EIS) and Section 9.3.8 (Eastern EIS) describes the construction program which is three overlapping phases with a possible construction period of three years. Phase 1 would involve bridge construction; Phase 2 - earthworks and drainage; and Phase 3 - pavement construction and other remaining work.

3.5 Consultation

	Typical submissions include:
A community advisory group should be established during the construction process.	6892

Response

The RTA will appoint an environmental officer to liaise with members of the community and other governmental bodies. Various local and school liaison groups will be formed for particular purposes.

3.6 Drainage

	Typical submissions include:
EIS does not study effects of construction on local drainage.	4389

Response:

Section 10.2.1. (Eastern EIS) and Section 24 (Western EIS) deal with these matters.

3.7 Dust

	Typical submissions include:
F2 will cause massive problems from dust during construction. Dust should be minimised before and during construction. What can be done to minimise these impacts?	2637, 2741, 3088, 3465, 4354, 4359, 4397, 5529, 5607, 5645, 6109, 6449, 6881, 6884, 6892, 6894, 6907, 6926, 6940 7013, 7056, 7154, 7635, 14252

Response:

Dust as a result of road construction was addressed in Section 10.2.3 (Eastern EIS) and in Section 20.4.1 (Western EIS). The RTA will adopt the mitigation measures described at these points in the EIS.

3.8 Epping Heights Public School

	Typical submissions include:
Noise impact on school during construction. No construction noise mitigation is described in the EIS.	950, 2712, 4873, 5757, 6136

Response:

Noise limits during construction will be controlled by the EPA in accordance with conditions of licence issued by the EPA under Noise Control Act. The limits will allow continuing use of the school during the construction period.

3.9 Hours of Work

	Typical submissions include:
Why is construction work allowed on Saturdays? Must be limited to 7.00 am to 5.00 pm Monday to Friday.	3772, 3778, 6884, 6890, 6892

Response:

Sections 10.4 (Western EIS) and 10.2.2 (Eastern EIS) deal with these issues. The EPA's noise licence will set the hours of operation for construction of any works. Most licences permit Saturday working hours. The Community & Environment Liaison Officer will be available to discuss specific matters of concern.

3.10 Local Impacts

	Typical submissions include:
Concerns regarding impacts on local area during construction.	2423, 2427, 3456, 3759, 3775, 4673, 5645, 6988, 6997

Response:

The Authority shall ensure conformity with controls imposed by the EPA during construction on environmental aspects including community disturbance, erosion and sedimentation, noise, air quality, urban bushland disturbance and visual effects. The RTA will establish a consultative process to address local concerns during construction.

3.11 Property Damage

	Typical submissions include:
Excavation/blasting will cause cracks and other problems to homes located close to construction. Will compensation be paid for structural damage?	465, 1024, 2419, 2423, 2427, 6892

Response:

Prior to commencement of construction, adjacent properties will be inspected and a record kept of the condition of the property. If during or after construction damage has occurred further inspections will take place and negotiations will commence to satisfactorily rectify or compensate the situation.

3.12 Staging

	Typical submissions include:
Construction progressively from east to west would allow progressive opening and benefit at an early date.	2857, 3764

Response:

Staging will be managed to meet financing and traffic constraints. If private funding is involved this will allow early construction and would seek to stage the project so early opening and traffic benefits occur. Staging is discussed in section 5.3.8 of the Eastern EIS.

3.13 Traffic Management During Construction

	Typical submissions include:
Concerns regarding inconvenience and traffic holdups during construction.	1024, 6470, 6892, 6908

Response:

Traffic management during construction is dealt with in Sections 10.7 (Western EIS) and 10.2.5 (Eastern EIS). Traffic arrangements during construction will be implemented to minimise inconvenience to the community and disturbance to traffic flow by providing traffic diversions to accommodate existing routes of travel and by retaining as much traffic as possible on arterial roads. All traffic control plans would be agreed with the responsible local councils. Working hour restrictions may be imposed to ensure that the existing traffic flow particularly during peak periods is maintained. Some short duration closures may be necessary resulting in some minor inconveniences to traffic. Where possible, advance warning of these closures will be provided to minimise inconvenience.

4. TRAFFIC AND TRANSPORT ISSUES

4.1 Accidents

	Typical submissions include:
Increased number of cars on the expressway will lead to increased accident rates with inherent community cost.	6884, 6890, 6905, 7149, 7304

Response:

Accident rates on controlled access roads such as tollways are significantly less than accident rates on other roads. As traffic transfers from other streets then the accidents on these streets are likely to reduce. The net impact of tollways is to reduce accidents.

4.2 Buses

	Typical submissions include:
The introduction of the busway is of little benefit as there will be little time saving and it will be difficult for residents to access the limited number of bus stops.	704, 986, 3762, 4097, 4878, 5122, 5769, 6884, 6892, 7220, 7699, 7737, 7750

Response:

The busway is provided as part of an integrated strategy to meet transport needs in the region. The establishment of a reliable fast service will provide a public transport option for people in the region. The planned operation for buses is to have collector routes in the adjoining suburb and then to lead on at Old Windsor Road, Windsor Road and Pennant Hills Road before travelling express to Epping. Local bus services to Epping are expected to continue.

	Typical submissions include:
Electrification of Busways	126

Response:

Following consultation with the Department of Transport, electrification would not be practical initially as buses from a diverse range of routes would all have access to the busway. In the longer term, if a decision to electrify the bus roadway was made, dual electric/diesel buses could be used.

	Typical submissions include:
The busway link to Epping is questioned as the link to Parramatta is quicker and the train trip to the city is quicker from Parramatta.	3226, 5740

Response:

The new link in the transport network for both cars and buses overcomes significant deficiencies. By providing the new link for buses, options are provided which allow use of public transport instead of cars. The choice to access Parramatta will not be removed. Access to rail to the City from the far west of the corridor would be quicker by direct access to the western line by use of the proposed bus roadway along Sunnyholt Road to Blacktown. However, the bus roadway provides access to the Epping Interchange with opportunity to travel further west to North Ryde and beyond. Buses joining from Pennant Hills Road will provide the fastest option for rail to the city. Connection to Epping also enables access to the Main Northern Railway line from Hornsby to Strathfield.

	Typical submissions include:
The volume of buses does not justify having an exclusive lane and widening the Freeway.	1417, 3468, 5738, 6115

Response:

The benefits of the bus lane result initially from a faster and more reliable public transport and the potential to develop patronage. If travel times are competitive with cars, a viable alternative will attract people away from cars in those cases when choice exists. The busway linking with feeder services and the bus rail interchange provides these benefits.

	Typical submissions include:
Buses East of Epping - Buses from the transport link should run past Epping station to Macquarie University, Chatswood or the City.	3436, 5740, 6116, 6875, 6905, 7429

Response:

Transport studies indicate the majority of passengers would elect to transfer to rail at Epping and not want to continue east on buses. Opportunity will exist for bus interchange or trip extension at this location. The frequency of buses linking east would depend on demand at the time. There are already bus services from the west which continue to Macquarie University and to the City.

	Typical submissions include:
Delays to Buses - The estimated increase in buses will not solve the problem of existing delays on Carlingford & Beecroft Roads or at Epping Bridge and Langston Place.	4305

Response:

The exclusive bus lanes on the transport link will allow buses to bypass delays on their routes. The feasibility of the Epping rail interchange has been examined and details are set out in section 9.4 of the Eastern EIS. Detailed design will be done at a later stage.

	Typical submissions include:
Private buses should provide feeder facilities to the busway.	5723, 5740, 6938, 7122

Response:

It is expected that bus services (whether private or public) will collect from adjoining residential areas and then load onto the proposed expressway for express operation to Epping.

	Typical submissions include:
Public Transport - Specific taxes should be raised for public transport from those who benefit from road improvements and reduced urban congestion. This policy issue should be addressed before a viable North West Link can be defined.	6933

Response:

This assessment is based on present policy regarding public transport fundings. Road funds are collected from hypothecated road user sources. Road costs for public transport are met by the RTA as part of total transport management in New South Wales.

	Typical submissions include:
There is no provision for buses to cross Beecroft Road traffic.	5122, 5723

Response:

Provision will be made for buses to cross Beecroft Road as part of the final design. Fig. 9.47 of the Eastern EIS indicates traffic signals at the access points. Section 9.4.3 of the Eastern EIS contemplates a further option of dedication of 2 kerb-side lanes for buses. The former method of access will be adopted as part of the final design.

	Typical submissions include:
Busway West of Windsor Road - When will the busway extend west of Windsor Road?	8209

Response:

The staging of roadway and busway construction is dependent on availability of funds and anticipated patronage. The option exists to delay the provision of the busway west of Windsor Road as is stated in Section 8.3 of the Western EIS.

	Typical submissions include:
Buses on Old Windsor Road - How will the bus lane on Old Windsor Road be integrated with the anticipated high volume of traffic?	6197

Response:

Figure 22 of the Western EIS indicated this anticipated bus ridership in the west of the corridor, and the additional ridership to Epping. Future road proposals for Old Windsor Road north of Seven Hills Road will consider transit requirements. South of that point, transit lanes could be anticipated.

	Typical submissions include:
Buses to Seven Hills - Hills district residents would be served better by the improvement to the bus service to Seven Hills rather than introducing an express service to Epping.	1687, 6894

Response:

Long term transport conditions will be improved only by integrating a number of transport strategies. The new transport link in providing a dedicated busway and bus/rail interchange will enhance the system but continued improvement to existing services such as the bus service to Seven Hills is required to complement the new facility if satisfactory long term transport improvement is to occur.

	Typical submissions include:
The bridge over Cropley Drive should have two lanes in each direction to cater for bus stops.	5661

The design of Cropley Drive will cater for through vehicles to pass stationary buses at the bus stops.

4.3 Car Demand

	Typical submissions include:
Increased Cars and Congestion - F2 construction will encourage more car traffic on the roads and pollution.	8, 136, 662, 734, 876, 951, 991, 1165, 1581, 1607, 2428, 2650, 2773, 3035, 3243, 3463, 3773, 4366, 4740, 4786, 5082, 5861, 6058, 6378, 6485, 6884, 6892, 7432, 7451, 7533, 7561, 7573, 7662, 7794, 7852, 7892, 8207, 8209, 11201, 12877

Response:

Traffic growth in the corridor will basically arise from proposed residential expansion and consolidation, employment development, and general commercial and recreational activities. The proposed expressway provides a strategic link to meet the transport needs of the region. It balances an increase in needed road capacity with provision of a busway which improves public transport. Some car usage may increase but the availability of more accessible public transport will provide an option for many who need to travel around the area. By providing a new high

capacity link in the road network, the levels of traffic congestion and resulting environmental impacts will be reduced as motorists divert to a route designed to cater for high volumes of traffic.

	Typical submissions include:
Car Pooling - The F2 makes it more attractive for private car use and decreases the need for car pooling or ride sharing.	404, 977, 2703, 3672, 7009, 7349, 12787

Response:

The proposed expressway neither increases nor decreases the ability of employees to engage in car pooling arrangements. The proposed expressway would be attractive for car pooling and ride sharing. The RTA is actively seeking ways to promote ride sharing and car pooling.

	Typical submissions include:
Traffic Congestion - The EIS mentions potential bottle necks caused by proposals but does not enlarge on or address them to any degree.	4786

Response:

The detailed traffic arrangements at specific locations in the corridor through which the proposed expressway passes will be evaluated in detail prior to completion of the link. The connections to the arterial road network have been designed to handle the predicted traffic volumes but other associated works will be necessary to overcome local difficulties. This regularly occurs when a new high capacity link is added to the network and traffic adjusts to the new arrangements.

4.4 Car Parking

	Typical submissions include:
Car Parking at Railway Stations - Large scale car parking should be provided on railway land at Epping, Cheltenham, Pennant Hills and Eastwood railway stations to encourage commuter parking.	404, 484, 836, 874, 2888, 3226, 3297, 4872, 7532, 7753, 7780, 12853

Response:

The proposed busway is being provided as a viable public transport alternative to the use of cars. From discussions with the Department of Transport, the provision of additional parking is not supported at this stage as it may result in a reduction in use of buses.

	Typical submissions include:
Parking at Bus Stops - A concern of residents. Congestion on roads and re-zoning of land for car parks would affect residential amenity.	966, 1487, 1627, 1699, 2217, 2637, 2913, 3055, 3464, 3830, 4487, 5516, 5645, 5668, 5740, 6191, 6892, 6908, 6932, 6938, 6940, 6977, 7564

Response:

The provision of bus stops to allow access to the busway was set out in section 9.4 of the Western EIS. It is not anticipated there would be a significant number of vehicles parking near bus stops as most commuters would walk to feeder bus routes or to the busway stops or park at railway stations. The Department of Transport does not, at present, have a policy to provide special parking at bus stops along the route of the proposed busway.

	Typical submissions include:
Cropley Drive Bus Stop - Concern was expressed at the visual impact of the multi-level parking station at Cropley Drive.	8073

Response:

The future bus interchange at Cropley Drive will provide a pedestrian ramp for feeder bus services stopping on the bridge to the busway bus stop on the link. There is no multi-level carpark proposed at Cropley Drive.

	Typical submissions include:
Parking in Local Streets - Local streets e.g. Coral Tree Drive, will become popular parking places for bus commuters.	516, 5516, 6932, 7115

Response:

Access to the bus stops on the busway is anticipated to be predominantly by walking or by feeder bus services. If parking develops as a concern this will be addressed by the local traffic committee at the appropriate time.

4.5 Car Usage

	Typical submissions include:
Private tollways necessitate the promotion of high private vehicle usage and do not lead to a balanced resolution of the needs of the community.	3427,4750, 7282

Response:

The proposed expressway has been developed as a balanced response to the strategic community transport needs. The provision of a dedicated busway with rail interchange facilities is a major part of the total project. The proposed financing involving tolls will allow for earlier construction. Tolls also serve to manage traffic demand to some extent.

4.6 Carlingford Road

	Typical submissions include:
No evidence of Carlingford Road being upgraded when land/property was purchased in October 1992.	10892, 11071

Response:

The alternative of upgrading Carlingford Road is no longer proposed. The proposed expressway avoids this concern.

4.7 Epping

	Typical submissions include:
General Traffic Impacts within the Epping Centre - Submissions raised the issue of traffic disruption and conflict within the centre of Epping as a result of proposals to upgrade the interchange. The main issues raised focused on the assumption that there will be continuing high levels of traffic congestion which will conflict with bus activity approaching and leaving the interchange.	2286, 4045, 5138, 6070, 6140, 6875, 6919, 6932, 6938, 10372

Response:

A supplementary traffic study from TEC (Appendix 21) was commissioned to consider the implications for traffic in Epping following the opening of the proposed expressway. This study included an origin and destination survey of traffic passing through the central Epping area with Sutherland Road closed. The study showed that, in the year 2006 traffic using the intersections of Epping Road with Langston Place, Essex and Pembroke Streets would experience an average reduction in delay of 30% over existing conditions (1993). This significant improvement in overall traffic conditions may allow flexibility in the management of traffic within the centre and open up opportunities to improve general levels of circulation and access throughout the centre. The buses associated with the proposed expressway would comprise only a relatively small proportion of total traffic in the future. This is estimated as being approximately 58 buses in the peak two hours in the first years of operation and 84 buses about 15 years later. On Beecroft Road north of Carlingford Road, where traffic estimates are available in the Eastern EIS (Table 8.3), it can be seen that, in 2006, buses will constitute approximately 2.4% of total traffic travelling in the peak direction in the 2 hour morning peak. As a consequence buses will not significantly disrupt traffic conditions within the centre once the expressway is opened. The interchange plan calls for the use of the eastern kerb in Beecroft Road adjacent to the station for bus stops. This section of the road is currently an underutilised parking lane. It is recognised that the Epping Road railway overbridge may require widening in the future to provide for efficient interchange operation and to satisfy traffic requirements. Traffic conditions on Beecroft Road following the introduction of the bus system and a new intersection north of Carlingford Road would not be adversely affected by the proposals. Traffic signals would be coordinated with the Carlingford Road lights and would only be activated when a bus is present. Such traffic management measures would minimise any impact on other traffic using Beecroft Road.

	Typical submissions include:
Traffic Conditions in Langston Place - The issue of traffic congestion and potential conflicts with the activities in Langston Place following the upgrading of the interchange was raised. Concern was expressed that the introduction of additional buses would have a deleterious impact on the Langston Place environment.	1817, 4931, 5875, 6127, 6139, 6919, 6938

Response:

Existing road traffic conditions in Langston Place may be adversely affected by the proposed interchange activity. In the short term (approximately 5 years), the extent of work required to accommodate express bus activity would extend to the re-allocation of space along the western kerb. This could result in a minimum of disruption to traffic flow conditions with expressway buses travelling only in a northerly direction and existing services which use Pembroke Street remaining unchanged. In the medium to long term (5 to 10 years) there may be a need for a wide pedestrian threshold adjacent to the new station entrance. This would act to define the interchange precinct and enhance pedestrian safety. Consideration of measures to reduce general traffic levels in Langston Place to create a pedestrian/bus precinct may also be required. The ability to implement any such measures is linked to issues associated with access to businesses in the street, local traffic circulation, pedestrian safety and amenity and any redevelopment.

The final arrangements for Langston Place will be defined following the completion of a detailed study of the interchange and related traffic conditions. A vital aspect of such a study will be consultation with all those affected including residents. There is the potential to use the upgrading of the interchange to improve the amenity of Langston Place by improved management of traffic and pedestrians.

	Typical submissions include:
Lack of Rail Capacity - The rail system would not have capacity to cope with the projected demand for rail travel generated by the proposed Express Bus system. This included concern that capacity should be considered at the point of maximum load on the Main Northern Line and the distribution of trips in the two hour morning peak.	2286, 3226, 4045, 5122, 5529, 5607, 5740, 5875, 5915, 6125, 6875, 6907, 7304, 7336, 7440, 7780, 7782, 7985, 7794, 8209, 14085

Response:

City Rail has indicated that the rail system can be adjusted to cater for the additional train demand. This adjustment could be achieved through the use of state of the art 8 car trains with 900 seats and assuming all trains that pass through Epping will stop, giving a total of over 6,000 seats over a 2 hour peak period available after allowing for the point of maximum load on the line. Additional services could be introduced if necessary. The system is a dynamic operation that has the capacity to adjust to the changing demands, forecast for the next 15 to 20 years. As typically 60% of the two hour peak passenger demand occurs in the 7.30-8.30 am time period, some adjustment of rail services may be required to provide rail capacity in that one hour period.

	Typical submissions include:
Impact of Buses on Epping Town Centre - The increase in buses likely to be generated by the Express Bus system would have adverse impacts on the Epping town centre.	1595, 1817, 2286, 3574, 4045, 4885, 5281, 5609, 5740, 5875, 6938, 7429, 7585, 7591, 10387, 13794

Response:

The household interview survey conducted in the preparation of the EIS to assess the likely level of demand for an express bus system predicted that, based on those who indicated definite use of the system, the present number of 45 buses per hour at Epping would increase both through growth in existing services and new Express Bus services to about 104 buses per hour in 2006 if the proposed expressway and busway is completed. The predicted reduction in traffic on the arterial roads in Epping, following the opening of the proposed expressway and busway will more than offset the impact on traffic caused by the increase in buses. Bus operation in the interchange will be based on a simple one way system, and with the provision of the bus only railway underpass for buses returning to the proposed expressway and busway, no new bus movements will be introduced to the town centre. In the short term, reallocation of kerbside parking on the western kerb in Langston Place would be required, with alternative arrangements being required for taxi and car parking. In the longer term, additional space can be made available through the extension of bus zones to the north in Langston Place and Cambridge Street and the use of the eastern kerb in Beecroft Road. The detailed interchange design will be refined following further traffic studies. At this stage the detailed arrangements for all modes will be addressed, together with the necessary provision for pedestrians and traffic movements in the vicinity of the interchange.

	Typical submissions include:
Alternative Interchange Site - Some submissions address the issue of the location of the interchange, suggesting that it would be more appropriate to site the facility at the point where the expressway crosses the Main Northern Railway.	2947, 5740, 6053, 6881, 12853

Response:

This suggestion was discussed by the task force considering public transport, including the Department of Transport. The suggestion would require the development of an additional railway station one kilometre from Epping and would not meet the needs of linking the express bus service to the local bus services which serve the Epping town centre. It would also be likely to conflict with rail operations on the line and generally lead to an unsatisfactory level of service from the proposed station and the existing Epping Station. The provision of such an interchange at the elevated site would have significant environmental impacts and there would be a high cost for providing not only the additional station but also for the new interchange that would be required.

	Typical submissions include:
Use of Air Space - Use the air space above the station instead of taking up street space with resultant traffic conflicts and urban conflicts.	2086

Response:

As stated in the Eastern EIS, one long-term option for the interchange is to build it in available airspace. However, which of the long-term options is to be adopted is a decision to be made in conjunction with the community in the future if and when demand is evident.

	Typical submissions include:
Town Centre Environment Amenity and Urban Character - Concerns that the proposed interchange will impact on the environment of the town centre, its general amenity for users other than those using the interchange and the potential impairment of the urban character of the centre.	1817, 2806, 3601, 4033, 5875, 6054

Response:

The short-term option stated in section 9.4.3 of the Eastern EIS does not adversely impact on the urban features of the town centre. The short term impact will be minimised by the introduction of the bus circulation system and provide for the return trip via the new railway underpass. If a long-term option is adopted, its environmental impacts will be assessed at the time of conceptual planning.

	Typical submissions include:
Insufficient Detail in EIS on Interchange Proposals - There was insufficient detail in the EIS to effectively evaluate the impacts of the proposed interchange.	1817, 3100, 3574, 3986, 4886, 4931, 5740, 6140, 6173, 6938, 7518, 7564, 11166, 13597, 13598

Response:

The feasibility study undertaken by TEC was only a preliminary assessment of opportunities and options for the upgrading of the existing Epping Bus/Rail interchange. The EIS summarises the results of that feasibility study. The Department of Transport provided input to that study.

	Typical submissions include:
If Epping is to be a major bus/rail interchange, it should not also be a major concentration point for road traffic.	3100, 4886, 11185, 11213, 11217, 13369

Response:

The construction of the proposed expressway will provide a free flowing alternative for traffic which presently crosses the railway at Epping. The introduction of a busway and express buses to the Epping bus rail interchange will provide a viable alternative to car use for many drivers. The analysis of traffic indicates the planned bus/rail interchange will work satisfactorily once the proposed expressway is opened.

	Typical submissions include:
How will Epping station 'kiss & ride' provisions work on the western side of the station?	3315, 13598

Response:

With the introduction of the express bus system an alternative to 'kiss & ride' will be available. It is not anticipated that there will be any increase in 'kiss & ride' trips and initially there would be no change in existing arrangements.

	Typical submissions include:
Epping Bridge is seen as a major bottle-neck and action is needed to overcome this problem.	991, 2712, 2774, 5529, 5740, 6002, 6093, 6094, 6135, 7551, 7756

Response:

The proposals regarding construction of the proposed expressway with busway will address the problem of congestion at Epping Bridge and many other transport issues in the region. Traffic analysis has indicated that the bridge will have capacity to meet transport demands when the proposed expressway is opened but further analysis will be required to ensure suitable traffic capacity is available when future upgrading of the Epping interchange is undertaken. A single measure to improve capacity at Epping would not meet the corridor transport needs.

	Typical submissions include:
Concern that if the F2 goes ahead traffic on Epping Road will increase rather than decrease.	7293

Response:

The opening of the proposed expressway will provide a new high capacity route in the transport network. It will attract a significant volume of traffic even if it is opened as a toll road. The traffic modelling indicates there will be an initial reduction in traffic on Epping Road when the proposed expressway opens. As the centres to the north of Sydney, North Ryde and the North West sector continue to grow there will be growth in traffic both on the proposed expressway and on Epping Road.

4.8 North Epping

	Typical submissions include:
Access to North Epping - There was concern that the traffic impacts of the interchange on Langston Place would adversely affect accessibility to North Epping. There was also an assumption that there is a proposal to close Langston Place. This concern was also linked to the closure of Sutherland Road.	142, 191, 478, 1808, 1817, 1914, 2286, 2387, 2787, 2606, 3386, 4895, 4910, 4923, 5170, 6081, 6094, 6127, 6139, 6140, 6144, 6263, 6911, 7213, 7259, 7276, 7296, 7325, 7393, 7334, 7440, 7455, 7505, 7521, 7562, 7585

Response:

Traffic modelling conducted as part of the EIS shows that traffic conditions for access to and from North Epping will be improved once the proposed expressway is operating. A supplementary study (Appendix 40) showed that, in the year 2006 traffic using the intersections of Epping Road with Langston Place, Essex and Pembroke Streets would experience an average reduction in delay of 30% over existing conditions. This improvement in traffic conditions will benefit traffic entering and leaving the area at Langston Place, Essex Street and Pembroke Street. At each of these intersections the average reduction in delays for vehicles exiting in the morning peak hour will amount to 11%, 20% and 50% respectively. Similar improvement will be experienced in the afternoon peak period. These improvements come as a result of reduced traffic flow on the arterial roads and the removal of traffic through the zone as a result of the closure of Sutherland Road. The reduction of traffic in the area will open up opportunities to consider adjustments in traffic arrangements to cater for increased activity around the interchange, without significant detriment to the level of delay for the vast majority of people seeking access to North Epping. While arrangements for the interchange will be the subject of a detailed study, it is possible to say that all buses associated with the proposed express bus system will be travelling north in Langston Place, returning to the proposed expressway via a new connection under the railway, north of the station. This will minimise disruption to traffic, especially that traffic which is travelling south in Langston Place, seeking to travel away from the area.

	Typical submissions include:
Access for North Epping Residents - The North Epping community was concerned about the closure of Sutherland Road and its impact on North Epping residents wishing to travel to the north, to Beecroft Shops and to Cheltenham Girls High School. Some submissions supported the closure of the road, for reasons of improved safety and improved resident amenity. Other submissions indicated that there had been no evaluation of the impact of the closure of Sutherland Road.	478, 1808, 2764, 3386

Response:

Sutherland Road currently performs a sub-arterial road function in carrying traffic which is by-passing Epping. This is an inappropriate role given its poor geometry, accident history and residential environment. With the construction of the proposed expressway and closure of Sutherland Road, through traffic will be eliminated from this route and redirected to Beecroft Road which will provide a safer and more appropriate alternative for such traffic. The closure of Sutherland Road will see a significant reduction in traffic passing through the North Epping area and penetrating local streets, with resultant improvement to the amenity of the area. This will amount to approximately 26% (1300 vph) less traffic passing through the area in the AM peak hour and 24% (1100 vph) in the PM peak hour. The vast majority (approximately 85%) of traffic travelling to and from North Epping will benefit from the closure of Sutherland Road and the opening of the proposed expressway. This traffic will experience less traffic conflict while travelling through the area. General levels of accessibility in the area will be improved by the reduction of traffic delays on Epping Road as a result of the opening of the proposed expressway. Of particular relevance to residents of Epping will be improved access conditions to and from the area at Langston Place, Essex Street and Pembroke Street. Vehicles currently using Sutherland Road constitute about 15% of North Epping traffic in the AM peak hour and 13.5% in the PM peak hour. A previous study (Appendix 40) indicated that over a twelve hour period about 12.5% of North Epping traffic uses Sutherland Road. The alternative trip for North Epping traffic with the closure of Sutherland Road is via Epping Overbridge and Beecroft Road. This is approximately 2 kilometres longer than the trip from the intersection of Somerset Street and Norfolk Road to Copeland Road and Beecroft Road via Sutherland Road. Under existing AM peak traffic conditions the extra travel time is approximately 5 to 6 minutes for travel between North Epping and Beecroft shops. With the opening of the proposed expressway, travel time to the north via Epping Overbridge and Beecroft Road can be expected to improve significantly over current conditions because of the overall reduction in delays which will be experienced on the arterial road network and at the various intersections serving the Epping area. The RTA will continue to co-operate with Hornsby Shire Council regarding future access to North Epping and if necessary will allow further changes to the access arrangements agreed by the Council, the local community and the Authority.

	Typical submissions include:
Emergency Access - Access via Sutherland Road would be required in case of bush fires and other emergencies. It was considered that residents in the area, and also in North Epping would be at risk if the road is closed.	1336, 1335, 3744

Response:

With regard to emergency access to North Epping, it is proposed to provide for such access to and from Sutherland Road. This access will also be available for pedestrians.

4.9 Planning

	Typical submissions include:
Changing residential and work locations away from the city and lower North Shore will reduce the need for the link and the expressway is not warranted. F2 will not solve Sydney's transport problems in the long term.	673, 3262, 5347, 5749, 5800, 5875, 5896, 6309, 6328, 6884, 6907

Response:

The travel forecasts used in the transportation study are based on the Department of Planning's population and employment predictions which allow for residential and work location changes. The traffic volumes derived from these predictions clearly warrant action to overcome existing traffic concerns and to provide for future transportation needs of the region

	Typical submissions include:
Freeway program is costing the state $5-15 billion and nothing is being spent on public transport which has proven environmental and quality of life benefits.	11201

Response:

The current expressway program including the Sydney Harbour Tunnel, Gore Hill Freeway and the F2, F5, F4 missing link and Eastern Distributor only amounts to about $2 billion. The proposed expressway, by including a busway connecting to Epping Railway Station is providing for a balance of public transport and cars in the region. This has environmental benefits of providing viable alternatives to the use of cars. The RTA spends the funds allocated by State and Federal governments on road construction and operation. The Department of Transport spends

the funds provided to improve public transport. The RTA is to provide the bus roadway in its role as catering for road-based public transport.

	Typical submissions include:
A planned Sydney orbital link will never eventuate if funds are continually squandered on piecemeal and costly arterial upgrades that serve immediate problems without providing long term benefits.	471

Response:

The RTA has a balanced program of road network improvements which ranges from local improvement and elimination of accident black spots or congested locations to the construction of major new links. All of these works provide significant benefits to the community which at present is suffering additional costs resulting from an inadequate transport network. Construction of the proposed expressway would complete a significant portion of the "Sydney Orbital".

	Typical submissions include:
Road Transport Future Directions 1991 - There appears to be no reference in the EIS to the Future Directions Study. This study demonstrated that the current trend scenario was unacceptable in relation to traffic congestion in Sydney and air quality decline	6378, 6932

Response:

The Future Directions Study of the RTA commenced after the start of the preparation of the 1992 EIS. The study is in fact referred to in section 5.4.1 of the Eastern EIS. The integrated transport philosophy of the 1992 EIS is consistent with Future Directions suggestions of improving public transport, providing a strategic road corridor, and providing an integrated approach to transport planning.

4.10 Public Transport

	Typical submissions include:
Greater attention could be paid to public transport options.	2738, 2779, 2883, 2913, 4305, 5201, 5529, 5607, 5645, 6028, 6378, 6883, 6884, 6892, 6907, 6932, 7011, 7794, 14119

Response:

The EIS investigations studied public transport options in detail and these are set out in section 8.2.3 of the Eastern EIS and section 5.3 of the Western EIS. The background working papers described the options investigated and detailed the reasons for the decision to include an innovative solution of a dedicated busway with rail interchange. The proposal is supported by the Department of Transport.

	Typical submissions include:
Need for an integrated transport/land use study by a department without a vested interest.	856, 2893, 4331, 4366, 5607, 6378, 6884, 7226, 7438, 7635, 7561, 7794

Response:

During preparation of the EIS, there was extensive involvement of all authorities and many private groups. The Department of Transport in its submission to the EIS concluded "the Department supports the innovative strategy of incorporating high standard public transport facilities in a total package that addresses the broad range of existing and future transport needs in the corridor". The project modelling also included up-to-date population and employment/land use projections. All of these go towards integrated land use/transport planning and the provision of transport solutions for the community as a whole.

	Typical submissions include:
Transport options combined with urban consolidation are required to mitigate Sydney's pollution problems.	5854, 6378, 6884, 6907

Response:

The EIS considered the transport needs of the region. Planning policy which encourages urban consolidation has been initiated and the travel demand forecasts have been based on population

projections which include urban consolidation. The proposed expressway and busway are based on analysis of these types of forecasts.

	Typical submissions include:
EIS does not consider non-road or part non-road solutions as alternative options.	3762, 6378, 6907, 7561, 7701, 14119

Response:

The EIS considered public transport options and these are set out in section 8.2.3 of the Eastern EIS and section 5.3 of the Western EIS. The proposed expressway includes a busway component and the balance of increased road capacity and improved public transport services are considered to meet the reasonable travel needs of the community.

	Typical submissions include:
Public transport could be considerably improved by extending government buses to service the freeway.	5723

Response:

The proposed arrangement is built on the concept of an interchange at Epping. That basic services structure could be augmented through private or Government buses on the expressway. The balance between Government and private buses is a matter of Government policy. The proposed expressway will provide for both alternatives.

	Typical submissions include:
Future Transport Options - EIS failed to look at the loss of future transport options.	856, 2387 6378, 6907

Response:

The EIS addressed the transport needs of the region in a comprehensive manner. The proposed expressway and busway provides a realistic response to transport needs. Future upgrading of the busway to light rail is possible.

	Typical submissions include:
Traffic demand modelling disregards the Commission of Inquiry's view that new origin and destination trip surveys were essential.	3547, 5529, 5607

Response:

The traffic demand modelling has been revised since the Commission of Inquiry's comments. Traffic demand modelling is based on the most recent Department of Planning data. The data includes the latest origin and destination information as well as prediction of residential and employment growth. Denis Johnston & Associates Pty Limited, in preparing the trip-table models for the 1992 EIS, undertook extensive calibration of current travel. The results confirm the community perception that the transport network in the region needs upgrading.

	Typical submissions include:
From traffic assessments quoted in the Commission of Inquiry, it is not necessary to widen Carlingford Road.	3247

Response:

The 1992 study developed new transport demand figures for the corridor. The widening of Carlingford Road arose from those figures. The alternative of widening Carlingford Road which gave rise to this issue is no longer proposed.

	Typical submissions include:
Focus of Traffic on the City/CBD - F2 will take all traffic into the city, including trucks. City cannot accommodate any more cars now; why encourage extra vehicles especially trucks.	5529, 6890, 7203

Response:

It is not the intent of the proposal to focus traffic on the CBD, but to enhance the transport facilities of the region. The proposed expressway provides a new link in the arterial road network for both cars, commercial vehicles and for buses. The focus is on meeting the reasonable transport needs of the community. It is anticipated that a diverse range of trips and destinations (not merely those to and from the CBD) will be accommodated. This is shown in Figure 5.8 of the Eastern EIS and Figure 15 of the Western EIS.

	Typical submissions include:
There is a need for an efficient public transport system either bus or rail which would encourage drivers to leave their vehicles at home, thus reducing the environmental impacts.	2125, 2782, 3214, 3226, 3253, 4045, 4065, 4555, 4904, 5110, 5242, 5267, 5269, 5319, 5320, 5444, 5529, 5645, 5742, 5847, 5994, 5995, 6025, 6047, 6075, 6093, 6114, 6118, 6378, 6884, 6890, 6907, 6917, 6932, 7299, 7670, 7750, 10882, 10884

Response:

The realistic transport needs of the region require a combination of transport strategies. The needs of commuters to work locations, the needs of children and the elderly, the needs for recreational travel or commercial transport all need to be addressed. The proposed expressway with busway and bus/rail interchange and bus priority on Epping Road will best meet this range of needs.

	Typical submissions include:
Public Transport - Providing for car based transport decreases role for public transport.	704, 1424, 1615, 1817, 3541, 3264, 5110, 5219, 5861, 5942, 6378, 6907, 7286, 7532, 7721, 7737

Response:

The proposed expressway provides the opportunity for high quality east-west public transport along the corridor from the NW Sector and Epping. The facility for public transport did not previously exist.

4.11 Other Impacts

	Typical submissions include:
Pennant Hills Road - is considered to be inadequate as a link in the major road network.	4705, 5674, 8217

Response

Pennant Hills Road (part of the Cumberland Highway) north of the proposed expressway is presently being upgraded and traffic modelling undertaken confirms that the upgraded road will have capacity to meet the predicted traffic volumes.

	Typical submissions include:
Barclay Road - Concern was expressed regarding present traffic volumes and safety on Barclay Road and congestion at the North Rocks Road/Barclay Road junction.	1966, 3832, 5564

Response

Once the proposed expressway is constructed, including the busway, traffic and commuters will have an alternative to the use of North Rocks Road. It is anticipated that traffic volumes will reduce even though it is likely that some arterial traffic may still want to use the route.

	Typical submissions include:
Both support and concern have been expressed regarding the possible future F3 link from North Ryde to Pearces Corner. The B3 route is shown in the Western EIS but not in the Eastern EIS.	3322, 4905, 5109, 5220, 5962, 6082, 7310, 7715, 7782, 14085, 14250

Response:

The transport modelling and environmental analysis for the 1992 EIS did not consider the construction of the F3 link. The link is not included in current RTA construction plans. The Government has stated that, if at some time in the future a decision is made to investigate the construction of the link, it would follow full community consultation and if a decision was then made that the F3 link was warranted, an EIS would then be prepared.

	Typical submissions include:
Midson Road will have more traffic as a result of the expressway.	2948

Response:

The proposed expressway will remove some arterial traffic from Midson Road and provide better access to the local community.

	Typical submissions include:
Traffic exiting the expressway at Pennant Hills Road and proceeding north to the F3 would further congest the existing road system.	7076

Response:

Pennant Hills Road is currently being reconstructed and widened between Mahers Road and Boundary Road. This will provide a continuous six lane divided carriageway link between the proposed expressway and the F3 (Sydney-Newcastle Freeway) and meet the strategic transport needs. The construction of an east-west expressway would also attract traffic off Pennant Hills Road.

	Typical submissions include:
The traffic studies failed to consider the County Road route through Eastwood.	6175, 14085

Response:

The County Road reservation from Silverwater to Epping Road at North Ryde via Eastwood serves a different transport need to the proposed expressway. One common issue is the restricted crossing of the Main Northern Rail line which is a major barrier to traffic. The new crossing by the proposed expressway will relieve local pressure. Additionally, the 1992 Proposal will relieve Epping Road and reduce the temptation of motorists to use local streets as "rat runs" between Epping and Lane Cove Roads. The County Road was included in traffic modelling but not in the RTA's current construction programme, but planning studies are being developed.

	Typical submissions include:
Concern regarding access to Fontenoy Road.	3681, 7209

Response:

The proposed expressway will bridge over Khartoum Road and allow vehicular access to Fontenoy Road.

	Typical submissions include:
Local Traffic Management - Cost of maintaining local roads should be reduced provided that local traffic is managed in conjunction with freeway traffic management.	10383

Response:

One of the benefits of constructing the proposed expressway is that it will attract through traffic away from local roads. This will not only improve residential amenity but reduce the maintenance cost of the local roads.

	Typical submissions include:
Construction of the transport link will move the traffic congestion from Epping to the eastern end of the link at Epping Road near Delhi Road.	890, 977, 1337, 1853, 3243, 4886, 4905, 4906, 5091, 5084, 5122, 5211, 5239, 5347, 5858, 6038, 6127, 6138, 6157, 6932, 7009, 7283, 7305, 7306, 7540, 7585, 7751, 7783, 14207

Response:

The proposed expressway will allow traffic to avoid local streets when travelling through the North Western corridor. The eastern end of this corridor connects not only to Epping Road but also to Lane Cove Road, Delhi Road and Pittwater Road and dispersion of traffic on these arterial routes will reduce the traffic concentration on Epping Road. The RTA also has proposals to upgrade Epping Road in future east of the Lane Cove River including the construction of fly-overs at Centennial Avenue and Longueville Road.

	Typical submissions include:
Concern regarding the need for more detail of local traffic improvement measures at sites near the proposed expressway.	2286, 6908, 6890, 6892

Response:

The RTA will work with Councils through the Traffic Committees to develop and agree local area traffic management measures that become possible or are required following completion of the proposed expressway.

	Typical submissions include:
Are local roads included in the traffic modelling and are the changes in traffic shown in the EIS?	2286

Response:

The modelling of regional traffic only reflects traffic volumes on the arterial roads. Local traffic issues will be addressed by the RTA and local Councils through the Traffic Committees as the detailed designs for these roads are formulated.

	Typical submissions include:
Will there be increases in the number of lanes on Copeland Road and Beecroft Road in Beecroft?	2286

Response:

There are no plans to alter the configuration of Beecroft Road or Copeland Road.

4.12 Rail

	Typical submissions include:
What co-ordination has occurred between the RTA and Department of Transport regarding provision of a privately funded light rail system?	2286

Response:

The use of the light rail proposal has been discussed with the Department of Transport. The development of public transport by means of the bus lane and bus priority on Epping Road is agreed as the appropriate strategy. Any future light rail may use the bus roadway. In any event, the improved bus facility would serve to establish a patronage base for a future light rail.

	Typical submissions include:
The EIS did not provide an option for light rail similar to the Abigroup proposal.	876, 935, 1817, 2650, 2880, 2913, 3463, 3547, 3970, 4658, 4878, 5121, 5225, 5866, 5875, 6892, 6940, 7213, 7304, 7306, 7326, 7334, 7347, 7355, 7437, 7504, 7585, 7596, 7783, 7793, 7794, 7960, 8209, 14085, 14119

Response:

Investigations into light rail, as set out in the EIS and the background working papers, led to the conclusion that the North West Region required a combination of transport strategies. The provision of the busway linking to the existing rail with the tollway is seen as the appropriate combination to meet the diverse origins and destinations and the low density residential areas in the region. The first element of the Abigroup proposal was for a system to Manly Warringah and for step by step development to the North West. The government has adopted no light rail proposal at this time for the North West. Any future light rail in the area may use this bus roadway. In any event, the improved bus facility would serve to establish a patronage base for future light rail.

	Typical submissions include:
Light Rail in F2 Corridor - Light rail should be the first option in the freeway corridor with car parking 'kiss and ride' facilities and bus bays to feed the rail.	473, 888, 1166, 2610, 2756, 2883, 3226, 3868, 3888, 4070, 4288, 4441, 4886, 5180, 5264, 5578, 5607, 5618, 5645, 6075, 6081, 6178, 6352, 6471, 6445, 6892, 6997, 7009, 7073, 8209

Response:

Analysis of the residential density and the origin and destination of trips indicated these could be handled efficiently by the proposed busway without the additional capital cost of rail. Provision has been made for feeder buses and for any subsequent upgrading to light rail should the demand change.

	Typical submissions include:
Provision of a light rail system between Epping and Parramatta.	1931, 5931, 6378, 7334, 8210

Response:

The upgrading of public transport between Epping and Parramatta, possibly by use of light rail, would encourage additional public transport patronage. However, such a connection would not provide a practical alternative to the North West Transport Link and provision of funding for such a light rail connection would have to be considered independently.

	Typical submissions include:
Why were the light or heavy rail options, a practical alternative, so easily dismissed in the EIS?	160, 2221, 2286, 2712, 3876, 3911, 4278, 4366, 5189, 5542, 5607, 5645, 5663, 5875, 6106, 6208, 6214, 6378, 6905, 7007, 7056, 7573, 7699, 7858, 7913, 14085, 14119

Response:

The background working papers by Denis Johnston & Associates, 1991, after extensive analysis concluded there was no justification for a new fixed rail system in the corridor at this time. The diverse patterns of origin and destination, the ability of a bus service to handle the demands and the high cost of a rail system were all relevant factors. The options were not dismissed easily and conversion of the busway to light rail at a later date will be possible.

	Typical submissions include:
Railways, preferably underground, are the best people movers. One should be built as an alternative to road links.	951, 1418, 1599, 3452, 3540, 4742, 7362, 6651, 12706

Response:

No one transport strategy on its own solves the transport requirements of the North West Region. Composite integrated strategy is required. The proposal of buses feeding existing rail services to complement the road network is a realistic strategy to meet the diverse origins and destinations in the region. The diverse demand does not warrant high cost underground rail systems at this time.

	Typical submissions include:
Ban all private cars and build a very efficient railway.	2914, 3979 6892

Response:

The banning of cars is not an acceptable option when diverse patterns of business and recreational travel are considered. The provision of a balanced strategy of roads, buses and rail provide the best opportunity for reducing car dependency in the community served by this corridor.

	Typical submissions include:
Light rail system could relieve peak hour congestion and service needs of the North West. Present road system then would only need minor upgradings.	856, 1118, 3802, 3805, 3868, 5578, 5607, 5645, 6892, 7290, 12775

Response:

The diverse pattern of origins and destinations and low population density in the region can be served by a bus service and does not warrant the expense of fixed rail at this stage. To achieve a balance of transport options, the construction of a 4 lane expressway with dedicated bus lanes is considered the appropriate strategy. This will provide options to reduce car dependency.

	Typical submissions include:
A light rail system should service those areas not already serviced by rail to enable people to travel across the suburbs.	7203, 11417, 1424, 2703, 3452, 3474, 4705, 6917

Response:

The diverse patterns of origins and destinations in the region are best served by bus services focused on the existing rail network. The demand can be met by buses and does not warrant the capital expenditure required for a fixed rail at this time. The feeder bus and express bus system on dedicated bus lanes provides the best affordable opportunity to reduce car dependency.

	Typical submissions include:
Light Rail on Existing Roads - Light rail on Barclay Road, North Rocks Road, Plympton Road then the transport corridor near Castle Howard Road is flatter and near shopping centres and uses already wider roads.	7066

Response:

There would be significant traffic implications of introducing light rail at grade into the road network. Delays to the rail service or extensive disruption to traffic would inevitably occur. When considering the level of predicted passenger demand the needs could be more economically met by a bus service. Dedicated bus lanes on the corridor as proposed would provide fast travel times and provide an attractive public transport option to car usage.

	Typical submissions include:
Extend Carlingford Rail Line - Extension of the Carlingford line to serve North Rocks, Castle Hill and Dural.	2375, 4097, 5757, 6002, 9168, 12799

Response:

Density of residential development and diversity of origins and destinations make it difficult to justify development of high cost rail facilities when compared to the substantial competing demands for limited funds for transport infrastructure. The suggested extension does not provide the increased capacity in the east west corridor needed to meet the transport demand.

	Typical submissions include:
Department of Transport is actively looking at the F2 corridor for light rail to serve the Epping/Ryde area and the North West Sector.	11201, 7505

Response:

The Department of Transport, in its submission to the EIS indicated its support for the innovative strategy of incorporating high standard public transport facilities in the total package proposed for the North West Transport Link. The Department indicated the busway will have the same speed advantages as rail at a substantially lower cost and if demand grows could easily be replaced by light rail.

4.13 Traffic Avoiding Tolls

	Typical submissions include:
Traffic data is presented in a general and obscure way. It defies analysis.	6892

Response

The EIS provides a summary of a large amount of traffic data. The detailed analysis and information is set out in the background working paper. The method of presentation is in a format generally used to convey traffic data.

	Typical submissions include:
Motorist reluctance to pay the toll will lead to use of alternative routes to avoid the toll gates. Local roads will become more congested with resultant maintenance costs on local roads. Back streets will still be used as rat-runs. There is concern that if a toll is charged toll avoiders will clog local streets and Epping Road traffic will not reduce.	1024, 1487, 2286, 4305, 4673, 5219, 5517, 6203, 6890, 7853 2103, 2639, 3561, 3611, 5155, 5219, 5239, 5319, 5875, 5927, 5906, 6059, 6061, 6128, 6138, 7213, 7379, 7506, 7519, 7596, 7794, 7788

Response

All existing arterial roads will remain as alternative routes to the tollway. Individual drivers would assess travel time, costs, vehicle operating costs and accident costs when selecting their travel routes. Predicted traffic volumes on the tollway and on arterial routes were based on these factors. Significant reduction in traffic is expected on local streets. A reduction in traffic on the Epping Rail Bridge is also anticipated.

4.14 Travel Times

	Typical submissions include:
The travel time savings resulting from the transport link will not be worth the devastation of the neighbourhood.	4531

Response:

The environmental assessment process ensures that all the adverse impacts as well as all the benefits of a project are assessed. The proposed expressway has been developed following

consideration of the effect on neighbourhoods as well as the transport benefits. Measures to maximise project benefits and minimise adverse impacts have been taken.

	Typical submissions include:
Have travel times for each alternative been approximated? Suggests that F2 alternatives would take a shorter time to travel.	2091

Response:

The tollway alternative which has full grade separation at interchanges would have the shorter travel time. An evaluation of the benefits of the difference in travel time are contained in the EIS which estimates the travel time savings on the modelled road networks. These benefits are set out Table 10.1 of the Eastern EIS and Table 22 of the Western EIS.

	Typical submissions include:
Does the relatively small saving of 5% travel time by the year 2006 warrant significant human and environmental impact?	4786

Response:

The savings of 5% in travel time are based on total travel on a wide network. The significance of these savings are reported in the economic analysis in the EIS. The benefit cost analysis indicates the savings of travel times, vehicle operating costs and accident costs are significant for the proposal.

4.15 Trucks and Accidents

	Typical submissions include:
Concerns that the increase in heavy and dangerous vehicles and in vehicle speeds will lead to more serious accidents in the area.	4290, 7149

Response:

Freight movements are at present restricted to a network of congested arterial roads and this results in low travel speeds and truck/car conflicts at intersections. Existing New South Wales and international data indicates a lower rate of accidents when travel is on grade separated routes

instead of congested arterial roads. It is anticipated that heavy vehicle and dangerous goods vehicle accident rates will decrease following the completion of the proposed expressway.

	Typical submissions include:
Counting truck numbers on Pennant Hills Road and Epping Road and then assuming the percentage of trucks in the traffic stream is not satisfactory. EIS does not mention the 769 heavy trucks passing Carlingford from 10.00pm to 6.00am. The predicted number of trucks using the proposed expressway is underestimated.	466, 1931, 2286, 2387, 3054, 4828, 5219, 5221, 5225, 5645, 5580, 6378, 6940, 7209, 7427, 7246

Response:

The assessment of future truck usage of any strategic route is a complex task. The counting of trucks presently using available truck routes is the most realistic way to obtain factual base data. The transport consultant then used this data in determining future truck usage. It is envisaged trucks with destinations to the west and southwest will use the proposed expressway rather than the alternative routes such as Epping Road.

4.16 Truck Curfew

	Typical submissions include:
Trucks should not be permitted to travel at night between 10 pm and 6 am.	7115

Response:

It is not proposed to impose a truck curfew on the proposed expressway. The noise of trucks at night has been assessed in the EIS and the background noise reports. Noise on the proposed expressway will be controlled by design of noise barriers in accordance with the RTA's Interim Traffic Noise Policy.

4.17 Truck Route

	Typical submissions include:
Concern that a large number of trucks will be introduced into an established residential area when a route could be established outside the built up area.	409, 415, 939, 966, 1165, 1487, 1684, 1687, 2727, 3035, 3090, 3474, 3778, 3876, 3911, 4290, 4295, 4357, 4379, 4441, 4508, 4761, 5542, 5555, 5614, 5644, 6325, 6325, 6378, 6494, 6844, 6890, 6892, 7014, 7049, 7056, 7149, 7852, 7867, 7869, 8204, 10384

Response:

The proposed expressway will provide a strategic link in the Sydney road network. It serves a variety of transport functions including commuter traffic, recreational traffic and commercial traffic, as well as a public transport corridor. An outer route to serve truck routes alone would not meet other network requirements, nor the needs of those trucks with urban destinations.. The development of the road network is a continuing process and specific needs of trucks will continue to be assessed.

	Typical submissions include:
The EIS neglects to state the proposed tollway will also encompass the Sydney Orbital Truck Route. This road will become a major truck link between Queensland and Victoria.	856, 1118, 7021, 7203

Response:

Section 13.2.2 of the Eastern EIS states that the proposed link would be part of the Orbital Route catering for all vehicles. The Orbital Route would form a link in the National Highway between Liverpool and Hornsby. Analysis of interstate truck traffic formed part of the data used for the 1992 EIS to predict truck usage.

	Typical submissions include:
Freight - More attention should be paid to improving transport of goods on the rail network and to freeing roads from truck traffic.	966, 2552, 3090, 4305, 4366, 4761, 6209, 6378, 6940

Response:

The RTA supports the improvement of the rail freight system so more appropriate goods are transported by rail instead of road. This support does not conflict with the concept behind the proposed expressway which is considered to be part of a comprehensive transport strategy for north-west Sydney.

	Typical submissions include:
The EIS assessment of truck traffic was considered inadequate and there is concern regarding the noise generated at night.	2387, 2945, 3253, 4776, 4786, 5110, 5134, 5219, 5645, 5754, 6378, 6890, 7498, 7585, 7596, 8979

Response:

A detailed assessment of the number of trucks was included in the background traffic studies and these are summarised in Section 6.4.1 (p 35) of the Eastern EIS and Section 3.6.4 of the Western EIS. These volumes were the basis for the noise studies for the EIS. The significance of the transport needs for trucks in the corridor was assessed and the proposals developed catered for the needs of trucks as well as cars and public transport. The proposed expressway is a new link in the network which allows a better balance for both cars and trucks to meet transport needs. The proposed expressway will serve both urban and inter-urban traffic. The noise associated with the projected traffic stream including trucks is dealt with in the EIS and in section 8 of Part 6 of this Assessment Report.

	Typical submissions include:
Figure 17 of the Western EIS indicates short-cut truck routes.	3773, 6378

Response:

Traffic studies undertaken for the EIS indicated that trucks were using the High Road/Jenkins Road and other existing north-south roads. This was presented in Figure 17 of the Western EIS as a desire line and not as a line on those roads.

5. PROPERTY ISSUES

5.1 Acquisition Demand

	Typical submissions include:
Accepts the construction of the F2 Road, as it is inevitable. Immediate acquisition of property in Mahers Road is required. RTA's attention is drawn to the intolerable position residents have been placed in.	714, 1494, 1868, 2899, 2145, 4036, 4787, 5245, 5858, 14106, 14107

Response:

The RTA appreciates the effect that the length of time in conducting a thorough environmental assessment for the 1992 Proposal has had on local residents. Upon determination, if the proposal is to proceed, the acquisition process will be commenced in accordance with the RTA Land Acquisition Policy on the properties required for construction of the proposed expressway. Advisory letters will be sent to all affected properties immediately if a determination is made to proceed with the proposed expressway.

5.2 Acquisition Policy

	Typical submissions include:
The Land Acquisition Act does not assess or address the dislocation created by a forced move or compensate for hard work, saving or a stable home for children.	1633, 6892, 8019

Response:

An extract from the RTA Land Acquisition Policy Statement is set out below:

> *The Authority endeavours to purchase the land by negotiation in much the same way as a private property transaction. The offer of compensation is assessed in accordance with the Land Acquisition (Just Terms Compensation) Act 1991 hereafter referred to as "The Act". When roadworks are programmed the Authority advises the owner that the land is required and when occupation of the land is required. (Occupation of the land is usually required for adjustment to public utilities prior to actual road construction.)*
>
> *The letter will advise the owner that a Valuer representing the Authority will make arrangements to inspect the property and discuss the acquisition for the purpose of submitting a formal offer for the owner's consideration. The letter will also state that if an owner engages a Registered Valuer and a Solicitor the Authority will reimburse reasonable fees. Valuation fees are reimbursed in accordance with the Authority's schedule included with the letter and legal fees in accordance with Schedule 1 of the General Order of the Conveyancing Act. Every effort will then be made to negotiate an agreement.*

Compensation is to be assessed by having regard to the market value of the property as if it were unaffected by the road proposals. In addition to the market value regard is also taken to special value, severance, disturbance, solatium and any increase or decrease in the value of any other land adjoining or severed by the carrying out the work. Division 4 of The Act defines the owner's entitlement to compensation."

	Typical submissions include:
We are agreeable to the RTA resuming our home, as long as satisfactory market value for a property untouched by the Freeway, plus adequate compensation is received.	2938, 3383, 4906, 5217

Response:

The RTA has a standard policy which is used when acquiring houses. For details of this policy, see section 5.2 above.

	Typical submissions include:
The consultants have not yet explained the approach to property acquisition in the EIS as requested. The consultants initial contact and failure to respond to questions has been distressing.	510, 4435

Response:

The RTA's approach to property acquisition is outlined in the 1992 EIS. A number of public meetings were held to fully explain both the Land Acquisition Policy for lands to be used for the construction of the corridor and the Special Acquisition Policy for those properties identified as such in the Environmental Impact Statement. Further consultation will take place with affected property owners.

	Typical submissions include:
Claim for compensation because searches on property purchase did not refer to any adverse impacts from the Expressway.	3067, 5674

Response:

A reply to a property enquiry lodged with the Authority advises whether or not proposed changes to road boundaries means that properties not previously affected are now affected.

	Typical submissions include:
Not informed of compulsory acquisition when land was bought 2½ years ago.	4549 6892

Response:

As proposals for road works are refined, there are changes made to existing alignments, so it is possible that at the time, of an enquiry, acquisition was not contemplated.

	Typical submissions include:
On purchase of land there was no mention of Coral Tree Drive being affected by RTA decision and in the last 3 years, 3 new houses have been built in the affected area. Surely it would have been appropriate to provide warning to intending residents.	2880

Response:

As proposals for road works are refined, there are changes made to existing alignments. It is possible that, at the time of an enquiry acquisition was not contemplated. This was certainly the case with Coral Tree Drive where alternatives C and D moved the expressway to reduce the bushland impact. This was first addressed during preparation of the 1992 EIS.

5.3 Isolation

	Typical submissions include:
Property will be isolated by increasing volume of traffic on Copeland Road.	7398

Response:

There will continue to be changes in traffic on Copeland Road. The decision to proceed with the tollway is likely to reduce Copeland Road traffic as the new link in the arterial road system would improve conditions in that particular location.

5.4 Noise Barriers

	Typical submissions include:
If the noise barriers do not result in noise levels meeting the specified criteria, the respondent will require the RTA to purchase the property.	921, 1484, 2944, 3468, 3772, 3999, 4784, 4909, 5240, 5250, 5328, 5924, 6168, 6892, 7287, 7378

Response:

The RTA has undertaken to purchase those properties which are directly required for the work or which are covered under its RTA's Special Acquisition Policy (see below). If the specified target for noise control set out in the Interim Noise Policy are not reached, for other properties, the RTA would consider additional measures including a request for purchase.

5.5 Property Affect Information

	Typical submissions include:
Purchaser given unreliable information when told the freeway would not be built for at least 20 years.	7220

Response:

As proposals for road works are refined, there are changes made to intended construction programming and to existing alignments. So it is possible that the information given at the time of request was current and correct at that point of time. The Special Acquisition Policy was developed to address the changed priorities that flowed from the release of the Roads 2000 Strategic Plan.

	Typical submissions include:
Artists' impression regarding property effects misleading.	4359, 4435

Response:

Every reasonable attempt was made to show details of property effects through the use of plans, elevation and artists' impressions in the EIS. These aids were produced to make the understanding of the proposal clearer rather than mislead the reader. Some details will be refined in the final design and minor variations may occur. The information provided allowed community comment and assessment of broad impacts on properties.

	Typical submissions include:
Property acquisition at Sierra Place, Baulkham Hills not mentioned in EIS. One figure in EIS indicates that 4 properties will be acquired.	2286, 6993

Response:

Figure 34.1 of the Western EIS describes the impact. Parts of 4 properties in Sierra Place are required.

	Typical submissions include:
Identification to within 1 metre boundary of the area to be purchased. What is the current position of property boundaries along the road corridor when maps used were out of date?	2286, 6993

Response:

The map used in the Eastern EIS as the basis for identifying areas to be purchased was out of date and did not exactly show property boundaries as at the time of preparation of the 1992 EIS. However, the areas to be purchased as indicated in Figure 34 of the Western EIS are indicative of the property effects. The final design will refine details and individual boundaries may move by more than 1 metre. The diagram attached as Appendix 48 indicates properties to be acquired or subject to special acquisition.

5.6 Property Values

	Typical submissions include:
Property will be drastically affected by this Freeway being so close, in that it will devalue property enormously. Property values will be reduced by noise pollution, visual impact and noise barriers.	138, 398, 833, 877, 934, 951, 979, 1026, 1129, 1403, 1488, 1853, 2244, 2354, 2655, 3035, 3556, 3803, 5319, 5328, 5372, 5560, 5913, 6141, 6465, 6471, 6892, 6965, 6979, 6996, 6999, 7012, 7017, 7329, 7336, 7448, 7497, 14094

Response:

The RTA will acquire properties which are directly affected by the work or which are covered under its Special Acquisition Policy (see 5.11 below). The existence of the road reservation has had a continuing effect on the values of properties near it, and these effects are already reflected in current values.

	Typical submissions include:
The value of a house in Lamorna Avenue has decreased 30-40%.	5239

Response:

Design changes are proposed to reduce most impacts on Lamorna Avenue. The RTA will acquire only properties which are directly affected by the work or which are covered under the Special Acquisition Policy (see 5.11 below). As mentioned above, the existence of the road reservation has had a continuing effect on the values of properties near it, or these effects are already reflected in current values.

	Typical submissions include:
Pennant Hills Golf Club has been using land set aside for the F2 and has no case if it is required to relinquish part of the property.	3010, 4485, 6341

Response:

The proposal to avoid the golf course follows extensive consultation both with the Golf Club and with residents in Mahers Road. The relative issues have been documented and considered as part of the assessment process. Essentially, any incursion into the golf course necessitates alterations and these become progressively more difficult and expensive as the land-take increases. The viability of the Golf Club is severely threatened if additional land is taken.

5.7 Purchase

	Typical submissions include:
At date of purchase no mention made of Arterial Upgrade.	176, 191, 470 6892

Response:

The arterial upgrade is not now proposed by the RTA.

	Typical submissions include:
Most people who bought properties near the road reservation did so without knowledge of its existence. Property searches are only on the property to be purchased.	5930, 6066

Response:

The road reservation has been indicated on planning schemes for many years. It is correct that the information provided by property searches often fails to reveal the existence of road reservations, and that the existence of road reservations is often found out only after a property has been purchased. Instructions to solicitors should seek broader information than direct affectation.

	Typical submissions include:
Expedient action required in property purchase.	106

Response:

The RTA will commence negotiations for purchase of affected properties in accordance with its Acquisition Policy following determination of the EIS process.

	Typical submissions include:
No notice provided to residents affected by the Carlingford Road alternative.	663

Response:

This alternative is not now proposed by the RTA.

5.8 Recreation

	Typical submissions include:
Recreation - Concern was expressed regarding the loss of recreational areas such as bush, tennis courts, golf course, ovals, walking trails.	6101, 6884, 7122, 7497, 7971

Response:

The corridor reserved for the proposed expressway has been available for recreation for many years. The EIS assessed the impacts on these areas. It is proposed to maximise the continuing benefit from use of these areas along the corridor, and to allow public access. Public access will be maintained across the proposed expressway. The golf course will not be affected significantly and where possible other facilities will be maintained or restored. Some facilities will be lost.

5.9 Schools

	Typical submissions include:
Australian Independent School - School located on land leased from Department of Planning. What arrangements will be made to ensure the school is relocated?	6024

Response:

The lease to the Australian Independent School from the Department of Planning sets out the conditions relating to use of land. The school should commence negotiations with the Department concerning relocation if the proposed expressway proceeds.

5.10 Solatium

	Typical submissions include:
The ceiling of $15,000 for solatium is grossly inadequate. Clear criteria should be set down for the determination of solatium.	3545, 5719, 7330, 7841, 7784

Response:

Prior to 1st January 1992 solatium was only payable at the discretion of the Land and Environment Court. Since commencement of the "The Land Acquisition (Just Terms

Compensation) Act 1991", solatium is limited to a maximum of $15,000 or as determined from time to time by the Minister. Solatium is to be assessed in each case on its merits.

5.11 Special Acquisition

	Typical submissions include:
Specific properties be considered for purchase by RTA due to effect of F2 on standard of living, increased stress.	4234, 4872, 6037, 6890, 6892, 6908, 7917

Response:

The details of the special acquisition policy are set out below. Only properties which meet this requirement would be eligible for special acquisition.

Where a property zoned Residential 2(a) shares a boundary with the required road boundary or is separated from that boundary by a narrow low-trafficked road (such as Mahers Road or Somerset Street), the RTA is prepared to acquire the property.

This would not apply to properties along the Expressway option purchased or developed since March 1987, as, from that date, the public would have been aware of the intention to build the F2 Freeway by the release of the Roads 2000 Strategic Plan.

The following are further elements of this policy:

- Owners are to be responsible for their own costs associated with selling their property to the Authority, including legal costs.
- No allowance will be made in respect of those costs associated with the purchase of a replacement property.
- The Special Acquisition Programme will not come into operation until such time as approval is given to the commencement of actual physical roadworks. This would be signalled by the letting of contracts for this work.
- Landowners wishing to exercise their option under this policy must elect to do so within 12 months of the Authority's notification that approval has been given to the commencement of actual physical roadworks and that the sale to the Authority must be completed within 12 months of the conclusion of the initial 12 months period.
- If an agreement cannot be reached between the Authority and the landowner as to the purchase price of the property to be acquired, the landowner can elect to have the matter determined by a mutually acceptable expert. The expert's determination will be binding on both parties should the owner wish to proceed. The Authority will be responsible for reasonable costs associated with the determination.

	Typical submissions include:
All other properties in Ferndale Road are listed for either acquisition or demolition. Residents will be financially disadvantaged and would like their property added to the acquisition list.	6299

Response:

If a determination is made to proceed with the proposed expressway, the Special Acquisition Policy will apply and will cover the instances mentioned in the submission.

	Typical submissions include:
Received an RTA letter for acquisition of their property, if purchased before May 1987. Resident purchased in August 1987 and obtained a letter from RTA assuring property was not to be cut up by proposal. Resident's property is now totally affected.	5172

Response:

If the property is totally affected, the RTA will purchase the property.

	Typical submissions include:
Disbursements - Due to noise and pollution other considerations should be given to residents in the Special Acquisitions area, such as removal expenses, stamp duty, out of pocket expenses etc.	1487

Response:

The intent of the Special Acquisition Policy is purely to provide a fair buyer that the landowner may not be able otherwise to find.

	Typical submissions include:
Delayed Special Acquisition Until After Construction - We would like the opportunity to live in our home for 12 months after the tollway is opened to see if we can adapt to changes, and then, if conditions are unacceptable, the RTA purchase the home under the same valuation conditions as now proposed.	3052, 6908

Response:

The Policy outlines that negotiations are to commence within 12 months of letting a contract for the physical construction of the road and complete acquisition within 12 months of the conclusion of the initial 12 months period. The RTA would consider any application to extend that time period after the contract is let.

	Typical submissions include:
RTA makes properties untenable places to live because of various forms of pollution and then inform residents that the costs of relocation is their problem.	5767, 6890, 7203, 8203

Response:

The Special Acquisition Policy applies solely to those properties identified as eligible for special acquisition in the 1992 EIS. Where a property is zoned 'Residential' and shares a boundary with the required road reserve or is separated from that boundary by a narrow low-trafficked road, the Authority is prepared to enter into negotiations to acquire that property. This policy recognises that people who own property as described above may not find the changed environment acceptable. The Authority is prepared to become the purchaser that these owners may not or cannot find should they wish to sell their properties. This policy will not apply to properties along the Expressway option purchased or developed since March 1987, as from that date the public would have been aware of the intention to build the F2 Freeway by the release of the Roads 2000 Strategic Plan. The purchase price of any property acquired under this policy is to be assessed having regard to the existence of the road reservation as at March 1987.

	Typical submissions include:
Are residents entitled to monetary assistance to build brick walls for residences not immediately affected by the proposal, e.g, Ray Road, Midson Road?	5767, 7203, 8203

Response:

The issue of affectation to Ray Road and Midson Road properties arose as a consequence of an alternative which is no longer proposed.

	Typical submissions include:
Objects to the use of the Roads 2000 document as a measure for treatment of home owners. The document was not widely distributed at the time of its release and was not discovered during legal searches for properties in the area.	6378

Response:

The Roads 2000 document was circulated in the NRMA's Open Road Magazine in New South Wales, distributed at the Royal Easter Show and widely publicised in the media at the time of release. Enquiry of the RTA after that time would have indicated the status of the F2 based on Roads 2000. The details of legal searches are matters for the respective solicitors.

	Typical submissions include:
Does special acquisition apply to properties which are being rented.	Raised during public meetings.

Response:

Yes.

6. SOCIAL ISSUES

6.1 Aboriginal Heritage

	Typical submissions include:
Excavation of site CF2 in the tollway corridor produced thousands of stone artefacts and clearly this is a significant site. This is the sort of work that needs to be done by RTA. No damage should occur to any archaeological site by road construction. There may be other undiscovered sites in Darling Mills State Forest which would be damaged by road construction.	4312, 4354, 4313, 4390,6884, 6908, 6916, 7007, 7087, 8096, 14139

Response:

These issues were addressed in Chapter 22 of the Western EIS. If it is decided to proceed with the 1992 Proposal, the conditions of determination will require further archaeological assessment before construction commences. Any sites totally or partially affected will require measures to reduce impacts to be undertaken in consultation with the National Parks & Wildlife Service.

	Typical submissions include:
No report or statement by the Metropolitan Local Aboriginal Land Council in EIS or working papers.	6916, 14140

Response

Copies of the consultant's reports were sent to the MLALC for their comment. No response had been received from MLALC when the EIS was exhibited. Further liaison with local aboriginal land councils will occur.

	Typical submissions include:
No detailed assessment of significant sites in the tollway corridor has been done.	4354, 7087,7852

Response:

The consultant engaged by the RTA to assess archaeological sites undertook a detailed assessment of significant sites. Details are contained in the Working Paper (Exhibits 6 and 20).

	Typical submissions include:
Number of Sites - The EIS summary states there are 10 potential sites; there are 11 sites.	7087

Response:

The Western EIS correctly noted that there were 11 potential sites. The summary of the Western EIS (page xxv) incorrectly identified that there were 10 potential sites.

	Typical submissions include:
EIS does not clearly set out which sites and potential sites will be affected especially if Variation C was used.	6916

Response:

The EIS stated that with Variation C no sites would be affected. However, the consultant's report indicated that one site, CF2, would be affected. When final design is complete, further archaeological assessment will be undertaken to ensure that any sites likely to be affected are dealt with as required by NPWS.

	Typical submissions include:
Further archaeological surveys required of private property.	4354, 6935, 14139

Response:

If it is decided to proceed with the 1992 Proposal, and once detail design is completed, the conditions of determination will require further archaeological assessment before construction commences.

	Typical submissions include:
Treatment of archaeological sites during construction.	6935, 14139

Response:

To prevent damage to archaeological sites, employees and contractors will be informed of the presence of sites. Buffer zones will be created near sites to warn of the existence of the site and to prevent damage. If any site is discovered during construction, work will cease pending advice to the National Parks and Wildlife Service.

	Typical submissions include:
Does the expression "cut across" archaeological sites mean destroy?	7750

Response:

If Variation C to the proposed expressway is adopted, it will "directly affect" site CF2. It was in this sense that the words "cut across" were used. The extent of "direct affect" on site CF2 will depend on detail design. The RTA will liaise with NPWS in relation to any archaeological site (including CF2) at the design stage.

	Typical submissions include:
No assessment of bushland to the rear of Gilda Street, therefore the impact on aboriginal sites is unknown.	14207

Response:

If it is decided to proceed with the 1992 Proposal, and once detailed design is completed, further archaeological assessment will be required before construction. This area of bushland will be particularly referred to for investigation.

6.2 European Heritage

	Typical submissions include:
"Havilah House" was not included in either EIS yet the property is listed on heritage registers.	465

Response:

Havilah House is not affected by the proposed expressway.

	Typical submissions include:
Building at 45 Carlingford Road, Epping is dated 1891-1915 not 1916-1940.	7338

Response:

This property is not affected by the proposed expressway.

	Typical submissions include:
"Marooba" - Windsor Road an historical landmark of interest to gardeners. Design should be modified to avoid the home. Pearce's Cemetery on Seven Hills Road	3030, 6307, 7976

Response:

Marooba is not included in the Baulkham Hills Shire Council's list of historic properties. Pearce's Cemetery is not affected by proposed expressway.

6.3 Health

	Typical submissions include:
Deterioration in public physical and mental health will add an unknown cost to construction costs.	4923, 5141, 6892, 7336, 7386, 7532

Response:

The impacts of increased traffic noise on health have been discussed in section 3.1 of the background working paper by Wilkinson Murray Griffiths (Exhibit 30) and in section 8 below. There is no direct allowance for health costs in the economic evaluation.

6.4 Security

	Typical submissions include:
EIS does not discuss security near the viaduct to prevent vagrants/miscreants. There is a need for night protection for neighbouring residents.	1686, 2376, 5221, 6173, 7724

Response:

The RTA will require appropriate site security during construction of the proposed expressway. Other aspects of security are, in the RTA's view, matters for the police.

6.5 Social Impact

	Typical submissions include:
RTA fails to establish that social benefits outweigh adverse social impacts; devastating impact of expressway; loss of life style amenity, accessibility to friends.	714, 1581, 5319, 6154, 7289, 7341,

Response:

The Eastern EIS (Section 10.5) and the Western EIS (Section 16.4) deal with the subject of community impacts.The Eastern EIS (Sections 10.9 & 11.1) and the Western EIS (Chapter 26) balance these impacts with social benefits.

	Typical submissions include:
Residential quality of living will be reduced for residents by the F2. High noise and air pollution and outlook over a busy freeway will be intolerable, affect health, bushland, views and wildlife.	136, 172, 951, 1544, 1934, 2371, 2655, 2727, 3008, 3067, 3081, 3082, 3152, 3802, 3833, 4300, 4360, 4364, 4445, 4718, 5625, 5644, 6178, 6428, 6449, 6465, 6471, 6892, 6966, 6978, 7203, 7883, 8206, 8219

Response:

Residential quality could change for some residents living in close proximity to the proposed expressway. These matters were discussed in details in the EIS under various subject headings.

	Typical submissions include:
Impact on efficiency and competitiveness of regional enterprises.	10384

Response:

The RTA considers that the proposed expressway will have a beneficial impact on these matters.

	Typical submissions include:
Compensation - Due to loss of quality of life, including loss of aesthetics.	3681

Response:

The EIS process is aimed at assessing the environmental effects of the proposed expressway. The RTA will entertain claims for compensation in accordance with its Acquisition Policies.

	Typical submissions include:
No attempt to satisfy the aspirations of residents to improve their quality of life, while trying to solve the perceived congestion problem.	7253

Response:

The proposed expressway was selected by the EIS process as the alternative for the North West Transport Link which would effect the greatest overall net benefit in the Region.

7. ECONOMIC

7.1 Accidents

	Typical submissions include:
There cannot be a saving in accident costs of $8.12 million as claimed.	6884, 6890, 6892

Response:

Accident rates on expressways are substantially less than rates on arterial roads. The traffic study (Denis Johnston & Associates 1991e) estimated the numbers of fatal, major and minor traffic accidents for each option. The costs per accident were based on RTA standards, but with the value per life lost doubled in line with current standard OECD practice.

7.2 Alternatives

	Typical submissions include:
The short-listed alternatives on which the analysis is based are nowhere clearly explained or cross referenced to the EIS. In fact, such cross referencing is totally absent in the report.	5901, 6895

Response:

The lead consultants (Maunsell, Manidis Roberts Consultants and the Snowy Mountains Engineering Corporation) determined the short-listed alternatives as described in the 1992 EIS. The economic analysis of these short-listed alternatives was then undertaken and the report written as an input to the EIS. There is cross referencing in the EIS to the economic evaluation.

7.3 Benefit/Cost

	Typical submissions include:
Traditional cost benefit analysis used for the EIS is a simplistic model which has been discredited as a valid analysis of the complex interactions of land use transport patterns. The degree to which market or pricing systems reflect true costs especially their long term influence, interaction between urban design and transport and the influence of interventions on the pricing of resources and services should be addressed. Cost benefit analysis is an unsophisticated tool wholly inappropriate for projects with significant environmental applications for assessing different transport options. The proposal should assess the environmental and social costs and benefits and be demonstrated to be cost effective or not proceed	3695, 3869,3889, 4905, 5141, 5200, 5121, 6154, 6884, 6885, 6895, 6905, 6916, 6933, 7447, 7451, 7762, 12854

Response:

The traffic modelling used (Exhibit 16) was considered to be recent and complete, and to be the most appropriate to assess the traffic impacts of the proposal and provide input into the economic evaluation. All models are necessarily simplifications. An important simplification in this case is the fixed trip assumption. However, models adopted by the consultant reflect evaluation methods developed over many years and recent development of these methods.

The economic evaluation included an assessment of social and environmental costs and benefits such as travel time savings, property effects and noise effects. In addition, the environmental impact statements included detailed social and environmental impact assessments of the proposal, on the basis that cost-benefit analysis is only one method used in the decision-making process.

	Typical submissions include:
There has been no evidence of the benefits to be experienced by private motorists.	3452, 5764, 7762

Response:

The Economic Evaluation working paper (Exhibit 37) sets out the benefits to motorists divided into time savings, vehicle savings and accident cost reductions.

	Typical submissions include:
As the EIS working papers only indicate a 1% improvement in traffic operating costs how can the expenditure be justified. There is inadequate evidence to show economic benefit of the link.	2757, 5319, 6922, 7447, 7699

Response:

The base economic figures include the total cost of operating traffic on the metropolitan road network north of the Harbour. The 1% improvement is most significant and flows into the benefit cost figures set out in the report. These results justify the expenditure.

	Typical submissions include:
The benefit cost ratio of 0.99 of the North West Transport Link (West) is not economically viable.	6890

Response:

The benefit cost results show that construction of the western section by itself (as expressway or arterial) is not viable (ie. total estimated benefits barely equal total estimated costs). However, the option of constructing both sections provides the highest estimated net benefits. If an expressway is constructed in the east, construction of the western section provides positive net benefits.

	Typical submissions include:
Table 16 indicates that the viability of the North West Transport Link (West) rests entirely upon the construction of the North West Transport Link (East). Therefore, as there is no economic case for the North West Transport Link (West) independent of the North West Transport Link (East), the project should not proceed.	6884, 6892

Response:

This conclusion is not agreed to. The construction of both west and east has the best economic results. The projects are interdependent. The benefits of the whole scheme exceed the sum of benefits of the two sections as stand alone constructions.

	Typical submissions include:
Cost benefit analysis was not undertaken for all transport options.	6890, 6895, 6905, 7762

Response:

Certain options were eliminated on traffic, social, engineering and environmental grounds and were excluded from the brief for the economic analysis. This is documented in Part B of the EIS (West) and Part C of the EIS (East).

	Typical submissions include:
The benefit cost analysis should be reviewed where practicable to consider the inclusion of an assessment of social, heritage, air quality and loss of open space.	6898, 6908

Response:

Social effects were quantified in the economic evaluation in the 1992 EIS and in the considering of noise effects in the 1992 EIS. It was not considered possible to quantify all social effects in the economic evaluation (eg severance) but those effects are discussed in the EIS. These latter social effects are unlikely to materially affect the results of the cost-benefit analysis. The loss of urban bushland is quantified, and air quality is discussed in the economic evaluation. Heritage effects are discussed in the EIS.

	Typical submissions include:
Determining economic viability based on the benefit cost ratio has problems from failure to: Consider if the assumed future network is sustainable and acceptable Evaluate new uses induced by new interactions of transport demand infrastructure and land use. Recognise that the benefit cost ratio is just a proxy measure.	6898

Response:

The benefit cost ratio is widely accepted as an important decision making tool. It is a recommended decision criterion in the NSW Treasury Guidelines (1990) on economic appraisal and the Roads and Traffic Authority's economic analysis manual (1990). The sustainability and acceptability of the future network is also tested in the social, engineering, traffic and environmental investigations in the EIS. A specialist consultant report was specifically commissioned to address the issue of new uses induced by new interactions of transport demand infrastructure and land use (MSJ Keys Young Planners 1992).

	Typical submissions include:
Benefit cost ratio analysis is more appropriate for determining the relative ranking than the absolute worth due to the need for simplifying assumptions which are often common to all options.	6898

Response:

This is correct, but cost benefit analysis also evaluates the options against a base case.

	Typical submissions include:
The economic case for the North West Transport Link has been prepared using conservative assumptions. Consequently, the findings present a strong case for building the link.	6875

Response:

The RTA would agree that the assumptions were conservative.

	Typical submissions include:
No checking of cost figures is possible. The material in the tables to the economic evaluation is so devoid of useful detail that it highlights once again the utter contempt with which the Roads and Traffic Authority treats the public.	5901, 6884, 13928

Response:

The consultants have described the approach to the evaluation and the major cost and benefit assumptions in the text of the working paper on economic evaluation, and have provided spreadsheets for each alternative. The assumptions are on the basis of information supplied by other consultants.

	Typical submissions include:
The benefit cost analysis is designed to draw findings as required by the Roads and Traffic Authority.	5121

Response:

This is incorrect. The Roads and Traffic Authority did not influence the approach used by the consultants in the cost benefit analysis. The cost benefit analysis which was used has been used on a wide range of projects and is in accordance with NSW Treasury Guidelines for the appraisal of assets (1990).

	Typical submissions include:
The cost benefit analysis uses inconsistent and arbitrary growth rates.	6884, 6890

Response:

The growth rates in the 1992 EIS were prepared by agreeing employment and population figures with the Department of Planning, and by then preparing future trip tables and predicting traffic using calibrated traffic models.

	Typical submissions include:
The cost-benefit analysis does not take account of many costs, although it is suggested these costs are included in the analysis.	5121, 6884

Response:

Cost and benefits which were quantified are clearly distinguished from those which were not quantified in Table 2 of the working paper on economic evaluation (page 12).

	Typical submissions include:
The works program has an expected effective life of 23 years after which no further benefits accrue.	5121

Response:

Nowhere in the economic evaluation is it stated that the works program has an effective life of 23 years. The NSW Treasury Guidelines suggest that benefits and costs be estimated for 20 years after construction. For road projects, this is extended to 30 years because of their longer life cycle. The benefits were estimated to remain constant after 23 years. The residual value of the project in the final year accounts for future benefits.

	Typical submissions include:
The maintenance costs remain constant throughout the life of the project, which must be addressed.	5121

Response:

Maintenance costs may vary over the life of the project but the assumption of constant maintenance is not considered to materially affect the results of the cost-benefit analysis.

	Typical submissions include:
The benefits to users continue to rise over time, whereas, in fact and queuing theory, these benefits would be high at the start, rise to the half-life and then fall to a base zero at the end of the useful 23 year horizon as a result of usage and population increase.	5121

Response:

Traffic projections are based on Department of Planning forecasts of employment and population growth. In the sensitivity analysis set out in Tables 9-16 in the Economic Evaluation working paper (Exhibit 37), when these forecasts are increased, the benefits rise. The benefits at the 23 year period are very high and not zero as the benefits are relative to the base case. Without improvements the traffic congestion would be far worse after 23 years.

	Typical submissions include:
The benefits cease accruing after 23 years from when they remain constant, rather than fall. This implies an effective life of 23 years for the project, not 33 years as used throughout the analysis.	5121

Response:

Benefits were estimated to remain constant after 23 years because there were no estimates of employment and population growth after 2016. Experience on other roads in Sydney (M4) has been that these benefits would continue to grow after 23 years. The use of 23 years as a ceiling will produce a conservative estimate.

	Typical submissions include:
There is no account taken of the future value of the costs. Those omitted costs include factors they suggest have been taken into account, such as alternative land use, employment potential and transfer, pollution, increases in fuel costs, increased property values and associated transfer costs, noise increase over time and maintenance of noise abatement and landscaping maintenance.	5121, 6154

Response:

These submissions are incorrect in their assumptions. Each of the costs have been taken into account as follows:

- Alternative land use has been taken into account in population and employment forecasts.
- Employment potential and transfer has been taken into account in the employment and population forecasts.
- Pollution has been taken into account as discussed under noise, air quality, and erosion and sedimentation in the environmental evaluation.
- Fuel costs were assessed in constant dollars in accordance with NSW Treasury Guidelines. There was no reason to believe that there would be a real increase in fuel costs in the study period. If there were a real increase, fuel costs savings would increase as result of North West Transport Link.

- Property values and associated transfer costs were valued in 1991 dollars in accordance with NSW Treasury Guidelines. The changes in the results of the cost-benefit analysis due to changes in real property prices were not considered to be significant.
- The noise assessment was based on traffic values in the year 2006.
- Landscaping maintenance was included in maintenance costs.

	Typical submissions include:
In each instance, the option has been given a residual value, although the benefits have ceased to perform some 10 years earlier. The assumption that a roadway will be an asset in the future is totally spurious, as evidenced by the tramways in Sydney being considered a future asset at inception time, the current recreational value of the Hawkesbury River (now a health hazard) and the Sydney Woolstore.	5121

Response:

The benefits did not cease between 2016 and 2025. They were held constant as a conservative estimate because it is always difficult to estimate benefits accurately so far into the future. Indications on other similar roads in metropolitan Sydney (eg M4) are that benefits will continue to grow. Experience with roads over the last 100 years is that they do have value 30 years after construction. Examples of roads which have had value for well over 50 years are the Pacific Highway, Princes Highway and the Great Western Highway.

	Typical submissions include:
Whilst various net pay-back periods (the time taken for the project to return a benefit) vary according to the option, the preferred option has a pay-back period of 18 years against a suggested life of 23 years. This is the best alternative offered, and has an effective benefit life of five years on the figures as shown in the economic evaluation.	5121

Response:

The submission is not agreed to. Benefits occur from the opening of the road and continue for the life of the road. The working paper on economic evaluation does not suggest that the economic life of the project is 23 years. It is suggested that the economic life will be greater than 30 years because it is assumed that there will be a residual value 30 years after construction.

	Typical submissions include:
In re-working the numbers of the cost-benefit analysis (using the same model, but changed cost and benefit growth rates as justified above) as provided in the economic evaluation, a set of results which give net present values and benefit cost ratios slightly different to those provided in the economic evaluation.	5121

Response:

The consultants recognise that many estimates of benefits and costs due to changes may be varied. However, the consultants generally adopted middle-of-the road estimates and in their view the results are quite robust, ie., they are not sensitive to reasonable changes in assumptions.

	Typical submissions include:
The analysis lacks dollar values in such areas as: . Public transport upgrade costs . Future land opportunity costs . Relocation and disturbance costs . Landscaping and noise barrier maintenance costs . Toll maintenance cost increases . Increases in energy costs . Pollution costs	5121, 6170, 6884, 6890, 13928

Response:

When applicable, all these costs were estimated and included in the project cost. The costs quantified were outlined in the economic analysis, as set out in Table 10.14 of the Eastern EIS, and indexed to reflect growth.

	Typical submissions include:
It has been fallaciously proposed that an expense of public funds in the range of $500 to $750 million will return a net positive benefit to society, particularly with a toll.	5121

Response:

The spreadsheets show the composition of estimated benefits which are the basis for the conclusion the total benefits exceed total costs.

7.4 Busway Costs

	Typical submissions include
All costs associated with the operation of the busway have not been included.	6884

Response:

All identifiable costs associated with the operation of the busway have been included and the estimates produced by SMEC and Maunsell.

7.5 Costs

	Typical submissions include:
The economic evaluation fails to quantify the inherent values of urban bushland, community health and local road degradation.	6884, 6890, 7927

Response:

The working paper on economic evaluation quantifies the effects on urban bushland (Section 6.2.1 under open space requirements). It also places a value on noise effects (Section 6.4.2, page 28) and discusses air quality effects (Section 6.4.3, page 29). As regards local road degradation, there is likely to be an improvement to local roads as motor vehicles and particularly trucks are diverted to the proposed expressway.

	Typical submissions include:
Sufficient data has not been provided regarding the costs of: . Impacts on flora and fauna . Erosion and sedimentation . Compensation arrangements . Noise.	6884, 6890, 6892, 7927, 8097

Response:

Flora and fauna are partly included under open space requirements in Section 6.2.1 (page 17) of the working paper. As discussed in the economic evaluation, the costs of measures to prevent erosion and sedimentation are included in the construction costs (page 14). Concerning compensation, the working paper includes the estimated notional amounts generally required to compensate households and businesses for involuntary loss of property due to the project. Actual compensation is a separate policy matter. Where households and businesses have been fully aware of road plans, the purchase prices have been discounted to allow for this. The cost of noise control, including noise barriers has been included in the estimate.

	Typical submissions include:
The EIS does not include costs for: . Traffic calming. . Parking at bus stations. . Proper termination at Old Windsor Road.	6884, 6890

Response:

Termination at Old Windsor Road was assessed as part of the project and is included in the proposed expressway. It is not proposed to construct parking at bus stations. The strategic option of traffic calming is not proposed. The strategic response of traffic calming on Epping Road was considered and rejected in the early evaluation of alternative concept designs.

	Typical submissions include:
Costs for sales tax and fuel taxes should be included in the calculations because they will be recovered through the toll.	6884, 6890

Response:

Sales tax and fuel tax generally represent transfer payments rather than resource usage and must therefore be excluded from economic evaluation.

	Typical submissions include:
The omission of the toll in assessing the cost to road users is a major flaw in the economic evaluation.	6884

Response:

Toll revenue and toll payments are transfer payments. They tend to reflect traffic benefits but should not be counted in addition to traffic benefits as this would involve double counting. If toll revenues were to be counted as a cost to road users they should be counted as an (offsetting) benefit to road suppliers. The net effect is zero.

	Typical submissions include:
The EIS does not state whether the effects of noise and air pollution during the construction process have been included.	6884

Response:

As discussed in Section 6.2.2 (page 18) of the working paper, under construction costs in the economic evaluation, no attempt was made to quantify the environmental impacts of the construction process itself. The inclusion of these costs is unlikely to materially affect the results of the cost-benefit analysis.

	Typical submissions include:
Hidden costs that have not been accounted for include: • health costs as a result of air and noise pollution and destruction of the natural environment; • increased costs to local rate-payers and NSW tax-payers due to people using local roads to avoid the tollway; • loss of local social networks resulting in a reduction in the availability of social and economic exchange; • damage to local economic development; • increased travel costs for local journeys; • increased accident costs; • decrease in quality of life for local residents.	7927, 8096

Response:

- Noise effects are quantified and discussed in Section 6.4.2 (page 29) of the working paper on economic evaluation.
- Air quality effects are discussed in Section 6.4.3 (page 30) of the working paper on economic evaluation.
- The effect on urban bushland (natural environment) is quantified and discussed in Section 6.2.1 (page 17) under open space requirements in the working paper on economic evaluation.
- Traffic avoiding the tollway would also have the option of continuing to use existing main roads. The traffic assessment found that traffic would generally be diverted from local roads to the tollway.
- Loss of local social networks was not quantified but is discussed in Part E in EIS (West) and in Section 10.5.4 in EIS (East).
- Damage to local economic development is included in the working paper on economic evaluation under property acquisition and discussed in Section 18.2 in North West Transport Link EIS (west) and Section 10.5.4 in the EIS (east).
- The traffic assessment found that there would be travel cost savings (travel time and vehicle operating costs) in the total network as a result of the proposed expressway.
- The traffic assessment found that there would be accident cost savings as a result of the proposed expressway.

- The decrease in the quality of life for local residents is included in the section of the working paper on property acquisition, household disturbance and noise effects.

	Typical submissions include:
There is no evidence that costs including land acquisition, special acquisition, construction, noise barriers and upkeep have been accurately assessed by the Roads and Traffic Authority.	6892, 8096

Response:

Land acquisition costs were based on advice from a valuer for commercial and industrial properties. For residential properties, land acquisition costs were based on advice from real estate agents and recent sales results. Estimates of costs of construction, noise barriers and upkeep were undertaken by the Snowy Mountains Engineering Corporation and Maunsell who are reputable engineering companies with extensive experience in these areas. The latest techniques were used to estimate these costs. A sensitivity analysis was also undertaken on construction costs and this did not materially affect the results of the economic evaluation.

	Typical submissions include:
Road users are not currently paying for the transport. They are subsidised at the rate of about 10 cents per kilometre.	6898

Response:

According to Luck and Martin (Review of Road Cost Recovery, Bureau of Transport and Communications Economic 1988), there is considerable over-recovery of road costs attributable to private motorists who make up most of the forecast trips on the proposed expressway. But again the key point is that the economic analysis attempts to take into account all identifiable costs, whether borne by the motorist or others.

7.6 Discount Rate

	Typical submissions include:
Why the central case 7% per annum discount rate is adopted is nowhere explained in the economic evaluation.	5091

Response:

Seven per cent is the discount rate recommended in the NSW Treasury Guidelines (1990) and Roads and Traffic Authority Economic Analysis Manual (1990).

7.7 Economic Evaluation

	Typical submissions include:
Social - The destruction of beautiful areas cannot be justified and the cost of social upheaval or health cannot be measured in economic terms.	399, 2419, 2882, 2898, 3035, 3259, 3547, 3973, 5155, 5749, 5950, 6066, 6188, 6038

Response:

The cost of social upheaval is partly included in the economic evaluation in the 1992 EIS under property acquisition and household disturbance and in the consideration of noise effects in the 1992 EIS. Health effects are discussed under air quality effects in the EIS, and in sections 8.5 and 8.47 below.

	Typical submissions include:
The economic analysis is flawed as it assumes growth will continue in the east.	7504

Response:

The analysis is based on the Department of Planning's population and employment projections and the resulting forecast of travel demand. There are no other alternative forecasts that are an acceptable base for calculating travel. The use of this data indicates the project has a satisfactory benefit cost ratio.

	Typical submissions include:
The Western Toll - The benefit-cost ratios don't consider a western tollbooth but if one were built the ratio could be further reduced from 1.4.	6485

Response:

The Addendum to the Western EIS found that a western toll booth would have an insignificant impact on traffic. The total cost of constructing the toll booths would be $5.54 million or about 1.5% of the total cost of the project. This would not materially affect the results of the cost-benefit analysis.

7.8 Economic Impact

	Typical submissions include:
Property Affect - The local community is funding the link through reduced property values rather than building a more expensive option with low community impact.	8219

Response:

The net impact on local suburb values from the combined effect of improved access, less traffic in streets, plus noise and land use change are difficult to predict. Suburb values may well rise. Attempts were made in the development of the proposal to minimise community impact. A more expensive option which would have a lower community impact would be a tunnel. However, this would increase the cost substantially without a commensurate increase in benefits.

7.9 Financing Costs

	Typical submissions include:
As the proportion of state versus private funding for the North West Transport Link is unknown, the economic viability cannot be established.	6884, 6890

Response:

The distinction between state and private funding is not relevant. All projects are financed ultimately by loans from, or taxes on, the public and non-government sector. The discount

procedure reflects the opportunity cost of capital from whatever source. All projects are eventually financed by the public in one way or another.

7.10 Fuel Costs

	Typical submissions include:
The EIS claims a 2.6% reduction in fuel costs. How was this arrived at and who will be affected by this reduction? It does not take into account the vast numbers of extended journeys local people will have to make to get their children to school and to shops. How can the EIS claim to reduce fuel when the link will vastly increase the volume of local traffic and traffic using the link?	8096, 6905

Response:

Fuel savings were calculated in the traffic modelling based on total travel time and distance savings in the whole Sydney region network allowing for re-routing of trips, for a given origin-destination trip network.

7.11 Funding

	Typical submissions include:
Funding must be sought from the public sector.	5931, 14152

Response:

As indicated in the EIS it is proposed to seek private funding for construction of the proposed expressway as a tollway. Some Government funding is still likely to be required to meet total costs.

	Typical submissions include:
Concern that an increase in fuel price would occur to pay for the link and this could flow on to every major road project.	5160

Response:

The funding of road projects from Government revenue is a decision of the Parliament. It is unlikely that petrol prices would be increased to meet the cost of a specific work as this would

require a major policy change for the Government. The proposal that private funding be sought to reduce the burden on the Government and to allow earlier construction of the work is set out in the EIS. The recommendation to proceed with the proposed expressway is based on the assessment that the benefits are greater than the costs and that adverse impacts can be mitigated.

	Typical submissions include:
Funding by tolling should be a last resort.	6932

Response:

Without funding from tolls, the proposed expressway could not be constructed from present road allocations for a number of years. Tolling will allow the early finishing of the proposed expressway.

	Typical submissions include:
Funding of the project from private companies or from Government sources is unlikely in the present economic climate. Concern was also expressed regarding meeting cost increases.	1689, 2741, 6114, 7339, 7358, 7585

Response:

In Section 10.8.5 of the Eastern EIS a detailed explanation of the funding arrangements (including private funding) is set out. Offers to finance, design, construct and operate the proposed expressway will be invited, and it is anticipated that a contribution by Government will be required.

	Typical submissions include:
The proposal is a bid to drive through a major arterial tollway which pays for itself and is subsidised by local residents through the loss of land value.	8221

Response:

Overall, the proposed expressway could increase land values in Epping and adjacent areas.

	Typical submissions include:
Upgrading of existing main roads will be cheaper in the long run, have less impact on local communities and be much more environmentally friendly.	399

Response:

Upgrading would have severe impacts on local communities such as Carlingford Road. The 1992 proposal has higher evaluations in all criteria.

	Typical submissions include:
Productivity losses of the country as a whole by people spending time in traffic jams have not been taken into account.	3889

Response:

The economic analysis does take into account travel time savings over the region as a whole. Productivity losses are taken into account in estimated values of working time lost in travel.

	Typical submissions include:
Disagree that the price of fuel be increased to pay for the expressway as this would result in a general increase in the CPI.	5160

Response:

It is not proposed that the expressway be funded by increasing the price of fuel.

	Typical submissions include:
The EIS does not include financial analysis of the private enterprise funding required to complete the project.	6884

Response:

The EIS contains an assessment of social, economic and environmental impacts. The economic analysis in the working paper deals with the expected benefits and costs of the various options.

Financial analysis is not usually required in an EIS and was not a requirement of the Director of Planning. Information is given in the EIS on funding (see Section 11.4 in the Western EIS).

	Typical submissions include:
Will cyclists have to pay the toll?	6908

Response:

Motor-cyclists would pay but other cyclists would not pay to use the road.

	Typical submissions include:
Funding the proposed expressway as a tollway negates economic benefits and is inequitable.	6894, 6932

Response:

The funding of this work through private funding and tolling will allow earlier construction and allow the earlier flow of benefits to the community. Alternative routes will be available for those who elect not to use the proposed expressway.

7.12 Impact on Local Traffic and Severance Impacts

	Typical submissions include:
There will be thousands of local economic losers as a result of the link. Access to local businesses will be impeded. Through traffic getting to the major access points will congest local traffic and local journeys undertaken in the cause of business will become longer in many cases.	8096

Response:

There is no evidence to suppose that local traffic will be disadvantaged. Reducing through traffic will improve local traffic conditions.

7.13 Interchanges

	Typical submissions include:
Better interchanges are required.	2893

Response:

The arterial upgrade option evaluated the cost and benefits of upgrading intersections to meet the transport demands. The alternative of constructing the proposed expressway has a higher benefit cost ratio. The interchanges are designed to meet the predicted demand.

7.14 Interest Payments

	Typical submissions include:
Whether the finance is private or public or a mixture of both, it will be financed through debt. Debt attracts interest which is a further cost on the project and is potentially very large. This is a major component of cost which has been ignored by the North West Transport Link EIS.	6892

Response:

In benefit-cost analysis, benefits and costs (or expenditures) are attributed to the time when they are incurred. To allow for differences in timing, all benefits and costs are discounted to present values. This allows for the real opportunity costs of capital expenditures (the stream of other benefits foregone as a result of the project). Actual interest payments are transfer payments; they do not represent resource costs.

7.15 Justification

	Typical submissions include:
EIS information is insufficient to show either economic or financial justification for any proposal.	5580

Response:

The 1992 EIS is a comprehensive presentation of the economic, social and environmental impacts of the proposed expressway.

7.16 Land (Infrastructure)

	Typical submissions include:
The total loss of residential land is 219 lots. The infrastructure cost is about $100,000 per lot, giving an increase in cost, attributable to the North West Transport Link, of $21.9 million.	6892, 13928

Response:

As discussed previously, the correct method to value the economic cost of land should be the amount households would be willing to pay for the land assuming no road is built. This is the value which has been adopted in the economic evaluation. The infrastructure cost of land is included in its market value.

7.17 Noise Costs

	Typical submissions include:
The North West Transport Link EIS (p. 113) claims to have included a value for the drop in house and land prices due to noise. The reduction and the residential areas so affected are not disclosed in the North West Transport Link EIS.	6892, 13928

Response:

This issue is discussed in detail in Section 6.4.2 (page 29 and 30) of the working paper on economic evaluation. A depreciation rate of 0.9% reduction in property value per unit (decibel) change in noise levels was adopted. This is a significantly higher rate of depreciation than has been found in many OECD studies, where the average is about 0.5% per decibel unit. The residential areas affected by noise are identified in Chapter 19 of the EIS (West) and in Section 10.5.1 of the EIS (East).

	Typical submissions include:
Given that the North West Transport Link EIS's noise assessment significantly understates the noise impact and the criteria for noise acceptability are in dispute, then it can be expected that the value of the noise cost has probably been underestimated.	6892, 8097

Response:

The RTA contends that the EIS does not understate the noise impact. The method for quantifying the noise effect is discussed in the economic evaluation (Section 6.4.2 page 29). Inputs were provided by specialist consultants on noise (Wilkinson Murray Griffiths 1991, Challis and Associates 1992).

7.18 Operating and Maintenance Costs

	Typical submissions include:
It is not clear that the North West Transport Link operations and maintenance are included in the economic analysis (Table 13). From Table 21, for the tollway, this amounts to $1,048,000 per annum in 1991 dollars or $24,104,000 over the evaluation period (1993-2016).	6892

Response:

Operations and maintenance costs are included under changes in operating expenditures (road maintenance, tunnel maintenance, and toll administration) in the spreadsheets in the working paper. Maintenance costs are included in Table 2 in economic evaluation. Road maintenance costs are discussed in the working paper Section 6.2.3 on page 18.

7.19 Property

	Typical submissions include:
The property acquisition cost does not include properties eligible for special acquisition.	6884, 6890, 6892

Response:

The Special Acquisition process involves the RTA buying and selling the eligible properties where requested. The net difference between purchase and sale price would be immaterial.

	Typical submissions include:
The property acquisition cost does not allow for disturbance and solatium.	6890

Response:

To allow for disturbance costs, 15% was added to the value of residential property.

	Typical submissions include:
The cost of property acquisition has decreased since the preparation of the economic evaluation resulting in a slight improvement in the benefit cost ratio.	6875

Response:

This is possibly correct, but real property prices could increase again in the future.

	Typical submissions include:
The enormous difficulties in house price evaluation as an estimate of environment loss are glossed over in the report. Even those mentioned in the report (page 21) are not fully explored.	5901

Response:

Difficulties with the property price approach are discussed on page 27-29 of the working paper (Exhibit 37). However, there are difficulties with most techniques of evaluating environment loss including survey techniques. The specialist consultants' view was that the property price approach was the most appropriate technique for the assessment of noise costs and loss of open space.

7.20 Public Transport

	Typical submissions include:
The political expectation of increasing mobility should not be part of an objective economic analysis. Restraints on road mobility are likely to be more acceptable politically and effective economically if a rail alternative is provided.	6898

Response:

Increasing mobility, or often simple avoidance of congestion, are the clear desires of many individuals within the community. Travel time cost savings, vehicle operating cost savings and accident cost savings are real savings and should be part of an objective economic analysis. The rail alternative was evaluated in the EIS's (Part B in EIS (west) and Part C in EIS (east).

	Typical submissions include:
The North West Transport Link greatly increases the area subject to degradation and would have considerable social consequences as would the extravagant proposal for building Carlingford Road. Introduction of effective mass transit must reduce and remove the need or excuse for massive radical road construction to the central business district where employment is predicted to decline. Even qualitative assessment can scarcely avoid concluding that public transport expenditure of this type must have a cost benefit exceeding a luxury roads only situation.	6912

Response:

The assessment of public transport alternatives undertaken in the EIS (Part B in EIS (west) and Part C in EIS (East) concludes that public transport alone would not address the needs of commuters who do not wish to use public transport or whose destinations are not served adequately by public transport.

	Typical submissions include:
The economic evaluation of the various options is based on one set of population and employment forecasts. In all alternatives, the modal split remains the same. Both of these assumptions do not take into account the potential benefits of public transport. Clearly, therefore, the economic evaluation may be utilised to choose between car-based options. However, it should not be used to substantiate the car options over the public transport options.	6907

Response:

The economic evaluation in the working paper was not used to substantiate car options over public transport options. Public transport alternatives were separately considered and eliminated as part of the EIS process (see Part B in EIS (West) and Part C in EIS (East)). In the EIS the modal split, and population and employment forecasts were varied.

	Typical submissions include:
All possibilities for alternative transport links for the North West Sector have not been analysed in the EIS and, in particular, a cost-benefit analysis of an integrated rail/bus or light rail/bus (networked public transport) system.	5901

Response:

Public transport alternatives, including heavy rail, light rail, busway and buses were considered in the EIS (in Part B in EIS (West) and Part C in EIS (East)). The heavy rail and light rail alternatives were eliminated on strategic traffic and transportation grounds. No economic evaluation was therefore undertaken of those alternatives, but traffic information and preliminary cost data indicated that those alternatives would not be economically viable. For these reasons, those alternatives were not short listed for further investigation and a detailed economic evaluation was not undertaken of those alternatives.

	Typical submissions include:
Expenditure of public funds in capital works projects of this magnitude on a rail or light rail network could: • show a positive net present value; • not require land acquisition of the same order; • provide a transport link for all Sydney; • reduce travel times in the peak hour (17% of the travel time and 80% of the problem); • be pollution minimising; • negate the need for accident saving inclusions; • serve Sydney well beyond the supposed 20 year horizon of effective operation; • create employment in local areas, and allow scope for that development.	5121

Response:

A rail or light rail would produce some of the benefit outlined, but neither solution met the strategic needs of the region, so a detailed set of analysis for each was not pursued. Traffic information and preliminary cost data suggest that expenditure of public funds on capital works projects of this magnitude on a rail or light rail network would not be economically viable. Less land would be required for a rail or light rail project. The proposal incorporates a busway, which together with the additional road space, would provide a transport link which would have more users than a light rail or heavy rail link. The proposal would reduce travel times in the peak hour. Rail links (heavy or light) are less polluting than road links but the overall effect would depend on the traffic remaining on the road network. If a rail system were built without improvements to the road network, it is unlikely that there would be an improvement in the number and severity of accidents. The proposed road and busway would serve Sydney well beyond 20 years. Employment creation as a result of public transport expenditure is unlikely to be greater than employment created as a result of expenditure on the proposed road and busway.

7.21 Social

	Typical submissions include:
External costs of road transport (land take, accidents, noise, services for those without transport) are subsidised by the community.	6908. 8096

Response:

External costs of all transport are subsidised by the community. The proposed tollway will save accidents and improve public transport.

	Typical submissions include:
The evaluation of the costs of social impacts does not indicate a sound analysis. Survey techniques as suggested by others were rejected.	5901

Response:

The 1992 EIS economic analyses were carried out by responsible and professional consultants. Not all social costs can be quantified, and surveys do not necessarily address the cost of social impact.

7.22 Tollway

	Typical submissions include:
EIS did not provide data or financial information on the viability of tollways or the likely toll.	5605, 6139, 6884

Response:

On page 109 of the EIS (East) and on page 183 of the EIS (West), a detailed report of the position regarding funding was indicated. Contribution by the Government in addition to any private funding revenue is anticipated to meet total costs.

	Typical submissions include:
Support for the concept of a tollway to speed construction but concerned that traffic on the east and the western section both pay the toll. Also concern regarding the burden of toll on specific groups.	750, 5661, 6009, 6061, 7183

Response:

It would be more equitable for users of both the eastern and western section of the transport link to pay the toll. It is therefore proposed to toll both sections. It is likely that a single toll would be charged for use of all of the tollway.

	Typical submissions include:
The inclusion of a toll in both directions would only serve to substantially lower any benefit accruing to that option.	5121

Response:

This question, and other questions relating to tolling, was addressed in the Addendum to the Western EIS. The preferred option is that the proposed expressway would be tolled in both directions. Specific toll arrangements would be dependent on private sector involvement but tollgates are planned on the western ramps to Pennant Hills Road and at Marsfield. To toll only one way would increase the necessary toll to unacceptable levels.

7.23 Travel Time Savings

	Typical submissions include:
With the present unemployment level of over 10% which is likely to remain at those high levels, Hensher's 1987 survey data is far out of date. Commuters who have a job today would place a significantly lower figure on travel time savings and thus the benefits are overstated in the North West Transport Link EIS.	6884

Response:

The evaluation discounted some of Hensher's (1987) findings on travel time savings to allow for other international results. Possibly, a slightly greater proportion of trips would be non-work trips than was forecast. However the value of unit time savings for workers has not fallen - and indeed will probably rise in due course although this is not allowed for in the evaluation

	Typical submissions include:
A 5% decrease in travel time for the peak period in the year 2006, as claimed in the EIS, is equivalent to 3 minutes per hour. Is this sufficient to justify the destruction that is to be wrought by the link?	8096

Response:

People value small travel time savings proportionately as much as large travel time savings. There is no evidence that the value of time saved rises non-linearly with time. Doubtless, some small time savings are unimportant, but others may be just what is required to enable someone to perform a whole new activity. The quest for even small time savings is demonstrated by driver behaviour in seeking short-cuts. Devaluing small time savings would create a bias toward large schemes and away from staged programs.

	Typical submissions include:
The EIS incorrectly assumes that a measure of mechanised transport mobility can be used to determine the economic efficiency of exchange of people, goods and services.	6898, 6905

Response:

Most people do not travel for the sake of travelling. They travel to participate in economic, social and recreational activities. Reduced travel time costs, vehicle operating costs and accident costs will all contribute to greater efficiency in undertaking these activities.

	Typical submissions include:
Travel time update methods used by the Roads and Traffic Authority and cited in the report are not disclosed. The reference list provided with the economic evaluation report is incomplete, showing the unsatisfactory professional standards adopted in this report.	5901

Response:

The values of travel time are discussed in some detail and several references are given in Section 6.3.3 of the working paper (Exhibit 37). Other references are to the other specialist consultant reports which were prepared for the EIS.

7.24 Value of Bushland

	Typical submissions include:
Loss and degradation of bushland, green areas and amenities have been underestimated and not valued correctly for cost benefit analysis. Value of trees calculated to be $60m approximately. The economic value of the forest to be destroyed by the North West Transport Link development has been omitted. The North West Transport Link will resume 39 hectares of forest with some 62,000 trees valued at $33,100,000.	1931, 2387, 2639, 2758, 2764, 2773, 2779, 3247, 3253, 4776, 4828, 4892, 4905, 5090, 5127, 5134, 5141, 5155, 5219, 5242, 5286, 5319, 5320, 5930, 5931, 6038, 6079, 6118, 6898 7276, 7277, 7293, 7296, 7447, 7513, 7585, 7590, 7777, 7960

Response:

Open spaces were valued at adjacent residential values. There is no evidence that the timber or ecological value of the local forests would be higher than this.

	Typical submissions include:
The permanent change in land use from renewable resource generation to roadway means that this value could never be realised by the Forestry Commission or the community. It is therefore a loss.	6892

Response:

It is acknowledged that the change from forest to road is a loss and this is accounted for in the land value calculations.

	Typical submissions include:
The EIS ignores the significance of the value of trees as water, fertiliser, a gene pool and for air purification.	8096

Response:

It is correct that trees were not valued for these attributes. However, urban bushland was valued at the cost of undeveloped residential land. This was considered a reasonable and substantial inclusion.

	Typical submissions include:
What cost analyses were made for a tunnel under Devlins Creek?	2286

Response:

A tunnel under Devlins Creek did not emerge as a strategic option from the 1992 EIS process. The construction of the tunnel under Devlins Creek would cost in the order of $50 - $80 million per kilometre and could not be justified.

	Typical submissions include:
Contractual basis for the proposal and financial exposure must be able to reassure the public.	4750

Response:

Contract documents detailing the project and its operation will be available for public inspection. Matters dealing with financial arrangements may be confidential but, when that is the case, independent financial scrutiny will be engaged.

8. ENVIRONMENTAL

AIR QUALITY

8.1 Accuracy of Pollution Modelling

	Typical submissions include:
Concerned that the modelling of air pollution dispersion is inaccurate and that the calculations are deficient and the conclusions misleading, both being based on generalities and poor assumptions.	4668, 5122, 6883, 6884, 7078, 7701, 7788, 8099, 8217

Response:

The pollution dispersion modelling carried out for the assessment reflects the state of the art and is considered the best available in Australia. With any dispersion modelling, it is to be expected that predictions for a specific time at a specific place will have some level of inaccuracy when compared to actual measured values. The predictions, in a statistical sense however, provide reliable results for estimating the likely level of impact from the emissions.

8.2 Changes in Air Temperatures

	Typical submissions include:
The proposed removal of an area of bushland will result in changes in air temperatures.	4354, 6884

Response:

The effect of urbanisation on climate, generally, is to create a localised zone of slightly elevated air temperature; this is often referred to as the heat island effect. The impact of replacing a narrow strip of bushland with a roadway, such as is proposed, would contribute marginally to the effect.

8.3 Effect of Bushland Removal on Air Quality

	Typical submissions include:
Concern that beneficial effects on air quality will be lost if trees in the bushland environment are removed.	980, 2375, 2774, 4343, 4738, 6139, 7561, 7751, 8204

Response:

The relative magnitude of the proposed bushland clearing is small compared to the total area of bushland in the surrounding area. It is not anticipated that there would be any measurable resulting change in regional air quality as a result of the anticipated tree removal.

8.4 Effect of Emissions from Diesel Powered Vehicles

	Typical submissions include:
The effect of diesel exhaust emissions has not been mentioned in the EIS.	1439, 1917

Response:

In all aspects of the environmental assessment of impacts on air quality, the EIS implicitly takes account of emissions from diesel powered vehicles as well as petrol powered vehicles.

8.5 Effects on Health and Quality of Life

	Typical submissions include:
Concerned that emissions from vehicles using the freeway will reduce quality of life and adversely affect health, particularly for sufferers of respiratory ailments, such as asthma; some health criteria, are ignored in the EIS. There is a need to assess pollutant levels at susceptible receptors nearby.	891, 1004, 1073, 1332, 1917, 1931, 1934, 2244, 2758, 2766, 2897, 3067, 3115, 3374, 3472, 3565, 3760, 3762, 3778, 4290, 4445, 4668, 4761, 4831, 4892, 5216, 5234, 5304, 5319, 5716, 5734, 6037, 6038, 6074, 6140, 6262, 6440, 6901, 6973, 7013, 7021, 7149, 7203, 7204, 7206, 7220, 7234, 7276, 7303, 7304, 7332, 7336, 7341, 7368, 7386, 7399, 7456, 7563, 7701, 7777, 7818, 7960, 7971, 8067, 8099, 8204, 8224, 10101, 11086, 14058, 14252

Response:

While links between specific ailments and specific pollutants are difficult to establish, ambient air quality criteria for health, for well known air pollutants, have been developed in Australia and overseas, and are applied in New South Wales by the EPA. All the relevant criteria used by the EPA are listed in the EIS and where appropriate and practicable they take account of short-term effects (eg sudden respiratory responses such as asthma) and/or longer term effects (eg lead accumulation). Criteria are set to ensure the vast majority of the population, including the young, the elderly and those with respiratory ailments, will not suffer adverse effects from the exposure. In relation to air impurities that might approach health criteria levels at some specific locations near the proposed expressway, carbon monoxide and nitrogen dioxide particularly need to be considered. For these pollutants, health related criteria have been developed and have been considered in the environmental assessment. The concept of impaired health resulting from excessively high levels of air pollution is, of course, well established and for this reason any potential improvement in overall air quality is welcome. Since the effect of the expressway will be to dramatically decrease idling and low-speed acceleration, significantly lower emissions per vehicle-kilometre travelled would be expected to result. Future impacts from vehicle emissions undoubtedly would be greater with upgrading and continued use of existing roads. While the effect of re-routing traffic from the existing road system to a new expressway might lead to a slight deterioration in air quality at specific locations along the expressway route, there should be a significant overall benefit for the community in terms of emission related health effects.

8.6 Effects on Industrial Operations

	Typical submissions include:
Air cleaning costs could rise for businesses requiring high air purity for manufacturing.	4304

Response:

The effect of re-routing traffic from the existing road system to a new expressway will, of course, result in air quality changes at specific locations. Where the existing level of air purity approaches the limits of acceptability for a particular industry or process, there could conceivably be an increase in costs for air cleaning at such premises near the long-established expressway corridor and conversely a theoretical reduction in other locations where air quality improves.

8.7 Emissions from Tunnel Portals

	Typical submissions include:
There is a need to address the dispersion of emissions from tunnel portals during the design stage.	14252

Response:

Modelling of dispersion of emissions from the tunnel will be required as part of the detail design. The ventilation design will be required to ensure compliance of tunnel emissions with nationally accepted air quality standards.

8.8 Epping Heights Primary School

	Typical submissions include:
Epping Heights Primary School will probably be inoperable due to close proximity and resultant air pollution.	5757

Response:

Modelling of air quality indicates compliance with air quality standards at Epping Heights School. The school will not be required to close as a result of air quality concerns.

8.9 Existing Pollution Levels

	Typical submissions include:
Existing levels of some pollutants at some sites already exceed acceptable values and may not even be worst case.	90, 416, 5264, 6884, 6892, 7154, 8099,14252

Response:

As demonstrated in the EIS, the proposed transport link will result in a substantial reduction in travel time over what would occur with the base case which would have meant congestion. Not only will the expressway reduce future congestion, but it will reduce existing congestion. Existing pollution levels reflect the existing traffic conditions across Sydney which include a high proportion of journey-time either under idling while waiting in traffic queues or under acceleration as a result of stop-start conditions. The effect of the expressway at a local level will be to decrease idling and acceleration and initially lower emissions per vehicle-kilometre travelled. The combined expressway and busway, and bus priority strategy, provides opportunity for a balanced transport system with lower emissions in the long term. However, in the long term, air pollution in Sydney has to be addressed across the whole metropolitan area and across a wide range of strategies including emission controls and travel management. The RTA is taking a number of steps in this regard. The RTA is supporting improvements in road-based public transport. The RTA is providing more space for bicycle transport, which have no emissions, to provide alternatives to car usage. The RTA is encouraging higher passenger numbers in motor vehicles by providing Transit and Bus Lanes and encouraging car pooling to reduce the number of cars using roads. The RTA and the EPA are investigating methods for testing emissions from cars to ensure that cars are emitting less pollution. The RTA is investigating the effectiveness of alternative fuels in reducing air pollution.

8.10 Expressway is More Desirable Option

	Typical submissions include:
Concerned about the continuing deterioration in air quality along the arterial route if the expressway option does not proceed, especially since air quality criteria are already exceeded and there is a greater proportion of the elderly and the young on arterial route.	432, 735, 956, 1914, 3086, 4065, 5188, 5952, 6102, 6875, 6882, 7537, 7713, 7781, 9485, 12733,12776, 12808, 12873, 12948, 12977, 14121

Response:

One of the reasons for preferring the expressway option is the opportunity to achieve an overall improvement in air quality and particularly a reduction in the number of residents exposed to the higher levels of air pollution that can occur adjacent to the existing congested areas. By contrast, the expected levels of pollution near the proposed expressway would be within limits set down by the EPA as being suitable for residential habitation.

8.11 Findings of Woodward Inquiry Ignored

	Typical submissions include:
The EIS ignores the air quality related findings of the Woodward Inquiry into the Castlereagh Freeway which concluded that information from monitoring data and predictions were questionable.	5781, 6883

Response:

In the current assessment, the processes for obtaining the monitoring information and the predictions are quite different from those previously adopted. Unlike the earlier assessment which led the Woodward Inquiry to its conclusions, the current assessment is based on specifically related field measurements and new modelling techniques.

8.12 Freeway Little Better as Option

	Typical submissions include:
Reduction of pollution with the freeway option could only be marginally better than arterial upgrade.	6804, 6884

Response:

Adopting the arterial road upgrade option would still result in traffic conditions which include a high proportion of journey-time either under idling while waiting in traffic queues or under acceleration as a result of stop-start conditions and hill climbing. The effect of the expressway will be to dramatically decrease idling and acceleration and result in significantly lower emissions per vehicle-kilometre travelled. Future impacts from vehicle emissions undoubtedly would be greater with upgrading and continued use of existing roads.

8.13 Freeway will Adversely affect Local and Global Air Pollution

	Typical submissions include:
Concerned that the freeway, generally, will cause increases in traffic, resulting in a decline in local air quality and contribute to the greenhouse effect; the EIS demonstrates that the impact on air quality will be unacceptable and monitoring is necessary - what monitoring is planned?	875, 878, 934, 963, 980, 1165, 1518, 2428, 2552, 2717, 3090, 3463, 3465, 4290, 4295, 4366, 4379, 4905, 4906, 5122, 5207, 5242, 5347, 5602, 5747, 5861, 6028, 6106, 6123, 6136, 6178, 6881, 6884, 6892, 6905, 6926, 6940, 6965, 7012, 7056, 7076, 7149, 7154, 7303, 7310, 7311, 7340, 7561, 7635, 7794, 7967, 8097, 8203, 8217, 12846

Response:

It is more likely that future local and global impacts from vehicle emissions would be greater with upgrading and continued use of existing roads rather than with the proposed expressway. The EIS has not demonstrated that unacceptable air quality would result from the expressway option; to adopt the alternative option, would not result in better overall local air quality, nor would it provide Australia with a better mechanism to achieve the necessary goals for its international commitments to reduce emissions of carbon dioxide. The dual goals of meeting realistic transport needs and reducing emissions of carbon dioxide need to be balanced. This can be enhanced by the continued development and use of more efficient vehicles, from roads with less congestion and from attractive and accessible public transport. The transport link is compatible with these factors. Proposals for on-going monitoring and auditing are contained in Section 20.42 of the Western EIS. As mentioned in paragraph 2.53 of Part 5 of this assessment report, at the meeting between RTA and EPA personnel on 17 March 1993, it was agreed that air quality monitoring and modelling efforts should be jointly focussed by the RTA and the EPA. The RTA and the EPA will be working together to this end. The EPA has confirmed this in its letter of 7 April 1993 (Appendix 26).

8.14 Impact Assessment of Other Air Pollutants

	Typical submissions include:
While the EIS addresses carbon monoxide, oxides of nitrogen and also dust during construction, there needs to be some assessment of the likely future impact of other vehicle emissions.	6875, 6883, 6884, 6890, 6892, 6905, 7368, 7701, 7867, 8099, 12798, 14252

Response:

Known data about polycyclic aromatic hydrocarbons (PAH) and asbestos from measurements at confined sites, such as tunnels, on Sydney's road network, have indicated that there is no concern regarding these vehicle emissions. Consequently, no separate assessment, in respect of the expressway option compared to the upgrading of existing roads, was considered necessary. Similarly, no separate assessment was made in respect of lead, since known data from the EPA/SPCC demonstrate the continued reduction in Sydney's lead levels following the obligatory use of unleaded petrol in all new petrol driven vehicles since 1986.

Although some other pollutants have not been measured directly, their impact on local air quality can be assessed using the available measurements of carbon monoxide and oxides of nitrogen as indicator substances. This can be achieved by assuming similar ratios between different pollutants on the expressway route as occur at the sites in the monitoring network of the metropolitan area. On this basis there would be no significant impact from the other pollutants such as fine particles/lead and sulphur compounds.

8.15 Impact from Tollgates

	Typical submissions include:
Concerned that residences close to the proposed tollgates will experience high levels of pollution because of the valley location and the exit gradient; the EIS does not adequately address these issues.	1403, 1442, 2637, 2758, 5767, 6141, 6884, 7149, 8097

Response:

During night-time stable air drainage flows, the effect of the valley location of the tollgates would be to restrict the atmospheric dispersion to within the valley. The relatively higher levels of vehicle emissions resulting from the stop-start conditions at the tollgate, and the exit gradient, would then flow down the valley away from the adjacent residences. For other conditions, when dispersion is good, the levels of resulting pollutant concentrations would not approach those that currently exist at residences located at main road intersections.

8.16 Insufficient Detail on Air Quality in the EIS

	Typical submissions include:
The EIS does not provide sufficient detail on air quality effects, particularly in relation to levels in specific localities; it plays down importance of air pollution and it does not make any reference to comparisons of pollution levels with data from cities in Europe and USA.	1449, 4357, 4668, 5698, 6138, 6456, 6485, 6895, 7021, 7154, 7788, 8098

Response:

Based on the information from the existing monitoring network in the metropolitan area, Sydney's air quality, in general terms, can be shown to be better than that for most cities of its size when compared to the more heavily industrialised cities of Europe and the USA. Although emissions from the expressway might affect some specific locations not currently affected, the resulting air quality levels would not be as high as those that occur adjacent to existing roads in the area. Air quality is a significant issue in the assessment of environmental impacts and the impact from the expressway option is considerably less than the impact from the arterial upgrade proposal.

	Typical submissions include:
The pollution contour diagrams in the supporting reports should be included in the EIS.	6892

Response:

It is not practicable to include in the EIS all the detailed information from the specialist background reports. These background reports are available to the public to peruse.

8.17 Lack of Accurate Background Air Quality Data

	Typical submissions include:
Concerned that background ambient monitoring data is both insufficient and inaccurate.	1439, 1449, 6114, 6883, 6884, 6890, 7253, 7867

Response:

The measurements made for air quality impact assessment of the proposed expressway are appropriate. Air quality measurements were taken on occasions, these occasions were chosen

because of the existence of the least sympathetic meteorological conditions at the time. Additionally, the specific sites had been chosen to represent the location most likely to experience the maximum impact in the vicinity of the proposal. By then making reference to the network data, reliable conclusions have been drawn about the "worst case" scenarios.

8.18 Local Pollution Entrapment and Lack of Dispersion in Valleys

	Typical submissions include:
The EIS has not taken account of wind patterns in valleys; inversion effects, entrapment and dispersion of pollutants have not been addressed adequately.	738, 876, 902, 1442, 1627, 2237, 2829, 2727, 3113, 3928, 4504, 5220, 5242, 5247, 5529, 5734, 6026, 6092, 6114, 6183, 6228, 6456, 6485, 6499, 6883, 6884, 6890, 6892, 6905, 6912, 7078, 7158, 7149, 7220, 7374, 7751, 7927, 7971, 8013, 8073, 8096, 8217, 14158, 14252

Response:

While it is recognised that the dispersion of emissions in valleys at night-time can be restricted in temperature inversions and down valley stable air drainage flows, it is not possible, in the hilly terrain of north-western Sydney, to have an effective transport communication system that avoids locations in valleys. The traffic patterns on the existing road network would result in a significant proportion of current emissions being located in valleys, particularly in view of the steep gradients entering and leaving the valleys. As the proposed expressway will have more gentle gradients, and will have more freely moving traffic generating significant lower-atmosphere turbulence, and hence improved dispersion, it can be concluded that the overall dispersion of vehicle emissions is likely to be better with the expressway option.

8.19 Longer Term Exposure Effects

	Typical submissions include:
The EIS in assessing effects on humans and ecosystems has used only short averaging times, thus not taking account of longer exposure times.	6875, 6883, 6884, 6892, 7701, 14252

Response:

Although levels for longer-term exposures are not directly available from the measured short-term data, the longer-term 8-hour levels can be conservatively estimated using the available measurements. This can be achieved by using both of the peak measurements (each being two

one-hour measurements), giving a total of four hours, and assuming four hours of average background level between the two peaks. Using this very conservative estimation method, it can be demonstrated that the 8-hour levels are suitable air quality indicators.

8.20 Public Transport should be Preferred

	Typical submissions include:
The EIS is misleading on the relative energy use for public transport and freeways; there should be a move towards cleaner and more efficient forms of transport, with improvements made to public transport rather than construction of freeways because road based transport is a major contributor to air pollution; the busway will do little to reduce air pollution along the route.	3259, 4531, 6139, 6378, 6926, 6940, 7253

Response:

The introduction of a busway, or a light rail facility at a later date, is a way of providing a cleaner and more efficient form of transport. Unlike a new railway built to take conventional heavy trains, a busway or light rail facility is a responsible and economically viable means of providing a public transport service for commuters from the North West to the CBD and some other employment centres. A public transport facility, either as a busway or a light railway, that can attract commuters proceeding to such centres, away from private vehicles, will result in a lesser total vehicle emission, irrespective of whether the private vehicles travel on an expressway or an upgrade of the existing road system. The alternative options for accommodating the total road traffic increase from planned urban expansion are not being pursued as alternatives for commuters currently using, or potentially able to use, the existing rail network. For cross-metropolitan transport, however, and for freight movement within the metropolitan area, road transport remains the only cost-effective means. The EIS used the information that was available at the time of the assessment. More up-to-date information which may now be available does not make any change in the overall conclusion; more efficient use of the existing rail network, while highly desirable, cannot provide for the additional freight and cross-metropolitan traffic that will result from the planned urban expansion in the North West of Sydney.

8.21 Regional Impact of Freeway

	Typical submissions include:
Concerned that there are existing known air quality constraints in the Sydney air basin, but these are ignored in the EIS which does not address the impact of vehicle emissions and urban development on the rest of the air basin, including Western Sydney.	875, 963, 1165, 1449, 1449, 1607, 2658, 2758, 3035, 3119, 3243, 3611, 3818, 3896, 4668, 4886, 5530, 5607, 6127, 6138, 6139, 6309, 6378, 6440, 6973, 7122, 7303, 7530, 7639, 7701, 8094, 8096, 8099, 14057

Response:

The regional air pollution constraints of photochemical smog (ozone) and brown haze (fine particles) have been the subject of extensive investigation (particularly by Hyde and Johnson in recent years) and the information obtained has been considered along with other input data in the planned growth of the metropolitan area. In addressing these constraints, several control strategies have already been implemented in a cost-effective priority order, including restrictions on backyard burning and emission controls on vehicles and industry for hydrocarbons and particulate matter. The EIS has not ignored the known constraints of photochemical smog and brown haze on regional development, but has addressed them to the extent necessary in the context of potential impact from the expressway option compared to the option of upgrading the existing road system. Implicit in this approach to the assessment is the knowledge that the information has already been used in the decision making process for planning urban development in the region. The additional impacts on regional air quality (from the additional traffic movements that need to be managed as a result of the planned urban expansion) have, therefore, already been considered. The results of the monitoring network in the metropolitan area, the latest phase of which is the Metropolitan Air Quality Study, are regularly evaluated, and if they demonstrate that additional pollution control strategies need to be implemented, such emission controls would be implemented if they were technically feasible and had been adopted in comparable cities overseas.

8.22 Reliance on Emission Control Technology

	Typical submissions include:
The EIS assumes application of highest standards of emission control technology to all vehicles, but that is not legally required currently and would be opposed by manufacturers; limits need to be enforced.	404, 662, 6892, 7927

Response:

The assumptions made in respect of future emission controls are considered reasonable and consistent with a fleet which is being progressively upgraded. Currently, the environmental regulatory authorities in Australia have not foreshadowed any need to further improve vehicle

emission controls. In the event that the regulatory authorities determine there is a need to impose a higher level of emission control, there is no reason to believe that opposition by vehicle manufacturers will be any more effective than before. Additional emission controls are not only technically feasible, but have been adopted in some cities overseas.

8.23 Variation C-Air Quality

	Typical submissions include:
The EIS did not specifically report on the impacts of Variation C on air quality.	6884

Response:

The modelling for air quality assumed the worst case traffic and meteorological conditions. Air quality generated under such conditions complied with relevant standards as outlined in section 20.1 of the Western EIS. The EIS did not specifically address the impact of Variation C on air quality. The difference between Variation B and Variation C is minimal from an air quality viewpoint and Variation C will comply with the air quality standards.

ECOLOGICALLY SUSTAINABLE DEVELOPMENT

8.24 Failure to Consider ESD

	Typical submissions include:
The proposal fails to incorporate ecologically sustainable development concepts as it creates pollution, destruction and use of non-renewable resources. The impacts of the proposal must be considered in terms of ESD. A moratorium should be placed on all road development and a public inquiry be held to investigate the 1991 ESD Transport Working Group's findings.	172, 950, 2882, 5156, 5556, 6378, 6472, 6474, 6905, 6906, 7310

Response:

The proposal most likely will lead to less pollution than the alternative option, but in any case the strategy of ecologically sustainable development is not defined as simply as above. The EIS was prepared having regard to the principles of Ecologically Sustainable Development. See Eastern EIS p6 (centre) and Western EIS (Section 3.1.3).

EROSION/SEDIMENTATION

8.25 General

	Typical submissions include:
Concerns regarding water pollution and sedimentation of local creeks. Strict measures must be implemented for erosion and sedimentation control.	2882, 3427, 4057, 5127, 5607, 5931, 6884, 6906, 6908, 6923, 7438, 7635, 7852, 7960, 8094, 14117

Response:

Mitigative measures set out in the EIS will be implemented with the installation of sediment basins, gross pollutant traps, trash racks, and wet detention basins. Various structures will be designed in consultation with the appropriate authorities.

	Typical submissions include:
Devlins Creek will need to be stabilised by concreting in bed and banks.	2758

Response:

The Department of Conservation and Land Management concurs in the measures proposed in the EIS to contain erosion and sedimentation including those for Devlins Creek. The measures do not include lining the bed of the creek in concrete.

	Typical submissions include:
The Department of Conservation and Land Management (CALM) should be engaged to supervise the installation of all mitigation works.	4368

Response:

CALM will be consulted and its assistance sought in all aspects of erosion and sediment control.

	Typical submissions include:
No plans for sedimentation ponds have been available for public assessment.	2758, 6923

Response:

Sedimentation pond design will form part of the detail design. Detail design will occur in consultation with the relevant authorities.

	Typical submissions include:
There is no clear plan for cleaning sediment basins and gross pollutant traps, including who is responsible.	6892

Response:

The RTA will require the contractor to prepare an environmental management plan prior to commencement of construction which includes provision for soil erosion and runoff control. Also the contractor will be responsible for cleaning structures.

	Typical submissions include:
Contractors rather than an accountable government authority would have responsibility for construction and maintaining permanent and temporary erosion and sediment control works. Sediment and erosion control must be taken seriously.	2758, 3483, 4368, 6923, 7960

Response:

The RTA will require any contractor to prepare and implement to the EPA's satisfaction an environmental management plan including water pollution control systems before construction commences.

8.26 Spills

	Typical submissions include:
EIS fails to deal adequately with problems of drainage and spills especially where viaducts and bridges are planned.	2758

Response:

These concerns have been considered in the Eastern EIS (p88) and the Western EIS (p323). The RTA will require the detailed design of the proposed expressway to incorporate the mitigation measures set out there.

LANDSCAPE TREATMENT

8.27 General

	Typical submissions include:
Trees and native shrubs should form part of the median.	7346

Response:

Landscape treatment will be undertaken as set out in the EIS and as part of the final design, and a comprehensive vegetation management plan will be required. Native plants are preferred where these are appropriate.

	Typical submissions include:
Landscape Treatment Maintenance of landscaping should be included into the scope of the proposal. It should include watering, replacement, weed control, litter control and aesthetics.	5701

Response:

A detailed landscape plan will be prepared when final design is completed. The contractor will be required to prepare a vegetation management plan to the satisfaction of the RTA with regard

to species to be planted, position, watering, replacement of dead or dying plants, weed control and other maintenance procedures. Litter will be collected from time to time in order to achieve an aesthetically pleasing roadway for road users and to lessen the impact for residents outside the road reservation.

	Typical submissions include:
Screenplantings are required at various locations	3259

Response:

Screen plantings will be part of the detailed landscape plans set out above.

NOISE

8.28 Acquisition

	Typical submissions include:
If noise barriers do not meet the criteria then the RTA should buy properties.	3758, 6021, 6047, 6134, 6545, 6892

Response:

The circumstances in which additional remedial measures will be undertaken, and acquisition considered, are set out in the RTA's Interim Traffic Noise Policy. If targets are not met, the RTA will consider a request for acquisition.

8.29 Adaptation to Traffic Noise

	Typical submissions include:
It is not true that people adapt to traffic noise. Is there technical data supporting adaption to noise?	706, 1004, 1817, 2346, 2387, 2758, 4776, 4923, 5181, 5225, 5265, 5674, 5747, 5784, 5875, 5961, 5979, 6038, 6884, 7209, 7256, 7498, 7585, 7794

Response:

Section 19.2.5 of the Western EIS deals with this issue. Tolerance to various levels of noise differs from individual to individual.

8.30 Architectural Treatment

	Typical submissions include:
Double glazing, fixed windows etc. as methods to reduce noise pollution are unreasonable.	902, 966, 2081

Response:

The EIS proposes noise barriers as the prime method of noise control. Treatment to individual buildings may be favoured by some and not by others. Where targets are not met after barriers have been erected, the RTA will consider other additional remedial measures as set out in the RTA's Interim Traffic Noise Policy. The RTA is undertaking additional remedial works of this kind on the City West Link.

	Typical submissions include:
Double glazing of windows, shutters and insulation of walls.	766, 4361, 4879, 5149, 5516, 8089, 8023

Response:

The circumstances in which double glazing and other additional remedial measures will be undertaken are set out in the RTA's Interim Traffic Noise Policy.

8.31 Barriers: General

	Typical submissions include:
Appears that wooden barriers are proposed. From the F3 experience they are practically useless. Concrete barriers are more effective. Why are noise barriers limited to 4 m on the F2 West but 5.5m on the F2 East? Noise walls and earth mounds will not make any significant difference to the noise impact. Noise barriers should be 4m high and not vary between 3m and 4m.	878, 935, 4931, 5262, 6908, 6909, 6977

Response:

Barrier types which meet the design noise requirements and architectural requirements will be selected. The final choice of barrier design (including the material from which the barriers are constructed) will be made following community consultation. There has been no decision to recommend timber barriers. The barriers are specifically designed to meet the needs of the noise problem in the area concerned, and there may be a variation in barrier heights following detailed design.

	Typical submissions include:
Noise barriers above 4 m should tilt inwards and perhaps enclose the road way.	6884, 7868

Response:

With the roadway width proposed there would at best be marginal benefit from tilting the barriers. However, the final choice of barrier design will be made following community consultation.

	Typical submissions include:
No guarantees that the height of noise barriers will be determined by residents.	3816

Response:

The final choice of barrier design (including height) will be made following community consultation, and will be based on noise modelling following detailed design.

	Typical submissions include:
Overseas, earth mounds, tall trees and clear perspex are used as noise barriers.	5170

Response:

A combination of barriers, earthworks and landscaping will be selected which meets noise, space and architectural requirements. The final choice of barrier design (including materials from which they are constructed) will be made following community consultation.

	Typical submissions include:
Proposed 3-5m high noise barriers should be higher.	449, 4923, 6058, 7635

Response:

The barrier heights shown in the EIS are adequate to comply with the RTA's Interim Traffic Noise Policy. The final choice of barrier design (including height) will be made during the detailed design stage following community consultation.

	Typical submissions include:
Noise will pass over barriers into higher areas and in some areas it will be impossible to build barriers high enough to protect houses. Noise barriers do not sufficiently screen the upper levels of houses.	657, 1032, 1442, 1817, 1954, 2428, 3869, 5749, 5767, 6884, 6890, 6908, 6977, 7203

Response:

The location and level of houses in relation to the noise barriers was included in the modelling analysis. The noise modelling assessed impacts of noise above ground level at houses and barrier heights have been designed to address this concern. The final choice of barrier design (including height) will be made during the detailed design stage following community consultation.

	Typical submissions include:
Is a sound barrier's height inclusive of landscape, mounding and associated noise wall?	2741

Response:

Yes.

	Typical submissions include:
Despite noise barriers, people will be affected by traffic noise.	750, 2354, 2898

Response:

The RTA has adopted a policy regarding the impacts of traffic noise. The policy aims to contain and reduce noise impacts in order to improve the living environment. Noise, an unwanted by-product of traffic, cannot be eliminated. The final choice of barrier design will be made following community consultation.

	Typical submissions include:
Height of barriers at specific locations?	2741

Response:

The noise barriers are designed to meet specific attenuation requirements for specific locations.

	Typical submissions include:
5.5 m noise barriers would have a high visual impact.	956, 5956

Response:

The 5.5 m high noise barriers will have a significant visual impact. Landscaping will be provided wherever possible to mitigate this effect. The height of noise barriers is indicated in Expressway Alignment plans (Fig 9.25-9.35) of the Eastern EIS and noise level plans (Fig 37.1-37.8) of the Western EIS. Final heights will be determined following detail design and community consultation.

	Typical submissions include:
No noise barrier will be capable of reducing this noise to a tolerable level.	2756, 4898

Response:

Noise modelling indicates noise can be reduced to levels consistent with the RTA Interim Traffic Noise Policy and the EPA limits. The extent and height of noise barriers is determined from this modelling.

	Typical submissions include:
To what height will noise barriers be built to achieve maximum noise reductions?	90

Response:

The height of noise barriers is indicated in Expressway Alignment plans (Fig 9.25-9.35) of the Eastern EIS and noise level plans (Fig 37.1-37.8) of the Western EIS. Final heights will be determined following detail design and community consultation.

	Typical submissions include:
If it is necessary to build extra barriers in the centre of the road as happened on the Wahroonga Freeway, how will it be achieved with the central bus lanes?	2757

Response:

There will be medians between the roadway and bus lane which could be designed to carry noise barriers if these were found to be of significant benefit.

	Typical submissions include:
Terrys Creek Bridge - No noise barriers are proposed on the bridge. There will be no protection for people living nearby especially from noise of trucks at night.	2150, 3380, 4909, 5170, 5182, 5918, 6114, 7215

Response:

The modelling of noise conducted for the EIS included locations like Terrys Creek Bridge. Barriers on the bridge were not found to be necessary.

	Typical submissions include:
Gloucester Avenue - toll booths directly across the Lane Cove River Park. River Valley will collect noise affecting many thousands of residents.	5220

Response:

The modelling of noise conducted for the EIS included modelling in relation to the proposed toll booths. This is discussed in section 6.9 of the background working paper on Noise Assessment (Exhibit 14).

	Typical submissions include:
Somerset Road Tunnel Approaches - Noise impact not determined and not stated.	5134

Response:

The modelling of noise conducted for the EIS included the tunnel approaches.

	Typical submissions include:
If the noise criteria specified in the EIS is not met, adequate noise barriers must be built.	4784, 4816, 4830, 4832, 5086, 5225, 5728, 5777, 5787, 5918, 5928, 5948, 6049, 6134, 6146, 7741

Response:

The final choice of barrier design will be made following community consultation. It is the RTA's intention to construct barriers to meet the noise criteria specified.

	Typical submissions include:
EIS indicates the maximum height for sound barriers is 5.5 m. The height of trucks will mean the barriers will have little effect.	5516, 6013, 6106, 6884

Response:

The modelling for noise took into account the height of trucks. The barrier heights were selected following this modelling.

	Typical submissions include:
People should not be forced to bargain with the RTA over their preference for noise walls.	7311

Response:

The final choice of barrier design will be made following community consultation. Noise walls, earth mounds and landscaping will be part of the detail design. Architectural, as well as noise requirements, will be considered.

	Typical submissions include:
Noise barrier height will be determined by uninformed and inexperienced folk. No assessment of the likely effectiveness of noise barriers and information should be clear, concise and objective. Deferring noise barrier heights to a consultation process is a sham.	3777, 5134, 7927

Response:

The RTA has followed this consultative process in the selection and height of noise barriers and associated landscape treatment on a number of occasions. It has proved to be successful. The final choice of barrier design will be made following community consultation. The design submitted for community comment will have been drawn up on the advice of appropriate experts.

	Typical submissions include:
Coral Tree Drive - Effects of both options will make noise pollution an awful imposition.	2244

Response:

The final design of noise barriers will occur after community consultations. The circumstances in which additional remedial measures, and acquisition, will be considered are set out in the RTA's Interim Traffic Noise Policy.

8.32 Community Consultation

	Typical submissions include:
Residents wish to be informed of effects of noise and plans for barriers.	1462, 1929, 6932, 7013, 7014

Response:

The EIS included indicative proposals regarding noise barriers. The community will be informed and consulted on the final design of noise barriers.

	Typical submissions include:
Council Noise Codes - Noise levels required in a residence to be 40 dBA (windows/doors closed) and 50 dBA (open).	1917

Response:

The noise barriers have been designed to meet the criteria in the RTA's Interim Traffic Noise Policy which is acknowledged as an appropriate response by the RTA to noise attenuation for roadworks.

8.33 F3

	Typical submissions include:
F3 Sydney-Newcastle - publicly documented that noise control for that job was a disaster and is not acceptable.	4, 856, 2712

Response:

As greater awareness of noise issues has occurred with time, more restrictive requirements on traffic noise have recently been adopted by the RTA. Freeway construction since the opening of the F3 has been based on the new policies relating to noise and on employing more effective mitigative measures. Noise barriers now erected on the F3 have reduced this noise impact to target levels. The experienced gained in such locations will result in improved noise performance in this location if the proposal is to proceed.

8.34 General

	Typical submissions include:
General criticism of RTA's treatment of noise issues.	6377, 6883, 7978

Response:

The RTA referred these submissions to its noise consultants for further detailed comment. The comments of the RTA's noise consultants are set out in Appendix 29 and Appendix 30 to this Assessment Report. The conclusions of the consultants were that, notwithstanding the submissions, the reports of the noise consultants to the RTA were technically appropriate bases on which the RTA could make acoustical decisions concerning the proposed expressway.

8.35 Inadequate Noise Attenuation through Windows

	Typical submissions include:
Studies conducted on the attenuation of an open window on road traffic noise by the University of Sydney and the CSIRO showed that only 5 dBA reduction, not 10 dBA as assumed in the RTA's night-time criterion was achievable.	6377, 7978

Response:

The RTA's noise consultants advise that a facade attenuation in the vicinity of 10dBA is an appropriate assumption for windows partly open. See Appendix 30, paragraph 3.4 to this Assessment Report.

8.36 Insects/Cicadas

	Typical submissions include:
The Australian Standard and the SPCC require noise measurements to be recorded in the absence of extraneous noise such as insects. Consultant has breached this requirement by recording over cicadas, giving a false level and leading to false predictions.	1619, 2387, 2758, 3322, 4776, 4828, 4905, 5092, 5099, 5181,5219, 5225, 5265, 5784, 5875, 5961, 5979, 7209, 7213, 7259, 7498

Response:

The noise of insects and cicadas was recorded when background noise measurements were taken. These sounds were identified and background noise levels were based on noise levels without cicada interference.

8.37 Internal/External Noise Levels

	Typical submissions include:
What will be predicted noise levels externally and internally between 12 midnight and 6am.	90

Response:

Noise levels at night will be controlled to meet the requirements set out in the RTA Interim Traffic Noise Policy.

8.38 Methodology

	Typical submissions include:
The RTA claims that its noise criteria "is about mid range by comparison with noise standards". This is disputed. Noise stated as being "normally acceptable" are above the levels stated by OECD, WHO and the NSW EPA	104, 7927, 8097

Response:

The RTA considers that its statement is correct. Of those countries listed in the submission whose criteria are apparently more stringent than the RTA's, the following should be noted:

- a number have a range of criteria including planning objectives, standards and maximum levels. The RTA's day-time Noise Level Objective is better than the absolute or maximum levels in five of these cases, and is generally a maximum level for the project.
- the WHO, OECD and Australian National Acoustic Laboratory levels are essentially similar. The OECD goals are expressed as L_{eq} (daytime) measured in front of the most exposed building. They are:
  - above 65 dBA - unacceptable;
  - 55-65 dBA - undesirable; and
  - below 55 dBA - desirable.

The RTA's Noise Level Objective of 60 dBA L_{eq} (24 hours) is approximately at the mid point of the range.

The OECD recognises that the problems of noise are perceived differently from country to country whilst the WHO recognise that technology and economic limitations make its goal impracticable, at present for many urban areas.

It should be noted that the RTA has a night-time Noise Level base objective of 55 dBA L_{eq} between 10 pm and 6 am, whereas many other countries do not.

	Typical submissions include:
Noise levels close to the proposal will exceed international standards (including WHO).	706, 891, 1322, 1817, 1917, 1945, 2365, 2387, 2712, 3322, 3381, 3777, 8430, 4892, 5219, 5304, 5319, 7056, 7699, 8096, 8208, 14063

Response:

The relationship to goals, including WHO goals, is indicated in the EIS and working papers. The noise limits adopted by the RTA are set out in the RTA's Interim Traffic Noise Policy.

	Typical submissions include:
Noise measurements were not taken in all areas and noise contour lines do not in every case take topography into account.	449, 1945, 1954, 2901, 3816, 6892, 6912

Response:

The noise measurements taken provided an adequate base for modelling the background noise along the corridor and are considered to give a good statistical assessment for the purposes of the EIS. Topographical features were included in the noise modelling for the proposed expressway.

	Typical submissions include:
Why does the RTA not come under the jurisdiction of the State Pollution Control Act, 1975.	8

Response:

The construction and operation of the proposed expressway will be required to comply with the requirements of the EPA (formerly the SPCC) under the Noise Control Act and the Clean Waters Act and other Acts administered by the EPA.

	Typical submissions include:
Existing noise environment has been falsely represented and has been assessed independently as being higher than the EIS predicts.	706, 3442, 3816, 4806, 5196, 5273, 5286, 6892, 7203, 7927

Response:

The noise reports included in the working papers provide an accurate assessment of background noise in the corridor. The reports were carried out by experienced competent professionals using the appropriate techniques and equipment.

	Typical submissions include:
Noise issues inadequately addressed in the EIS.	3135, 5204, 5273, 6892, 7927

Response:

Extensive noise studies were undertaken for both sections of the link. The RTA feels that these noise studies provide sufficient information to indicate the environmental impact of the proposal in terms of noise generated by the proposal.

	Typical submissions include:
Noise levels were measured during the busiest and noisiest time of day, 6am-12 midnight. The Australian Standard and SPCC require measurement when levels are lowest.	2346, 2369, 2387, 2758, 2787, 2898, 3243, 3253, 3322, 3541, 4806, 4905, 5092, 5181, 5219, 5265, 5875, 5961, 5979, 6038, 6892, 7256, 7447, 7782, 7927

Response:

Noise levels were monitored both in the day time and at night. The models used were based on the data obtained from the corridor. The targeted criteria comply with the RTA Interim Traffic Noise Policy which is the current expression of NSW government policy.

	Typical submissions include:
Consultant admits a proper study of road traffic noise has not been done and that there is no reason for such a study.	5181, 14057

Response:

The RTA and its consultants believe a proper study of road traffic noise has been carried out. The road traffic noise has been fully evaluated as set out in the two background reports to the EIS. The road noise was estimated in the noise models to select barrier heights which are designed to control noise in accordance with RTA's policy.

	Typical submissions include:
Noise level projections and sound attenuation are seriously flawed in statements on noise levels and inadequate projections of noise level increase.	1619, 6892

Response:

The RTA's noise consultants have reviewed comments regarding their studies and refute the allegation of inadequate projections or flawed results.

8.39 Noise Consultants

	Typical submissions include:
An assessment of noise impacts must be carried out by independent consultants.	3964

Response:

The respective consultants employed by the RTA for the Eastern EIS and the Western EIS were professional experienced noise consultants using accepted data collection and modelling techniques.

	Typical submissions include:
SPCC's Acceptable Limits - The EIS states "normally acceptable" noise levels of 43-54 dBA in an R2-R3 area which disagrees with the SPCC's acceptable limits of 40-45 dBA.	2387, 3381

Response:

This matter has been referred to the RTA's noise consultants who refute any inconsistency between their adopted criteria and the EPA's criteria.

	Typical submissions include:
Nothing in EIS which suggests that the noise issue has been seriously addressed since 1989.	5149

Response:

The EIS summarises the detailed noise assessment carried out in 1991 for this project by the two specialist noise consultants for the RTA.

This work was extensive and is considered a thorough response to the prominence that noise issues have been given by the community.

	Typical submissions include:
Poplars Hospital not included in the noise report.	5219, 5800

Response:

With the adoption of the tunnel proposal, the Poplars Hospital will not be unduly affected by traffic noise from the link as it is remote from the tunnel portal.

	Typical submissions include:
Noise zones are inaccurate.	2639, 6892

Response:

The noise zones outlined are considered to be sufficiently accurate for concept plans. The target criteria are to be met and any area of concern will be directly addressed in the detail design plans.

8.40 Pennant Hills Road

	Typical submissions include:
Noise levels on Pennant Hills Road exceed target level (Table 10.8 in the EIS).	1439

Response:

Existing noise levels at houses on Pennant Hills Road do exceed the target levels for houses in quiet areas. However, houses adjacent to the current widening project near Thompsons Corner will experience reduced noise levels with the fences being provided. This is the case on many arterial roads in Sydney.

8.41 Reflection of Noise from Cuttings

	Typical submissions include:
Embankments, as a result of cutting rock, will reflect noise.	7013

Response:

The attenuation measures have been designed to match the proposed road design including cuttings.

8.42 RTA's Noise Criteria

	Typical submissions include:
The RTA has falsely quoted the findings of an Inter Departmental Committee (IDC) in an attempt to justify the use by the RTA of a noise criterion of 63 dBA L_{10} (18 hours) "where feasible and cost-effective". The RTA's noise criterion has no basis.	6884

Response:

The above RTA "environmental goal" and qualification is included in the RTA's Road Traffic Noise guidelines (1987). The IDC and subsequently the Urban Development Committee (UDC) endorsed this level as suitable for adoption as an "environmental objective" as described below.

By way of background, the recommendations of the IDC were considered by the UDC of the then NSW Department of Environment and Planning and were included in the State Pollution Control Commission (SPCC) publication "Traffic Noise Amelioration in residential Subdivisions" dated June 1986. The following specific recommendation was made by the IDC:

- 7.1 - That the environmental objective of 63 dBA L_{10}(18 hour) be adopted as a provisional working value to be the basis for road design and construction of arterial roads, for residential area planning and the treatment of residences. The objective is to be regarded as a target to be sought, recognising that this will not always be practicable and as a interim value to further evaluation and was adopted as an interim measure by the UDC "in the absence of a national strategy to control traffic noise".

This has now been superseded by the RTA's adoption of Noise Level Objectives in its Interim Traffic Noise Policy.

8.43 Schools

	Typical submissions include:
Three primary schools will be deafened by noise. Keeping windows closed is unreasonable, particularly during blasting.	649, 1042, 2529

Response:

Noise attenuation set out in the 1992 EIS was designed to meet the specified noise criterion for schools. If it proves necessary to close windows to meet the criterion, then ventilation would be part of that treatment. Blasting next to schools is not anticipated but will certainly be rare.

	Typical submissions include:
Information was given during the walk that noise levels would not exceed 45 dBA during school hours with the window open. This is not addressed in the EIS. Winston Hills Primary, Winston Heights Primary, Baulkham Hills, Model Farms High School and Our Lady of Lourdes would be affected by noise. Who will fund fans or airconditioning? Will school children be able to learn and socialise in the playground during construction?	708, 734, 958, 1042, 2712, 3030, 3232, 3881, 3912, 4389, 4732, 6886, 6901, 6924, 7876, 7927

Response:

Noise barriers will be provided to limit noise in classrooms in accordance with the RTA's Interim Traffic Noise Policy. The final design of noise barriers will be made after community consultation. Negotiations with schools will address other measures such as double glazing,

ventilation, or classroom relocation if these are required. Where these treatments are part of the mitigation to meet noise targets, the RTA will pay. Specific consultation towards the final design of noise treatment will occur with these schools and relevant government bodies. School Liaison Groups will be formed for this purpose.

	Typical submissions include:
Commission of Inquiry recommended new classrooms be constructed at Epping Heights Public School and refurbishment of existing building to SPCC noise requirements. This is not addressed in the EIS. F2 should be fully enclosed, as 4.5m barriers will not be sufficient to minimise noise.	4873, 6904, 7341, 7635

Response:

The current analysis indicates that 6m high noise barriers will be required to meet the criterion for noise in the classrooms, and these will be provided. Alternative measures will be discussed with the School Liaison Group if these are found to be necessary.

	Typical submissions include:
Epping Heights School - 5m noise barriers would shade the school and make it cold in winter.	6904, 6927

Response:

The RTA will form a School Liaison Group to address all issues relating to the construction of the proposed expressway near the Epping Heights School. The issue of overshadowing would be considered by this Group.

8.44 Social Problems

	Typical submissions include:
Unwanted and excessive noise creates long term social problems.	1322, 3380

Response:

The effects of road traffic noise are documented in the EIS and working papers. The measures described to mitigate the noise at adjacent noise sensitive locations are fully described. The social impacts are acknowledged as being an impact which cannot be completely eliminated from new road projects. However, there are those living near existing traffic routes that will benefit from the reduction of traffic following completion of the proposed expressway and hence a reduction in noise levels.

8.45 Speed Limits

	Typical submissions include:
Would speed limits be lowered to reduce traffic noise at specific locations e.g schools?	950

Response:

There are no proposals to reduce speed limits at schools to control noise. The design of noise barriers is the primary method of noise control. The RTA is working to limit vehicle noise emission in co-operation with the EPA.

8.46 Threat to Health from Noise

	Typical submissions include:
Concern regarding threat to health from noise. EIS makes no reference to health impacts from noise. Noise levels above 45dBA at night destroy sleep patterns increase heart rate and degrade motor reaction, cause psychological, emotional and physical health problems. EIS should identify community health costs anticipated from truck noise. Noise will severely affect people in their sleep, disrupt sleep patterns, increase heartbeat rate, degrade motor reaction times, encourage use of sleeping tablets, long term health problems.	706, 891, 1322, 1619, 2639, 2758, 2766, 2945, 3164, 3472, 3775, 3999, 4081, 4045, 4081, 4290, 4828, 4892, 5127, 5149, 5181, 5204, 5225, 5265, 5234, 5285, 5286, 5304, 5319, 5607, 5747, 5749, 5927, 6021, 6038, 6226, 6909, 7012, 7056, 7209, 7220, 7253, 7256, 7259, 7368, 7399, 7563, 7927, 7978, 8097

Response:

The link between traffic noise and effects on public health is not clear. Whilst current research considers sleep disturbance by defining noise events and appropriate noise level objectives, other areas are to be investigated by the RTA as part of its actions in its Interim Traffic Noise Policy. The RTA recognises that there can be sleep disturbance from high traffic noise levels which can impair performance the next day. Accordingly it has included noise level objectives and times

for application in its Policy which are related to quality of sleep. The noise targets adopted for night time noise are set to reduce interference with sleep. Noise cannot be eliminated but can be controlled to the level where most sleep patterns are not affected. Noise barriers have been proposed so that in most cases the night time traffic noise will comply with the RTA's Noise Level Objective of 55 dBA Leq, which has been specifically established for night time truck noise as well as the "+12" dBA Noise Level Objective which takes into account changes in noise levels. These Noise Level Objectives are in addition to 'day-time' Noise Level Objectives.

It is generally recognised, that at sufficiently high levels, traffic noise can affect the sleep of nearby residents. Effects of noise include an increase in the time taken to get to sleep (sleep latency), an increase in the number of awakenings during the night, and changes in the pattern of sleep, notably in the proportion of deep sleep.

For this reason, the level of noise during the night time period (usually taken as 10 pm to 6am) is specifically addressed in the EIS and has been adopted in the Interim Traffic Noise Policy in terms of a noise level objective and a change to the ambient noise level.

The noise level objectives are based on:

- the recognition that a daytime Leq (24 hour) descriptor is not sufficient to reflect noise impacts on many traffic routes at night;
- a range of sleep quality studies indicating that 45 dBA Leq internal is a reasonable upper limit, consistent with levels at which sleep quality may deteriorate during the hours of sleep of the majority of the population ie 10pm-6am. Brown's review for the RTA (1991) indicates 35-40 or 35-45 dBA Leq is an upper limit for continuous traffic conditions;
- comparison with overseas criteria. The OECD and WHO in particular, adopt separate day-time and night-time criteria;
- the RTA noise level objective of 55 dBA Leq between 10 pm and 6 am is an innovation compared with many other State Road Authorities and countries. It becomes the predominant objective on routes used extensively by heavy vehicles at night. It is noted that Vallet (1991) proposes the emergence of peak noise levels above Leq as a determinant of sleep disturbance. He observes that few countries have made use of night-time noise descriptors as their use required knowledge of traffic parameters such as the number of heavy vehicles. It is a subject of proposed future research by the RTA;
- the general considerations which related to deriving a balanced noise level objective.

The RTA recognises, for roads or freeways built on new alignments there may be a localised substantial increase in noise at particular locations resulting from traffic using the new or improved facility. These sites have received special consideration when developing the noise level objectives (+12 dBA).

This is in conformity with the findings regarding initial community reaction to changes in noise levels, the general principle in ASS 1055 (SAA 1989) where noise level objectives are related to the noise climate before a road proposal and the recognition that in some cases, the "absolute" noise level is less important than the change in noise level as a result of the new road proposal.

8.47 Toll Plaza

	Typical submissions include:
Noise impact will mean that Carmen Drive and environs could no longer be a residential area.	8221

Response:

Noise control is designed to meet standards as set out in the RTA's Interim Traffic Noise Policy.

8.48 Truck Noise

	Typical submissions include:
Truck traffic noise, particularly at night not addressed in the EIS.	1442, 2639, 3243, 5265, 5273, 2787

Response:

Full allowance was included in the EIS and background working papers for truck noise. Truck volumes were obtained from the traffic analysis.

	Typical submissions include:
Heavy Vehicle Restrictions - Heavy vehicle use should be restricted to minimise noise impact.	140, 5264

Response:

There are no proposals to restrict heavy vehicle use of the route which has been specifically designed to cater for heavy vehicles. The noise barrier design is based on the mix of traffic predicted and this includes heavy vehicles.

	Typical submissions include:
Exhaust Brake and Exhaust Noise - Trucks slowing down will increase noise levels at Pennant Hills Road Interchange and on the clover leaf.	3556, 8077, 8099

Response:

The noise targets adopted relate to average noise levels. The levels do not adequately reflect the impact of noise of short duration such as exhaust brakes. Despite this, the goals as set are designed to mitigate noise and will mitigate the exhaust brake noise. If exhaust brakes became an issue at a specific location then additional mitigative measures will be investigated. The RTA is pursuing options to reduce exhaust brake noise in urban areas through discussions with the freight industry.

	Typical submissions include:
Concern regarding noise from the 600 or 769 trucks using the transport link between 10pm to 6am and the effect on sleep.	750, 939, 966, 2124, 2197, 2637, 3054, 3164, 3232, 3472, 3775, 3778, 3837, 3912, 4759, 5644, 5645, 5663, 6198, 7009, 7056, 7203, 7869, 8207, 8210, 8224.

Response:

The noise modelling included the trucks in the traffic stream. The resulting barrier heights are assessed to mitigate the total noise impacts as described in the EIS. This is in accordance with the RTA's Interim Traffic Noise Policy.

8.49 Standards

	Typical submissions include:
The standard of 55dBA Leq is excessive. This is an RTA policy as a result of inadequate community consultation. A standard of 50dBA would be more appropriate.	968

Response:

The RTA's Interim Traffic Noise Policy has been produced after the perusal of world standards and after wide spread discussion in the community and with other governmental authorities.

8.50 Variations A, B, C, D - Western EIS

	Typical submissions include:
Noise pollution levels are not given for Variations A, C and D. No noise contours have been supplied for Variation C. Lacking from the EIS is an estimate of the predicted L1 criteria. Impacts of noise on residents of Carmen Drive by Variation C not examined.	86, 2798, 3453, 5329, 5580, 6884, 6892, 7049, 8097

Response:

The Western EIS did not contain any analysis of Variation C in terms of noise and air quality separate from the analysis of Variation B.

Noise issues in relation to Variation C were analysed as part of the Working Paper on noise prepared for the Western EIS: See Exhibit 30 section 4.9 and Figures 73 and 74. The conclusions of this Working Paper were that Variation C will affect slightly fewer houses than Variation B and that the "changes to the total number of residences affected ... are insignificant". Also, as mentioned at paragraph 4.5 of Part 5 above, Murray was asked to comment further on noise attenuation at the Deaf and Blind Children's Centre, and his conclusions were that noise levels for the School for both Variation B and C would comply with AS2107.

Air issues in relation to Variation C were analysed as part of the Working Paper on air quality prepared for the Western EIS: See Exhibit 19 p.110. The conclusions of this Working Paper were that "the difference in air quality impact terms would be marginal" between Variation C and other options. The modelling for air quality assumed the worst case of traffic and meteorological conditions, and this was equally applicable to Variation C and other options.

VEGETATION AND FAUNA

8.51 General

	Typical submissions include:
Construction impacts - would lead to weed infestation, erosion, loss of flora communities of high conservation value, habitat fragmentation, and altered shadow and rain regimes. Loss of recreational and educational values. Devlin's Creek area will be denuded.	4905, 4354, 5155, 5930, 5931, 7310, 7328, 14058, 14139

Response:

Construction of the expressway will intrude into the bush areas and damage will occur. The EIS sets out proposed measures to restrict the area affected, to control siltation, and to revegetate the area with natural species. These measures will be adopted. Choice of the southern option at Devlin's Creek will avoid the most significant forest areas.

	Typical submissions include:
Detention ponds would take further areas of bushland.	5121, 6898

Response:

The design of detention ponds will take place as part of the detail design. The need to avoid the damage to bushland areas will be addressed at that stage.

	Typical submissions include:
Bundarra Reserve - EIS provides no information on how either major option will affect Bundarra Reserve.	6895

Response:

Figure 9.35 of the Eastern EIS indicated that the proposed expressway will affect a small portion of Bundarra Reserve. The northern corner will be affected with some trees lost. During detailed design, care will be taken to minimise impacts on the reserve.

	Typical submissions include:
Air pollution will affect vegetation.	4821, 5233, 6106, 7358

Response:

The RTA will undertake air quality monitoring as agreed with the EPA to discern long term trends in air quality, including affects on vegetation.

	Typical submissions include:
Bush Regeneration - EIS makes no mention of the bush regeneration project by the Water Board at Darling Mills Creek.	6028

Response:

The RTA is aware that the Water Board is carrying out such a bush revegetation project, and the work essentially can continue after construction of the proposed expressway.

	Typical submissions include:
Noxious weeds that inhabit many road reserves need to be controlled. Exotic species could affect native birds seriously.	3483, 6916, 7505

Response:

The RTA will require the implementation of a vegetation management plan for the expressway to ensure the viability of remaining bushland, to restrict weed invasion, and to remove litter.

	Typical submissions include:
Ecosystems are evaluated in a regional context which is an inappropriate measure of local recreational and conservation values. Social value of bushland has been ignored.	5121, 7795, 7913

Response:

The social value of bushland was included in the economic evaluation. This evaluation is described in the Economic Evaluation background working paper (Exhibit 37).

	Typical submissions include:
Dedicate residual land and a flora and fauna reserve to Council.	11927

Response:

The RTA will require the implementation of a vegetation management plan to ensure the viability of remaining bushland, to restrict weed invasion, and to remove litter. The extent to which residual land will be comprised in the vegetation management plan and, if appropriate, dedicated to Councils will be determined with preparation of the plan.

	Typical submissions include:
No assessment of the impact of the proposal on bushland to the rear of Gilda Street, particularly runoff and emergency spillage management.	14207

Response:

The EIS working paper did assess bushland to the rear of Gilda Street. The RTA will require the implementation of a vegetation management plan for the whole of the proposed expressway (including near Gilda Street). The RTA will require the implementation of an environmental management plan including water pollution control systems.

	Typical submissions include:
Freeway will destroy large sections of National Parks and State Forest.	4, 399, 734, 902, 1495, 2530, 2665, 3684, 3821, 4357, 4379, 4385, 4658, 4747, 5452, 5556, 5610, 5625, 5698, 6206, 6208, 6472, 6474, 6494, 7007, 7049, 7880, 8098, 8217, 14208

Response:

No National Park is affected by the proposed expressway. A section of Darling Mills State Forest will be affected by the proposed expressway construction. The proposed expressway will be located near the boundary of, but not encroach on, the Lane Cove River State Recreation Area in some cases.

8.52 Reserve Management Plan/Bushland Plan of Management

	Typical submissions include:
The commitment to the Plan is loosely defined and may be reneged on by the contractor and/or the government. It should be formulated prior to approval of the proposal.	3259, 5121, 6906

Response:

The requirement for a vegetation management plan will be a condition of determination. The plan will be required to be prepared in consultation with relevant authorities.

	Typical submissions include:
Funding for management plan in particular for weed control responsibilities needs to be clearly spelled out.	3259, 6916

Response:

The RTA will implement such a plan. The requirement for a vegetation management plan will be a condition of determination.

8.53 Bushland

	Typical submissions include:
SEPP No. 19 - Urban Bushland - Freeway will destroy the natural bushland of the area which is contrary to the government's conservation policy. F2 proposal conflicts with this policy.	1459, 4354, 4658, 4892, 5090, 5204, 5219, 6101, 7438, 7777, 14139

Response:

In the 1992 EIS, due regard has been given to the aims or objectives of SEPP 19. Consultations with the Department of Planning, local councils and local communities have occurred to ensure that this was the case. The 1992 EIS pursued options to reduce the taking of bushland. The vegetation management plan will assist future preservation.

	Typical submissions include:
Parkland Reserve at Beecroft and Cheltenham - Majority of bushland in Beecroft and Cheltenham through which the F2 reservation runs has been designated parkland reserve for at least 60 years.	3311

Response:

The road reservation has been set aside since the mid 1970's in local planning schemes.

	Typical submissions include:
Lane Cove River State Recreation Area - RTA cannot be allowed to desecrate the Lane Cove River Park - a recognised National Park. Proposed tollway will go through the Lane Cove River Reserve. Destruction of native vegetation and alteration to watercourses will severely compromise the integrity of the Park.	1853, 5868, 5882, 5855

Response:

The Lane Cove River State Recreation Area plays an important role as a valued recreation area for the whole of Sydney. The proposed expressway passes nearby the Park Reservation but does not encroach on the reservation. The proposed expressway will serve as a buffer between urban development and the natural area.

	Typical submissions include:
Destruction of any area of bushland to build the link is unacceptable. It is not weed infested; cannot be regenerated; non-native species as valuable as native species; removal impacts on visual quality; EIS does not consider loss as significant; fauna destroyed; Cheltenham and North Epping destroyed. Destruction must be minimised.	160 662, 727, 1165, 1206, 1607, 1684, 1931, 1934, 2081, 2221, 2346, 2387, 2436, 2639, 3008, 3030, 3054, 3247, 3253, 3463, 3474, 3479, 3912, 4032, 4290, 4305, 4331, 4376, 4718, 5127, 5134, 5141, 5201, 5219, 5242, 5516, 5530, 5645, 6026, 6042 6079, 6178, 6180, 6198, 6474, 6953, 6965, 7009, 7355, 7438, 7869, 7960, 7976, 8217

Response:

The proposed expressway has minimised the level of destruction of the bushland, as well as adopting features to reduce the suburban impact including the alignment at the eastern end and the tunnel at North Epping. The EIS considered the issue of visual quality, affects on fauna, and responses on these issues are contained in this report.

	Typical submissions include:
Removal of Bushland and Effect on Air Quality and Health - Health of inhabitants and bird habitats will be greatly affected by the loss of bushland which helps to clear the air, absorbs carbon monoxide and maintains oxygen level.	172, 2150, 2897, 3477, 4045, 4081, 4097, 5182, 6118

Response:

The EIS considers these issues. The proposed expressway has minimised the destruction of bushland, and the impact on this land, and a management plan will be established to mitigate on-going effects.

	Typical submissions include:
Lane Cove River Valley will be dramatically altered.	7286

Response:

The Lane Cove River Valley catchment (ie, Devlins Creek, Terry's Creek) will be affected by the proposed expressway and section 10.6.1 of the Eastern EIS considers this issue. The Lane Cove River Valley will not be affected by the proposed expressway.

	Typical submissions include:
Compensation for Loss of Bushland - Compensation be sought by purchase of all privately held bushland in the upper Byles Creek area north of Malton Road, Beecroft and transfer it to Hornsby Council. Compensation be paid to Hornsby Shire Council for the loss of open space/bushland within the Shire. Compensation be paid to the community for the loss of recreation land.	2882, 6016, 7122

Response:

Any land, whether private or public, required for the proposed expressway which is not held as a road reservation will be purchased in accordance with the RTA's acquisition policy.

	Typical submissions include:
Clearing of Bushland - Clearing of bushland will result in extra run-off, serious erosion and sedimentation problems, severe weed invasion and loss of rare vegetation communities of high conservation value.	4354, 4776, 4905, 5930, 6884, 6909

Response:

The RTA will require the implementation of a vegetation management plan containing measures addressing the issues set out in these submissions.

	Typical submissions include:
The RTA should hold discussions with the Forestry Commission regarding the impact on native plants.	4354, 6976, 7466

Response:

The RTA has already discussed matters pertaining to the proposed expressway with the Forestry Commission and will continue to hold discussions.

	Typical submissions include:
The best remaining tall forest in suburban Sydney will be destroyed.	4354, 6884, 6896, 6909, 6920, 6937, 14139

Response:

The tall forests are not being destroyed. The impacts on bushland are discussed in Chapter 21 of the Western EIS, and this concept is discussed there in detail. The design of the proposed expressway as presented in the EIS has been developed in order to reduce the impact on forests and to maintain as far as possible the integrity of valuable bushland areas.

	Typical submissions include:
Only reason for using the bushland is that there are no people living in it to complain.	4354, 6884, 6138

Response:

The road reservation has been in existence since the mid 1970s. The reservation affects homes as well as open space and bushland. The EIS design seeks to minimise the taking of bushland.

	Typical submissions include:
Habitat Fragmentation - If the F2 was built it would fragment habitats of native vegetation and lead to degradation of remaining parcels of bushland.	4354, 5155, 6898, 6920, 6937, 14139

Response:

Every effort has been made in the design of the proposed expressway to avoid fragmentation of habitat.

	Typical submissions include:
Replanting Large Trees - Can large trees be replanted?	13003

Response:

This is not a practical option. Regeneration and management plans will more likely result in successful revegetation.

	Typical submissions include:
F2 would contribute to altered shadow and rain regimes. It may not be possible to sustain exotic and native species of plants and animals. Breakdown of environment would result. More exotic weed infestation would occur into bush areas. Erosion could occur.	1032, 2286, 3483, 5121, 5757, 5930, 5931, 6038, 6892, 6909, 7336, 7432, 7960

Response:

Shade-tolerant plant species will be planted to reduce impacts, and the relevant authorities will be consulted for advice and assistance. The success of the planting will be monitored as part of the bushland management plan.

	Typical submissions include:
Trees and Road Safety - Safety requirements would demand that all high trees on the road boundary be removed.	7430

Response:

Where trees remain adjacent to the proposed expressway, they will be protected by safety barriers. Trimming of trees to clear overhanging branches may be necessary.

	Typical submissions include:
Uncommon Vegetation Communities - Blue Gum forest, Ironbark woodland, Red Mahogany woodland, stand of Schozomeria ovata, (Crab Apple), uncommon locally and in Sydney, will be severely affected.	4354, 5155, 5121, 5930, 6909, 6920, 7762, 7923, 8013, 14139

Response:

The impact of the proposed expressway on uncommon vegetation communities was considered in Chapter 21 of the Western EIS, and Chapter 6 of the Eastern EIS. The revegetation planting would require planting of local native species in suitable locations.

	Typical submissions include:
The proposed replacement Ironbark woodland to be planted at Barclay Road should be dedicated as a conservation reserve to Baulkham Hills Council and should be subject to a protective covenant and adequately funded.	7923

Response:

The management of existing and replacement vegetation will be the subject of the bushland management plan. The appropriate agency to carry out maintenance will be determined in that plan.

	Typical submissions include:
What clearing of bushland along Devlin's Creek will occur along the line of the proposed expressway?	5121

Response:

The exact extent of bushland to be cleared will be decided when final design is completed. The estimated areas of bushland to be cleared are provided in the EIS. Every effort will be made to keep this clearing to a minimum.

	Typical submissions include:
How are large trees to be removed and what vehicles will be required to do so?	5121

Response:

It will be the responsibility of the contractor to remove vegetation and to determine necessary equipment, including vehicles that will be required for such tasks.

	Typical submissions include:
Construction and drainage works connected with the freeway will lead to a rapid decline in the health of trees in the golf course.	6903, 6909

Response:

The RTA will require the development of the bushland management plan to occur in consultation with the golf club to deal with these issues.

8.54 Fauna

	Typical submissions include:
Uncommon bird species, e.g. Satin Bower, King Parrot and Golden Whistler, which inhabit Devlin's Creek, will be unlikely to survive due to habitat destruction, noise and road kills.	2758, 4658, 5121, 5127, 5155, 5354, 5858, 5930, 6875, 6937, 7311, 7316, 7762, 8013

Response:

These issues have been considered in Section 10.6.3 of the Eastern EIS and Chapter 21 of the Western EIS.

	Typical submissions include:
Although animals in the study area were classed as high in population in NSW and Australia, their habitat should be considered as worthy of protection.	5747

Response:

Animal populations will be monitored. See Eastern EIS page 415 and Western EIS page 298.

	Typical submissions include:
Many species of birds will be disturbed and possibly driven away by construction noise, pollution and alteration to the natural habitat.	4658, 5121, 5345, 5757, 5855, 6074, 8013, 14139

Response:

Bird species will be monitored as outlined in the Eastern EIS page 415 and Western EIS page 298.

	Typical submissions include:
A number of bird species and some reptile species in the Darling Mills State Forest were not documented. The Powerful Owl, the Green and Golden Bell Frog and Bent Wing Bat are all endangered species and have been reported in the area but are not recorded in the EIS survey. List of species observed by the consultant is incomplete.	4354, 5730, 5757, 5855, 7927, 8013

Response:

These matters were the subject of a special report from the RTA's fauna consultant. The results of that report are summarised at paragraph 3.7 of Part 5 of this report.

Three endangered species, Yellow Bellied Sheathtail Bat, Common Bent Wing Bat and Eastern Freetail Bat, were located during the additional fauna study (See Appendix 35). There is the potential for the Powerful Owl and the Red-Crowned Toadlet to occur in the area. Sightings of the Powerful Owl additional to those listed in the EIS have occurred in the northern suburbs of Sydney. There has been a recent record of the Powerful Owl at North Rocks. The lack of response by Powerful Owls during the additional study indicates that this species was probably not using the route corridor at the time of the survey. Other endangered species, Squirrel Glider, Swift Parrot and Green and Golden Bell Frog which may occur in the area were searched for, but there was no evidence of their presence.

	Typical submissions include:
Flora and fauna would not be able to adapt to destruction of their habitat. Habitat loss would lead to the reduction of bird and animal numbers. Although the EIS proposes mitigation measures such as wildlife tunnels, these do not mitigate against the loss of habitat. How will existing fauna be catered for during construction?	2286, 2779, 4658, 5201, 6892, 6898, 6916, 7203, 7341, 7561, 14139

Response:

The EIS studies indicated that the impacts of the expressway could be managed. All flora and fauna will be monitored during construction and measures taken to assist the preservation of the flora and fauna colonies which may be revealed in the monitoring programme.

	Typical submissions include:
Bird population is severely under-estimated in the western EIS.	5121, 5354

Response:

This matter has been the subject of an additional assessment of fauna impact. A copy of the report is attached in Appendix 35.

GENERAL ENVIRONMENT ISSUES

8.55 General

	Typical submissions include:
Irresponsible not to have prepared a fauna and flora impact statement. Many local extinctions will occur.	7426

Response:

The need for a fauna impact statement has been considered. It was concluded that a fauna impact statement was not required.

	Typical submissions include:
Appointment of an independent environmental consultant during construction to oversee mitigation measures and liaise with project managers.	3259

Response:

An independent Community and Environmental Officer will be appointed by the RTA for the proposed expressway to ensure ongoing liaison between the RTA, the contractor and the local community during construction and early operation of the proposed expressway.

	Typical submissions include:
Closeness of F2 to Epping Heights Public School leaves no room for tree screening.	6927

Response:

Suggestions for design of noise barriers are set out in the EIS. A School Liaison Group will be established for Epping Heights Public School, and detailed design would be undertaken in consultation with that Group. Measures such as classroom re-location would be considered by the Group.

	Typical submissions include:
Would private consortia be forced to comply with mitigation measures proposed in the EIS? Who would oversee compliance?	6895

Response:

The consortia would be required by the RTA, as a condition of project approval, to comply with mitigative measures (including obtaining and complying with pollution control licences). Compliance with these requirements is enforceable by any person in the Land and Environment Court. The RTA will engage an independent Community and Environmental Liaison Officer with responsibility to participate in the design and inspection of mitigative measures.

	Typical submissions include:
No identification of any unfavourable interactions between the building of the freeway and the environment.	3816

Response:

The EIS considers these issues in detail. A wide range of benefits and costs for the proposal were addressed and evaluated.

	Typical submissions include:
Full description of the environment likely to be affected has not been given.	3816

Response:

The EIS and the working papers contain a full description of the environment likely to be affected by the proposed expressway.

8.56 Monitoring

	Typical submissions include:
Monitoring programmes should be established for at least 10 years with surveys twice yearly.	5121

Response:

Various monitoring programmes are suggested in the EIS. These will be implemented and included in any conditions of approval.

	Typical submissions include:
A community committee should be established to monitor bushland mitigation and restoration works. It should have clear powers and a mechanism for resolving conflicts.	3259

Response:

It is proposed to establish community liaison groups with powers to comment on the design and implementation of the proposed expressway, and to monitor a variety of matters including bushland mitigation and restoration works.

	Typical submissions include:
An environmental monitoring and feedback program should be considered to check the accuracy of potential health impacts or to identify need for remedial action. Monitoring should be undertaken of the impact of the proposed expressway on archaeological sites by a qualified archaeologist and an Aboriginal Land Council officer. Monitoring should also occur concerning the effects of blasting, vibration, vandalism.	6886 ,6916

Response:

Monitoring programmes will be established to assess the impact of pollution control procedures and for archaeological sites. It is not proposed to monitor health impacts.

VISUAL

	Typical submissions include:
The proposed expressway and noise barriers are extremely ugly sight for properties nearby.	887, 1206, 2637, 3762, 4036, 4768, 5444, 5757, 5855, 5862, 5913, 5981, 6074, 6116, 6892, 6979, 7302, 7304, 14058

Response:

The final choice of design of noise barriers (including visual issues) will be made following community consultation.

	Typical submissions include:
Khartoum Road - Bridge will be visually intrusive and should be over the new roadway keeping it in an existing natural cutting.	678

Response:

The RTA considers that Khartoum Road should pass under the expressway as proposed. As shown on Figure 9.33 of the Eastern EIS, it would be very difficult to suitably grade the proposed expressway to pass under Khartoum Road.

	Typical submissions include:
Somerset Road Tunnel Entry - Close to the hospital and the visual impact has not been determined or not stated.	5134

Response:

As shown in Figure 9.48 of the Eastern EIS, the proposed expressway tunnel portal is at a distance, and not visible, from the Hospital.

	Typical submissions include:
Loop near Lamorna Avenue will have severe visual impacts for residents living nearby.	7287, 7204

Response:

The loop at Lamorna Avenue has been the subject of design considerations and is reported on by SMEC. See Appendix 22 to this Assessment Report. The RTA now proposes a diamond style interchange. Removal of the loop will reduce the visual impact of the proposed expressway near Lamorna Avenue.

	Typical submissions include:
Photomontages - inaccurate representation in the EIS. Artists impressions depict viaduct above trees. Discrepancy exists between artists impressions and plans.	968, 5926, 6039, 7336

Response:

Photomontages represent artistic impressions of the visual impact of the proposal at various viewpoints. They are incorporated into the EIS to give the reader a visual impression of the proposal and to improve the understanding of the proposal. The photomontages are not intended to show precise details of the structure, details which will only be determined during the final design stage.

	Typical submissions include:
Has the RTA considered painting a dark colour over the cutrock surfaces?	5607, 5645

Response:

Cutrock surfaces are usually left in their natural state to weather slowly.

	Typical submissions include:
Not clear what steps are proposed to be taken to mitigate the visual impact of the tollway. What is proposed to maximise the visual quality of the area and what is the timeframe in which such proposals will have any positive impact?	90, 5741

Response:

The RTA will require landscape plans and bushland management plans to be developed and implemented, and the RTA will require these plans to address long-term management issues. It may take some time for a management plan to mature.

	Typical submissions include:
Power Lines - The visual amenity would be improved if overhead transmission lines were placed underground.	2798, 7049

Response:

The location of the overhead transmission lines is a matter for the power authority and there will be no RTA requirement that transmission lines be placed underground.

WATER QUALITY

	Typical submissions include:
Water Quality will be affected by runoff from roads.	7438

Response:

The RTA will require measures to maintain the quality of water and streams. These measures will include siltation traps and gross pollutant traps.

	Typical submissions include:
No accurate assessment of water quality is contained in the EIS. Road run-off containing pollutants (eg heavy metals, rubber) will affect local creeks, rivers and wildlife.	1439, 4089, 5862, 6074, 6892, 6923, 7374, 7635, 7724, 7782, 7913

Response:

When final design is completed and before construction commences, additional water quality analysis will be undertaken to establish the benchmark water quality in creeks and streams likely to be affected by construction of the proposed expressway. Water quality guidelines of the EPA will be adhered to during construction and operation of the roadway.

9. PLANNING

9.1 Employment Centres

	Typical submissions include:
CBD is not the major employment centre for the NW Sector. Parramatta (and Blacktown) are, so why the F2.	3214, 3226, 4886, 5121, 5221, 5319, 5764, 6127, 6884, 6892, 6907, 6917, 7213, 7561, 7369, 7699, 12773, 14119

Response:

In the Metropolitan Strategy all centres are important and whilst growth of employment is encouraged at Parramatta and Blacktown, there is still the need to provide for those jobs that exist in the CBD and the high employment belt from North Sydney/Chatswood/North Ryde. The proposed expressway also will provide better access from the North Shore to the growth centres of Parramatta and Blacktown. Further, the indirect benefit of relieving congestion in areas along the corridor is to make access across the corridor to Parramatta and Hornsby considerably better. The provision of a new public transport corridor enhances choice between employment centres.

9.2 Employment Trends

	Typical submissions include:
The F2 will create additional employment opportunities.	5122, 6907, 6912, 9569

Response:

To the extent that greater flexibility in mode and destination is possible with the proposed expressway, then its construction will provide additional employment opportunities.

9.3 Integrated Transport Planning

	Typical submissions include:
The study should have been the responsibility of the SPCC so that it would be viewed as part of the planning for the future development of Sydney and an adequate public transport system.	6932, 13928

Response:

The former State Pollution Control Commission was never responsible for the overall metropolitan planning for Sydney. Part V of the EPA Act allows government instrumentalities to act as proponent, to prepare and exhibit EISs and to determine whether the project proceeds or

not. A number of government instrumentalities are involved in looking at components of metropolitan planning and working together as a co-ordinated body. RTA's charter is to manage the roads and traffic system. In this instance, the RTA has consulted other authorities widely in considering the role of public transport and to develop a more integrated transport facility.

	Typical submissions include:
Need to solve the transportation needs for all of Sydney on an integrated basis, not just the F2 corridor, and not just car based.	2650, 2892, 3485, 4812, 4970, 5141, 5320, 5747, 5840, 5931, 6341, 6932, 7253, 7255

Response:

The proposed expressway is part of the integrated strategy that has evolved for Sydney's growth over the last forty years. The corridor attempts to link different modes with different destinations and thus provide choice. The corridor provides space for future light rail should this option prove viable. The transport needs of Sydney are being addressed by a series of incremental actions which preserve viable future options against current mobility needs.

	Typical submissions include:
Inquiry into integrated transport and land use planning be held before more major roads are built.	2758, 5121, 5217, 7699

Response:

Integrated transport planning is already in place with co-operation between the Department of Planning, the Department of Transport and the RTA. The North West Corridor is part of that consideration.

9.4 Land Use Planning

	Typical submissions include:
Land use decisions need to be made keeping in mind the bigger picture.	1817, 2779, 5189, 6378, 6884, 6896, 7561

Response:

The proposed expressway is part of the Metropolitan Strategy for Sydney. The review of the Strategy currently underway takes on board the issue of Sydney's transport needs and integration.

	Typical submissions include:
Which cities of comparable size and affluence of Sydney have reduced traffic congestion by building non-urban expressways? How does adding the F2 to the road network curb the demand for new road infrastructure?	5121

Response:

The expressway and busway is a balanced response to a strategic need. It is not a measure to curb demand or reduce infrastructure. It is measure to meet the needs of the North West Sector.

9.5 Metropolitan Strategy

	Typical submissions include:
Strategy under review, need to wait.	1715, 2103, 2713, 2895, 3226, 3243, 3547, 3772, 4029, 4031, 4812, 4813, 5121, 5122, 5207, 5221, 5319, 5320, 5947, 5978, 6044, 6060, 6318, 6884, 6892, 6895, 6907, 6979, 7519, 7551, 7561, 7762, 7699, 7913, 8094, 11201, 13928

Response:

The proposed expressway has been an integral part of the planning for Sydney's growth for decades. Plans for Sydney have over the years assumed car movements are an integral part of the overall transportation picture for Sydney. Gradually, the extent of the proposed road network has been reduced since the concept of the SATS (Sydney Area Transportation Study) study in the early 1970's. However the main elements of the proposed expressway and the M4 and M5 and a link from Liverpool to Hornsby have been recognised as essential for mobility and accessibility needs. Both passenger and freight goods movements have assumed a modal split which warrants an upgrading of both a road based and rail based network.

	Typical submissions include:
Although the road reservation has been planned for 30 years it does not mean that the road has to follow this plan. Why has expensive housing been allowed adjacent to the route with no warnings about possible adverse impacts?	1607, 3778, 4305, 6378, 6884

Response

The EIS study investigated a wide range of options to meet the transport needs in the region. Options outside the original corridor as well as within the corridor were investigated. The community consultation process resulted in two options being investigated in detail with the provision of a new transport link in the corridor being the preferred solution. (See paragraphs 2.1 to 2.11 of Part 4 of this Assessment Report). The fact that the corridor has been in existence on council planning schemes for a long period has influenced the development along the corridor but could not prevent residential development outside the road corridor zoning.

	Typical submissions include:
Construction of the F2 has not been thoroughly investigated and should not proceed.	4740

Response

The investigation for the proposed expressway has involved extensive investigation of options to meet the transport demands. Extensive community consultation during all phases of the process has affirmed the need and the solutions proposed.

9.6 North West Sector

	Typical submissions include:
NW Sector needs the F2 if it is to continue to grow and serve Sydney's housing demands.	6489, 6932, 10368, 12085

Response:

The proposed expressway will provide a strategic corridor from established business employment areas including North Ryde and the development envisaged for the North West sector.

	Typical submissions include:
The NW Sector should stop, and hence need for F2 disappears. Predicted growth of the sector has been significantly overestimated.	3108, 4761, 5931, 6378, 6884, 7596, 7927

Response:

Environmental studies were carried out prior to the release of land in the North West Sector. This Sector is a vital part of the Metropolitan Strategy for Sydney in terms of providing choice for the housing needs of an expanding population. For example, it is expected that, by the end of June 1994, over 1,000 homesites will be for sale. Plans for the North West Sector are well developed, and infrastructure (such as sewerage and water) are under construction. There are considerations to limit the total extent of the North West Sector release, but the size of the sector would still be considerable and the reduction not sufficient to reduce the warrant for this strategic transport facility.

9.7 Section 94 Contributions

	Typical submissions include:
Section 94 contributions should be applied to the expressway to compensate for adverse impacts and to be spent on open space, traffic calming, safety and other community improvement.	673, 5749

Response:

Section 94 is not applicable. It operates in circumstances when development applications are made to local councils and allows the councils to require contributions to the costs of infrastructure that the development will entail. The proposed expressway is an infrastructure development not requiring development consent.

9.8 Population Trends

	Typical submissions include:
The assumptions on populations used in the EIS may not be correct.	2286, 6175, 6038, 6907

Response:

The growth projections are based on information provided by the Department of Planning. The RTA understands this to be the best information available.

9.9 Urban Consolidation/Urban Sprawl

	Typical submissions include:
Expansion of the North West Sector and commuting by car is at odds with urban consolidation policy. Problem of urban sprawl not addressed: F2 exacerbated the problem. EIS does not consider urban consolidation trends.	5121, 5221, 6101, 6892, 6932, 7122, 7340, 8096

Response:

The proposed expressway will assist the Government's strategic planning objectives concerning the growth of Sydney's population. These policies need to cater both for urban consolidation and for growth. These policies, and the role of the proposed expressway in them, are generally reviewed in section 5.4.4 of the Eastern EIS and section 3.2.6 of the Western EIS.

9.10 Zoning

	Typical submissions include:
EIS suggests the Pennant Hills Golf Course is zoned Open Space/Recreation/Special Uses for public access, which is not the case.	6175, 6038

Response:

The present Hornsby Planning Scheme shows the zoning of Pennant Hills Golf Course as "6(a) Open Space (Private Recreation)".

	Typical submissions include:
If the F2 reservation is not used, it will be zoned residential and land sold. Potential for rezoning land not required for road purposes is of concern. Road corridor should be released for alternate land use, preferably for park land.	1627, 3465, 3815, 4743, 5778, 7879

Response:

The proposal is to use the reserve for the purposes of construction of an expressway. To the extent that residue land is available, it will be considered for disposal for the most appropriate use consistent with government policies for preservation of urban bushland and urban consolidation.

	Typical submissions include:
EIS did not address the issue of options for commercial release or publicly owned land as required in the brief.	7701

Response:

The proposal is to use the reserve for the purposes of construction of an expressway. To the extent that residue land is available, it will be considered for disposal for the most appropriate use consistent with government policies for preservation of urban bushland and urban consolidation.

10. OTHER MATTERS

10.1 Community Information

	Typical submissions include:
Brochure distribution prior to EIS not appropriate. Brochure could be confused with junk mail.	876, 3684, 6378, 8073

Response:

The RTA circulated brochures to all households that it thought would be interested in the proposal so that the community could be involved in the public consultation process. 76,000 brochures describing the alternative transport links and inviting public comment were distributed by Australia Post in July/August 1991 to households, businesses and private boxes in the postcode areas of Carlingford (2118), Beecroft (2119), Pennant Hills/Cherrybrook (2120), Epping (2121), West Pennant Hills (2125), Seven Hills/Kings Langley (2147), North Rocks (2151), Northmead (2152), Baulkham Hills/Winston Hills/Kellyville (2153) and Castle Hill (2154).There were delays in delivery by Australia Post, particularly in parts of Baulkham Hills, Winston Hills, Carlingford and West Pennant Hills, some of which were located along the proposed expressway route. As a result of these delays, the reply deadline was extended by two weeks from 6 August to 20 August 1991.

	Typical submissions include:
Brochure distribution prior to EIS limited and the use of a 3.2% response rate as a statistic in favour of the F2 and as a measure of community preferences unacceptable. Brochure contained general information.	6378, 7788, 7795, 7927

Response:

The distribution is discussed in the response above. The responses from the community were not statistically significant.

	Typical submissions include:
Brochure restricted opportunity for comment.	875, 876, 5637, 6378, 8073, 8209

Response:

There was no intention of the RTA to restrict comment, in fact, the RTA offered all groups the opportunity to comment in a range of ways.

Prior to the distribution of the information brochure the following process was implemented:

- A formal letter was sent to government departments, agencies and other organisations seeking input into the study.
- Members of the study team visited relevant councils and consulted with senior engineers, planners and community services staff. The aim of these meetings was to inform the councils of the process that was underway, and to identify local issues and interest groups within the community.
- Advertisements were placed in local papers and a media release issued.
- A newsletter was produced to provide information to interested groups and individuals.
- Meetings were held with specific interest groups.
- The Community Consultative Committee was established for the Western EIS and commenced a series of seven monthly meetings.
- Consultative Workshops were held for the Eastern EIS.
- An open line was established to answer questions and provide information throughout the process.

The information brochure was distributed throughout the study area, providing information and seeking input via a questionnaire requesting community response to heavy rail, exclusive busway, upgrading the existing arterial road network, shortlisted broad alternatives, bushland versus houses, public transport, archaeological items, and requesting any other community comments.

	Typical submissions include:
Community effort by Mahers Road Residents Group ignored whilst other groups and persons with probably far less involvement have been recorded.	177, 2914

Response:

Meetings were held with the Mahers Road residents. All issues raised in submissions to the EIS have been considered. The impact of all issues raised has been taken into account.

	Typical submissions include:
Lamorna Avenue Residents - Residents given no clear consultation before the EIS was issued.	885, 3565, 4786

Response:

The design of Lamorna Avenue outlined in the 1992 EIS was new to many residents. Following the release of the 1992 EIS, the residents of Lamorna Avenue were given a fair hearing. This consisted of a meeting to hear their submissions held at the Roselea Community Centre. Following that meeting, the RTA engaged SMEC to examine the concerns of the residents, and SMEC reported back to the group at a further meeting at the Roselea Community Centre on 10 March 1993. The design of the proposed expressway has been varied to a diamond interchange to meet local needs.

10.2 Compliance with EPA Act and Regulation

	Typical submissions include:
Cost of EIS and Working Papers - Cost of complete sets of EIS and 34 working papers amounts to $380 when the Regulation specifies $25.	5122

Response:

Clause 63(4) of the Regulation specifies the cost of the EIS be no more than $25. The Eastern EIS and the Western EIS were each available for $20. As stated in the EISs, the working papers were not part of the EISs. The RTA decided, nevertheless to make the working papers available for $10 a volume. In addition, the working papers were available in libraries and a number of copies were loaned by the RTA on request.

	Typical submissions include:
The NWTL EIS does not satisfy the requirements of the Act, particularly with regard to noise, misleading, inadequate or incomplete information.	1004, 1021, 1619, 1626, 1931, 2150, 2221, 2286, 2639, 2713, 3608, 4504, 4806, 4892, 4905, 5093, 5127, 5134, 5182, 5265, 5217, 5220, 5221, 5226, 5304, 5605, 5607, 5225, 5747, 6009, 6034, 6044, 6059, 6100, 6101, 6114, 6170, 6926, 6940, 7209, 7336, 7432, 7442, 7561, 7657, 7699, 7701, 17928
The content of the EIS has failed to fulfil either its title or the obligations under the Act. All options and feasible alternatives have not been investigated in detail, e.g. tunnel under Terry's Creek and under Derby Street or the Abigroup Light Rail proposal. Both alternatives are road options. Does not include full details of any feasible alternatives and non-road options.	1817, 1931, 2150, 2773, 3243, 3247, 3381, 3560, 3777, 3970, 4905, 4776, 5121, 5219, 6378, 6383, 6883, 6898, 7221, 7226, 7286, 7927, 14085

Response:

One purpose of this Assessment Report is to ensure compliance with Part V of the EPA Act. The RTA believes that the 1992 EIS complies with the requirements of Part V of the EPA Act. Alternatives to the proposed expressway were the subject of detailed consideration which is set out in the EIS.

	Typical submissions include:
Various clauses of the Regulation, including clauses 57, 58 and 65 of the Regulation and Section 112 of the Act contravened.	3427, 3477, 3760, 3816, 3970, 4303, 4379, 4435, 4828, 5512, 5637, 5698, 5765, 6175, 6353, 6456, 6962, 6965, 6993, 7056, 7960, 7965, 2773, 3243, 3247, 3515, 3560, 3777, 3970, 5219, 5607, 5754, 5764, 5854, 5961, 6043, 6048, 6175, 6353, 7221, 7226, 7245, 7246, 7258, 7259, 7276, 7289, 7305, 7336, 7384, 7427, 7444, 7427, 7444, 7447, 7585, 7596, 7699, 6042, 5204

Response:

Compliance with these provisions has been examined in Part 3 of this Assessment Report. The RTA believes that these provisions have been complied with.

	Typical submissions include:
EIS does not provide information that enables the public to properly understand the environmental consequences of the proposal.	1810, 4366

Response:

The RTA believes that the 1992 EIS, and the public consultations that have occurred in relation to it, have assisted in enabling the public to be well informed of the environmental consequences of the proposed expressway.

	Typical submissions include:
Independence of Consultants - The RTA employed consultants that have a conflict of interests.	3775, 3818, 4394, 6481, 8224

Response:

The RTA has no reason to believe that the consultants employed on the 1992 EIS had or have a conflict of interests. Apart from the objectivity which the RTA's briefs sought to ensure in the

consultants, both consultants employed a large number of sub consultants to provide independent information on the 1992 EIS.

10.3 Consultants Brief

	Typical submissions include:
Brief demands all possible options be fully investigated. Brief demands that a full assessment of the effects of the tollway be carried out with respect to noise pollution	7347

Response:

The RTA considers the briefs to be sound, and that the EIS has been prepared in accordance with the briefs.

10.4 Commission of Inquiry

	Typical submissions include:
Commissioner Woodward's recommendations not adhered to and the RTA has proceeded with an expensive study of the original rejected proposal	2712, 2758, 3427, 3876, 6378, 6892, 5121, 7927

Response:

The proposed expressway is not the same as the proposal rejected by the Commission of Inquiry. It extends to the west of Pennant Hills Road and includes a busway. The section to the east of Pennant Hills Road is different in many respects to that of the 1989 EIS and was compared in detail to an alternative option of widening Pennant Hills Road, Carlingford Road, and Epping Road. As mentioned in paragraph 2.5 of Part 2 of this Assessment Report and paragraph 11.1 Of Part 5 of this Assessment Report, the findings of the Commission of Inquiry have received extensive consideration.

	Typical submissions include:
Consultants failed to address considerations and concerns expressed by the Commission of Inquiry in the preparation of the "West" EIS.	2758

Response:

As mentioned in paragraph 2.5 of Part 2 of this Assessment Report, the findings of the Commission of Inquiry were considered in the preparation of the Western EIS.

	Typical submissions include:
This current EIS insults the Commission and wastes money.	5220, 6884, 7635
Findings of the Inquiry should be addressed; findings ignored in the EIS.	5204, 5731, 6002, 6043, 6905, 7635
Lack of good public transport access to Parramatta from the North West Sector.	5607
RTA appears to be blatantly ignoring the findings of the Commission; twisted the findings.	2757, 5607, 5625, 5739, 5909, 6039, 6895, 7823
Inquiry established the need to look at many other transport needs	5782
RTA/Maunsells failed to meet objections of the Woodward Inquiry.	7384
Why is RTA putting forward same argument again so soon after the Inquiry?	7793
Why was the Commission of Inquiry over-ruled and by whom?	2882, 2897, 3214, 3253, 3547, 4870, 5173
Six recommendations of the Commissioner not considered in the 1992 EIS.	2758, 4786
How could this freeway meet the Commission of Inquiry's standards when it would be more destructive than the 1989 proposal, being wider?	5236
Road should not be built because the Woodward Inquiry rejected it in 1990.	7573

Response:

The findings of the Commission of Inquiry have received extensive consideration: see paragraph 2.5 of Part 2 of this Assessment Report. The RTA believes that the findings of the Commission of Inquiry have been properly addressed and that no twisting or ignoring of them has occurred. As recommended by the Inquiry, many other transport needs have been investigated in developing the concept for the proposed expressway. The findings of the Inquiry have not been overruled: the further investigations recommended in the findings have been undertaken and a new proposal has been developed. Every effort was made to ensure that, when preparing their reports, sub consultants to the 1992 EIS were aware in detail of the contents of the submissions to the Commission of Inquiry and of the Inquiry's findings.

10.5 Director's Requirements

	Typical submissions include:
Director's requirements not satisfied - EIS drawings not drawn to scale. - Diagrams not accurate to within 1m - No traffic management effectively discussed. - Detailed earthworks and structures not addressed. - Public did not view all alternative options. - Correspondence regarding impact on property received 80 days after exhibition began: only 11 days to the closing date for submissions. - Land tenure description. - Construction sequence. - Noise impact.	2286, 5217, 6883, 6895, 6940, 6993

Response:

Compliance with the Director's requirements has been examined in Part 3 of this Assessment Report. The RTA believes that proper regard has been given to the Director's requirements. Concerning notification of adjoining landowners or occupiers, as mentioned in paragraph 2.11(j) of Part 3 of this Assessment Report, every effort was made to do this and, as far as the RTA is aware, all adjoining landowners or occupiers were notified within 2 weeks of the opening of the exhibition period for the 1992 EIS. Diagrams are considered appropriate for residents to judge the relative scale of proposals. Conducted walks provided an added opportunity for residents to assess the proposal.

	Typical submissions include:
The RTA by defining the study area restricted the scope of the EIS, hence breaching the guidelines for EIS.	6378

Response:

The RTA sought advice from the Director of Planning on the scope of the EIS and the EIS complied with this advice.

10.6 EIS

	Typical submissions include:
EIS does not give a full description of the existing environment likely to be affected.	5201, 7221, 3515, 4032

Response:

The RTA believes that the 1992 EIS contains a full description of the existing environment likely to be affected. See Eastern EIS (pp38-48) and Western EIS (Parts A, D, E & F).

	Typical submissions include:
How is the new F2 which widens the roadway from 4 lanes plus shoulder to 7 lanes plus shoulders a more sensitive solution than the 1990 EIS.	3762, 4970, 5734, 5749, 7530

Response:

The 1992 EIS considered the need for a transport link in the corridor, as well as the environmental considerations relating to the choice of link. The proposed expressway is put forward as best meeting both the strategic transport needs for Sydney and relevant environmental considerations. The roadway to the east of Beecroft Road remains at 4 lanes, and by adopting the tunnel under North Epping, taking the southern most position in the corridor near Macquarie Centre, introducing ramps at Lane Cove Road and following Pittwater Road and tunnelling under Dehli Road the environmental impacts have been reduced. The proposal west of Beecroft Road is wider by virtue of the 2 median bus lanes, but the bus lanes are integral to the total transport approach and, again, more environmentally considerate. The southern alignment in Devlin's Creek and at Mahers Road, and the adoption of Option C in the Darling Mills Forest, further mitigate environmental impact.

	Typical submissions include:
EIS prepared without consultation with the Forestry Commission.	4279

Response:

The Forestry Commission was consulted and was represented on the inter-governmental committee chaired by the Department of State Development.

	Typical submissions include:
The Environmental Impact Study is a waste of time and money.	5236, 6115

Response:

The RTA is committed to comprehensive environmental examination of its proposals in accordance with the EPA Act. The RTA considers that EISs completed under that Act serve an important public function in informing the public of proposals and giving them the opportunity to participate in the planning of new transport links in the area.

	Typical submissions include:
EIS does not address minimising environmental impacts on the population when there are obvious engineering solutions which ameliorate the worst visual and noise problems.	6890

Response:

The EIS has addressed these matters. The RTA believes that detailed attention has been given to engineering solutions which ameliorate the worst visual and noise problems of the expressway. In any event, it is the RTA's intention to involve the community in consultation on many design issues. It will further reduce any adverse visual or noise impacts.

	Typical submissions include:
EIS difficult for a lay person to read.	3556, 6034, 6114

Response:

Every effort has been made to make the EIS as readable as possible. The RTA considers that the EIS document, the summaries and brochures together with the exhibited displays, and the conducted walks provided every opportunity for the community to appreciate the proposal.

	Typical submissions include:
Both EISs need to be revised to present a consistent long term proposal and a summation of the total degradation when both links are considered.	6892

Response:

These attenuation impacts have been assessed in the 1992 EIS.

	Typical submissions include:
The document is heavily slanted towards the freeway in all aspects.	2882, 3243, 5915

Response:

The proposal for the expressway and busway was developed following extensive public consultation and strategic analysis. The RTA does not consider the EIS to be slanted towards the expressway but offers a balanced transport solution to the needs of the North West region.

	Typical submissions include:
EIS does not address the positive aspects of doing nothing - less noise, better air quality, no visual impact, motivation to use public transport.	6114

Response:

The 1992 EIS uses the base case as reference and shows the proposal to be superior.

	Typical submissions include:
Complete disregard for emotional, physical and financial effects on remaining residents.	3565

Response:

The effects on local communities have been considered following extensive public consultation.

	Typical submissions include:
EIS has addressed road only solutions not road alternative solutions such as staggering work hours.	6114, 7246

Response:

The North West Corridor is a strategic corridor and will be subject to substantial growth. Strategies such as staggered working hours or flexi-time cannot meet the transport needs of the corridor.

	Typical submissions include:
EIS does not address earthworks, traffic management and loss of bushland sufficiently.	6884

Response:

The use of earthworks is addressed in construction working papers; traffic working papers thoroughly analysis the traffic impact, and the EIS sets out the loss of bushland. All of these aspects are addressed in detail.

	Typical submissions include:
There is no compulsion for the RTA to abide by the EIS. There is no redress for the community for failure by the RTA to comply.	6892

Response

The RTA and any contractor is bound to comply with conditions of determination which will reflect statements in the EIS and in this assessment report. Any person can enforce compliance with these conditions in the Land and Environment Court.

10.7 Exhibition Period

	Typical submissions include:
A three month exhibition period is not long enough to prepare submissions.	881, 4677, 5122, 7960, 8098

Response:

The EIS was placed on a three month exhibition period which well exceeded the required thirty days under the EPA Regulation. The three month exhibition period enabled consideration of the EIS, community involvement in workshops and meetings, the distribution and availability of newsletters and extensive media coverage, attendance at arranged walks and opportunities for canvassing additional information.

	Typical submissions include:
The comparison of the expressway option with the arterial upgrade option is flawed as it fails to assess their impact on the RTA's future plan to construct the B3 option.	6082

Response:

In 1987 the RTA undertook a preliminary study to examine the feasibility of a link between the proposed F2 Castlereagh Freeway and the F3 Sydney-Newcastle Freeway at Wahroonga. A number of options were examined and the preferred option was B3. This option went from the F2 at Vimiera Road, Marsfield, crossed the Lane Cove River to Kissing Point Road and skirted South Turramurra, Fox Valley and then to Wahroonga. The transport modelling and

environmental analysis for the 1992 EIS did not consider the construction of the F3 link. The link is not included in current RTA plans. The Government has stated that, if at some time in the future a decision is made to investigate the construction of the link, it would follow full community consultation and if a decision was then made to proceed with the F3 link, a new EIS would then be prepared.

10.8 Inadequacy of EIS

	Typical submissions include:
The EIS is inadequate on many grounds.	1810, 1817, 2346, 2758, 3381, 3681, 3243, 4905, 5927, 7246
EIS does not provide sufficient social, economic or environmental justification for the proposal. Integrity questioned due to flaws, misrepresentations and misinterpretations.	2346, 4032
EIS contains information which is materially misleading.	4359, 82190
Proposal should be declared null and void on scientific grounds - noise levels invalid and method of interpretation inadequate.	2757, 3584

Response:

The RTA does not consider the EIS to be inadequate. The EIS was based on comprehensive and objective information.

10.9 Justification

	Typical submissions include:
EIS failed to justify the proposal on social, economic and environmental grounds.	5754

Response:

The RTA rejects this conclusion. The EIS demonstrated the need for a transport link on economic and social grounds. The proposed expressway and busway emerged from the consideration of a broad range of options and has been developed to meet the strategic need. Its environmental impacts have been properly considered in the EIS.

10.10 Pre-determination

	Typical submissions include:
Asking for submission is merely playing lip service because the decision to construct the freeway has already been made.	5786

Response:

No decision has been made to proceed with the proposed expressway. The purpose of this Assessment Report is to ensure that any decision to proceed with the proposal complies with Part V of the EPA Act.

10.11 Proceedings to the Land and Environment Court

	Typical submissions include:
This proposal must go before the Land and Environment Court.	2346, 2369, 2757, 2789, 3243, 4032, 4905, 5204, 6138, 7283

Response:

Any individual or group is able to commence proceedings in the Land and Environment Court if there has been a breach of Part V of the EPA Act.

10.12 Request for a Public Inquiry/Commission of Inquiry

	Typical submissions include:
A Public Inquiry or Commission of Inquiry be held to: • Establish all matters relevant to environmental impact are correctly examined • Find a better solution • Investigate the RTA • Investigate the proposal • Investigate changes to the route of the proposal • Review results of the EIS • Lack of information • Viability of low impact alternatives • Correct examination of matters relevant to impact on the environment • Compensation • Contradictory and misleading aspects and anomalies of the EIS • Substantiate claims in EIS • Role of Baulkham Hills Shire Council in the development of the project • Protect interests of residents and the public • All options including rail	9, 10, 649, 654, 662, 674, 691, 708, 729, 759, 876, 877, 878, 879, 881, 883, 888, 931, 934, 939, 963, 966, 1004, 1021, 1042, 1057, 1060, 1073, 1083, 1088, 1089, 1118, 1160, 1165, 1206, 1207, 1322, 1351, 1376, 1380, 1423, 1442, 1495, 1544, 1545, 1554, 1607, 1619, 1684, 1698, 1702, 1728, 1729, 1730, 1765, 2081, 2159, 2358, 2365, 2371, 2375, 2424, 2428, 2436, 2466, 2529, 2534, 2541, 2713, 3008, 3035, 3090, 3108, 3164, 3236, 3427, 3442, 3463, 3472, 3480, 3743, 3772, 3775, 3778, 3805, 3816, 3818, 3830, 3833, 3911, 3912, 4279, 4295, 4300, 4314, 4319, 4330, 4331, 4347, 4360, 4366, 4375, 4376, 4377, 4378, 4379, 4387, 4389, 4394, 4435, 4441, 4460, 4504, 4508, 4531, 4673, 4709, 4718, 4724, 4732, 4743, 4750, 4761, 4892, 4911, 5088, 5092, 5189, 5204, 5221, 5304, 5364, 5513, 5541, 5559, 5580, 5605, 5607, 5618, 5625, 5637, 5645, 5660, 5666, 5682, 5685, 5717, 5971, 6009, 6059, 6101, 6123, 6128, 6130, 6181, 6183, 6185, 6198, 6206, 6209, 6214, 6330, 6456, 6481, 6494, 6870, 6892, 6911, 6953, 6962, 6965, 6967, 6988, 6993, 6996, 6997, 7008, 7011, 7014, 7017, 7040, 7056, 7078, 7149, 7154, 7442, 7639, 7777, 7782, 7801, 7804, 7852, 7892, 7927, 7955, 7960, 8015, 8073, 8094, 8098, 8099, 8203, 8204, 8210, 8217, 8219, 8220, 8224, 14125.

Response:

A decision to conduct a Commission of Inquiry rests with the Minister for Planning who is able to seek advice from the Director, Department of Planning. The Department of Planning is in receipt of copies of all submissions received by the RTA.

	Typical submissions include:
Further complete and objective investigations must be completed before any option is accepted.	2945

Response:

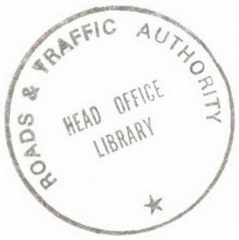
The RTA considers that the investigations completed to date are sufficient to enable it to make a determination concerning the proposed expressway.

10.13 RTA as Determining Authority

	Typical submissions include:
Major objection to the proposal is that the RTA is determining its own proposals. What happened to an objective and independent assessment? RTA cannot claim to be independent.	3463, 3762, 4911, 5971, 6378, 6892, 7505, 7790, 7795, 7868, 14087

Response:

The RTA's obligations are set out in Part V of the EPA Act. The RTA believes that it has fulfilled those obligations.



PART 7

CONSIDERATION OF CLAUSE 56 EPA REGULATION

1. Introduction

1.1 As mentioned in paragraph 2.38(b) of Part 3 of this Assessment Report, the RTA must, in its consideration of the 1992 Proposal, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity[236]. Clause 56 of the EPA Regulation lists "factors to be taken into account when consideration is being given to the likely impact of an activity on the environment" ("the Clause 56 Factors").

1.2 The purpose of this Part of the Assessment Report is to record consideration of the Clause 56 Factors as part of the preparation of this Assessment Report.

2. Clause 56 Factors

2.1 Appendix 44 to this Assessment Report lists where the 1992 EIS deals with the Clause 56 Factors. In summary, the effect of these factors in relation to the 1992 Proposal is as follows:

(a) **Will the 1992 Proposal cause any environmental impact on a community?**

Yes. The construction of the 1992 Proposal will cause environmental impacts on the communities through which it runs. These impacts have been the subject of the 1992 EIS.

(b) **Will the 1992 Proposal cause a transformation of a locality?**

Yes. These matters have been the subject of the 1992 EIS.

(c) **Will the 1992 Proposal cause an environmental impact on the ecosystems of the locality?**

Yes. These matters have been the subject of the 1992 EIS.

(d) **Will the 1992 Proposal cause a diminution of aesthetic, recreational, scientific or other environmental qualities or values of the locality?**

Yes. These matters have been the subject of the 1992 EIS.

(e) **Will the 1992 Proposal cause any effect on a locality place or building having aesthetic, anthropological, archaeological, cultural, historic or scientific or social significance or other special value for present or future generations?**

Yes. These matters have been the subject of the 1992 EIS.

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236 Section 111 EPA Act

(e1) **Will the 1992 Proposal cause any impact on the habitat of any protected fauna within the meaning of section 98 of the National Parks and Wildlife Act 1974 or endangered fauna within the meaning of that Act?**

No significant impact on the habitat protected fauna or endangered species is likely as a result of the 1992 Proposal. These matters have been the subject of the 1992 EIS.

(f) **Will the 1992 Proposal cause any endangering of any species of fauna or flora?**

No. This matter has been the subject of the 1992 EIS.

(g) **Will the 1992 Proposal cause any long term effects on the environment?**

Yes. This matter has been the subject of the 1992 EIS.

(h) **Will the 1992 Proposal cause any degradation of the quality of the environment?**

Yes. This matter has been the subject of the 1992 EIS.

(i) **Will the 1992 Proposal cause any risk to the safety of the environment?**

No significant risk will be caused by the 1992 Proposal. These matters have been the subject of the 1992 EIS.

(j) **Will the 1992 Proposal cause any curtailing of the range of beneficial uses of the environment?**

Yes. This matter has been the subject of the 1992 EIS.

(k) **Will the 1992 Proposal cause any pollution of the environment?**

Yes. This matter has been the subject of the 1992 EIS.

(l) **Will the 1992 Proposal cause any environmental problems associated with the disposal of waste?**

No.

(m) **Will the 1992 Proposal cause any increased demands on resources, natural or otherwise, which are, or are likely to become, in short supply?**

No.

(n) **Will the 1992 Proposal cause any cumulative environmental effect with other existing or likely future activities?**

Yes. This matter has been the subject of the 1992 EIS.

PART 8

RECOMMENDATIONS

1. Introduction

1.1 The purpose of this Part of the Assessment Report is to make recommendation, on the basis of materials in Parts 4, 5, 6 and 7 of this Assessment Report, for the 1992 Proposal.

1.2 The following recommendations in relation to the 1992 Proposal are made after having examined and considered the 1992 EIS and the representations to it. In particular, the recommendations are made having examined and considered the options assessed, and the mitigative measures proposed, in the Eastern EIS[237], and the options assessed, and the mitigative measures proposed, in the Western EIS[238].

2. Central Recommendation

2.1 The central recommendation of this Assessment Report is that approval should be given to the 1992 Proposal subject to paragraphs 3 to 17 of this Part 8.

3. The Project

3.1 The 1992 Proposal will be constructed and operated as a tollway as described in paragraph 2.14 of Part 2 of this Assessment Report, subject to the following amendments:

(a) The route of the 1992 Proposal through Devlin's Creek will be the route described as the "southern alignment"[239].

(b) The cable-stayed bridge indicated in the artist's impression (Figure 9.46 of the Eastern EIS) will be replaced with a bridge of conventional design.

(c) The route of the 1992 Proposal near Mahers Road and Pennant Hills Golf Club will be the route known as the "southern alignment"[240] varied at its western end to become a diamond interchange as described in Appendix 22 to this Assessment Report.

(d) The interchange at Pennant Hills Road will be built as described in Figure 5 of Appendix 22 to this Assessment Report.

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237 **Appendix 25 to this Assessment Report lists the mitigative measures proposed in the Eastern EIS and identifies their location in the Eastern EIS.**

238 **Appendix 25 to this Assessment Report lists the mitigative measures proposed in the Western EIS and identifies their location in the Western EIS**

239 **See Eastern EIS figures 9.27-28 and Figure 9.42.**

240 **See Eastern EIS figures 9.25, 9.27 and 9.39.**

(e) The route of the 1992 Proposal through Darling Mills State Forest will be the route known as "Variation C"[241].

(f) As a result of the change in design of the Pennant Hills Road interchange and the adoption of "Variation C" through Darling Mills State Forest, the toll plazas at Pennant Hills Road will be located as shown in Figures 5 and 6 of the Addendum to the Western EIS, and the number of toll booths will be increased from 3 to 4, and the toll plaza correspondingly altered, at the west-bound on-load ramp to the 1992 Proposal from Pennant Hills Road[242].

(g) The Stage 1 Upgrading at Epping Station will be undertaken as described in paragraph 9.2 of Part 5 of this Assessment Report.

(h) Pedestrian access will be provided as illustrated in the plans in Appendix 45 to this Assessment Report.

3.2 The proposal described in paragraph 3.1 is referred to in these recommendations as "the Recommended Proposal". The Recommended Proposal is illustrated on the plans contained in Appendix 46 to this Assessment Report.

4. Zoning Issues

4.1 The location of the Recommended Proposal, and the zoning of the land to be occupied by it and used during construction, are illustrated on the plan which forms Appendix 47 to this Assessment Report.

4.2 That plan illustrates that the Recommended Proposal will be located:

(a) mostly within the existing road reservation; and

(b) (where it is located outside the existing road reservation) within the following zones:

(1) **Ryde (Ryde Planning Scheme Ordinance)**

Zones Affected	Permissibility
County Open Space	Roads are prohibited
Residential 2(a)	Development consent required
Special Uses (Council Purposes)	Development consent required
Special Uses 5(a) (TV)	Development consent required
Special Uses (University)	Development consent required

241 See Western EIS Figure 41.

242 These changes in design are illustrated on page 3 of Appendix 22.

Recreation 6(a)	Development consent required

(2) **Hornsby (Hornsby Planning Scheme Ordinance)**

County Open Space	Roads are prohibited.
Residential 2(a1)	Development consent required
Special Uses 5(a) (School)	Roads are prohibited.
Special Uses 5(b) (Railway	Development consent required
Recreation 6(a)	Roads are prohibited.

(3) **Baulkham Hills (Baulkham Hills LEP 1991)**

Residential 2(a)	Development consent required
Residential 2(b)	Development consent required
General Business 3(a)	Development consent required
Special Uses 5(a) (Education Establishment)	Development consent required
Special Uses 5(a) (Forestry)	Development consent required
Recreation 6(a)	Development consent required

(4) **Parramatta (Parramatta LEP 1990 (Toongabbie Ward))**

Residential 2(a)	Development consent required
Road Reservation 9(a)	Development consent required

(5) **Blacktown (Blacktown LEP 1988)**

Industrial 4(a)	Development consent required

4.3 In both Ryde and Hornsby local government areas, the Recommended Proposal will traverse several areas which are outside the existing road reservation but which are not zoned under the Ryde Planning Scheme Ordinance or the Hornsby Planning Scheme Ordinance. Where this occurs, the provisions of Part V of the EPA Act apply, and the

provisions of Part IV of the EPA Act do not apply. As a result, the local councils do not have roles in approving the Recommended Proposal in these areas, and approval to the Recommended Proposal in these areas may be determined by the RTA.

4.4 In any zone traversed by the Recommended Proposal where development consent is required, the provisions of clause 11C of State Environmental Planning Policy No. 4 operate to make the provisions of Part V of the EPA Act apply instead.

4.5 In short, Part V of the EPA Act applies for the entire route of the Recommended Proposal other than those parts of the route within:

(a) county open space;

(b) the Special Uses 5(a) (School) zone under the Hornsby Planning Scheme Ordinance; and

(c) the Recreation 6(a) zone under the Hornsby Planning Scheme Ordinance.

In these areas, the Recommended Proposal is currently prohibited. The RTA will take steps to bring about a rezoning of these areas to overcome the prohibition.

4.6 No construction of the Recommended Proposal will commence unless and until construction is permitted (either with or without development consent) in all zones referred to in paragraph 4.2.

4.7 The RTA will take steps to bring about a rezoning of those areas of the existing road reservation which are not required for road purposes and which (generally described) lie to the north of the Recommended Proposal and to the east of Alma Road and to the west of Lane Cove Road ("the Rezoning Area"). The RTA's intention is that the rezoning will:

(a) (subject to (c)), permit development of the Rezoning Area for the purposes of medium density housing;

(b) contain development standards appropriate to ensure that any medium density housing constructed in the Rezoning Area has been designed so as:

(1) to present an effective traffic noise barrier between the Recommended Proposal and areas to the north of the Rezoning Area; and

(2) to reduce as far as possible the effects in the medium density housing of noise from the Recommended Proposal; and

(c) prohibit development in, and require preservation of, the stand of mahogany trees in the vicinity of Yurrah Reserve.

4.8 The RTA will investigate the possibility of rezonings of the sort referred to in paragraph 4.7 for other areas of existing road reservation which are not required for road purposes and will, where appropriate, take steps to bring about such rezonings.

5. Community & Environment Liaison Officer

5.1 The RTA will, prior to commencement of construction of the Recommended Proposal, engage at the RTA's expense an independent professional to act as a Community and Environment Liaison Officer for the Recommended Proposal having functions set out in these recommendations.

6. Task Force for Upgrading the Interchange at Epping Station

6.1 The RTA will take steps, prior to commencement of construction of the Recommended Proposal, to establish a task force for the Stage 2 Upgrading the Interchange at Epping Station. The Task Force will be comprised of representatives of the RTA, the State Rail Authority, the State Transit Authority, and others that the RTA considers appropriate. The role of the Task Force will be to oversee the carrying out of investigations for, and any construction work relating to, the Stage 2 Upgrading.

7. Project Liaison Group

7.1 The RTA will, prior to commencement of construction of the Recommended Proposal, form a Project Liaison Group. The Project Liaison Group will be comprised of the Community and Environment Liaison Officer, and a representative of each of:

(a) the RTA;

(b) the contractor for the construction and operation of the Recommended Proposal ("the Contractor");

(c) the EPA;

(d) the NPWS;

(e) the Forestry Commission;

(f) the Water Board;

(g) the Department of Conservation and Land Management ("CALM");

(h) the Department of Water Resources;

(i) Hornsby Shire Council;

(j) Parramatta City Council;

(k) Ryde Municipal Council; and

(l) Baulkham Hills Shire Council.

7.2 The RTA will ensure that the Project Liaison Group meets from time to time as appropriate to keep it adequately informed concerning the construction and operation of the Recommended Proposal.

7.3 The Project Liaison Group may:

(a) make such comments or recommendations to the RTA concerning the design or implementation of the Recommended Proposal as the Group agrees; and

(b) in such manner as the Group agrees, seek views from the local community concerning the design or implementation of the Recommended Proposal.

7.4 The RTA will consider all comments and recommendations made to it by the Project Liaison Group and may adopt any recommendation made to it by the Project Liaison Group.

7.5 The RTA will require the Contractor to comply with, and to ensure compliance by all subcontractors to the Contractor ("Subcontractors") with, any recommendation from the Project Liaison Group which has been adopted by the RTA subject to any conditions of adoption.

8. Local Liaison Groups

8.1 The RTA, will prior to the commencement of construction of any particular part of the Recommended Proposal, form a Local Liaison Group for that part. Local Liaison Groups will be comprised of the Community and Environment Liaison Officer, a representative of the RTA, a representative of the Contractor, a representative of the EPA, a representative from each of such of the following bodies as the RTA appoints:

(a) the NPWS;

(b) the Forestry Commission;

(c) the Water Board;

(d) CALM;

(e) the Department of Water Resources;

(f) Hornsby Shire Council;

(g) Parramatta City Council;

(h) Ryde Municipal Council;

(i) Baulkham Hills Shire Council;

and two representatives of the local community appointed in accordance with paragraph 8.2.

8.2 Prior to the formation of a Local Liaison Group for any part of the Recommended Proposal, the RTA will call for nominations in writing from the local community relating to that part of the Recommended Proposal. The RTA will give appropriate

public notice calling for the nominations. The RTA will consider the nominations when received and, following consultations concerning the nominations with the local Council or Councils for that part, will appoint two representatives of the local community to the Local Liaison Group.

8.3 A Local Liaison Group may:

(a) meet from time to time as the Group agrees; and

(b) (in relation to that part of the Recommended Proposal to which the Local Liaison Group relates):

(1) make such comments or recommendations to the RTA concerning the design or implementation of the Recommended Proposal as the Group agrees; and

(2) in such manner as the Group agrees, seek views from the local community concerning the design or implementation of the Recommended Proposal.

8.4 The RTA will consider all comments and recommendations made to it by a Local Liaison Group and may adopt any recommendation made to it by a Local Liaison Group.

8.5 The RTA will require the Contractor to comply with, and to ensure compliance by all Subcontractors with, any recommendation from a Local Liaison Group which has been adopted by the RTA subject to any conditions of adoption.

9. Aboriginal Liaison Groups

9.1 The RTA, will prior to the commencement of construction of any particular part of the Recommended Proposal in which aboriginal sites have been identified during or subsequent to the preparation of the 1992 EIS, form an Aboriginal Liaison Group for that part. Aboriginal Liaison Groups will be comprised of the Community and Environment Liaison Officer, a representative of the RTA, a representative of the Contractor, and a representative from each of the following bodies:

(a) the NPWS;

(b) the Metropolitan Local Aboriginal Land Council; and

(c) the Daruk Local Aboriginal Land Council.

9.2 An Aboriginal Liaison Group may:

(a) meet from time to time as the Group agrees; and

(b) (in relation to that part of the Recommended Proposal to which the Aboriginal Liaison Group relates):

(1) make such comments or recommendations to the RTA concerning the design or implementation of the Recommended Proposal as the Group agrees; and

(2) in such manner as the Group agrees, seek views from the local community concerning the design or implementation of the Recommended Proposal.

9.3 The RTA will consider all comments and recommendations made to it by an Aboriginal Liaison Group and may adopt any recommendation made to it by an Aboriginal Liaison Group.

9.4 The RTA will require the Contractor to comply with, and to ensure compliance by all Subcontractors with, any recommendation from an Aboriginal Liaison Group which has been adopted by the RTA subject to any conditions of adoption.

10. School Liaison Groups

10.1 The RTA will, prior to the commencement of construction of any particular part of the Recommended Proposal which is in the RTA's view likely to impact any school along or in the vicinity of the route of the Recommended Proposal, form a School Liaison Group for that part. School Liaison Groups will be comprised of the Community and Environment Liaison Officer, a representative of the RTA, a representative of the Contractor, a representative of the EPA, a representative of each of the schools which are in the RTA's view likely to be impacted and a representative from each of the following bodies when appropriate:

(a) the Department of Public Works;

(b) the Department of School Education; and

(c) the Catholic Education Commission NSW.

10.2 A School Liaison Group may:

(a) meet from time to time as the Group agrees; and

(b) (in relation to that part of the Recommended Proposal to which the School Liaison Group relates) make such comments or recommendations to the RTA concerning the design or implementation of the Recommended Proposal as the Group agrees.

10.3 The RTA will consider all comments and recommendations made to it by a School Liaison Group and may adopt any recommendation made to it by a School Liaison Group.

10.4 The RTA will require the Contractor to comply with, and to ensure compliance by all Subcontractors with, any recommendation from a School Liaison Group which has been adopted by the RTA subject to any conditions of adoption.

11. Community and Environment Liaison Officer

11.1 The Community and Environment Liaison Officer may:

(a) seek views from, and liaise with, the local community concerning the design and implementation of the Recommended Proposal, and may make comments and recommendations concerning the design and implementation of the

Recommended Proposal to any or all of the RTA, the Project Liaison Group, Local Liaison Groups, Aboriginal Liaison Groups and School Liaison Groups; and

(b) seek to resolve any disputes concerning acquisition of dwellings for the Recommended Proposal under the RTA's Special Acquisition Policy for the Recommended Proposal.

11.2 The RTA will ensure that appropriate facilities are available to assist the Community and Environment Liaison Officer in carrying out the Officer's functions.

11.3 The RTA will ensure that the Community and Environment Officer is available for consultation with the local community at all reasonable times, and that the local community is given appropriate information regarding the availability of, and means of access to, the Community and Environment Liaison Officer.

11.4 The RTA will ensure that the Community and Environment Liaison Officer communicates regularly with the Project Liaison Group and with Local Liaison Groups, Aboriginal Liaison Groups and School Liaison Groups in relation to the Recommended Proposal.

12. Compliance with Legislation

General

12.1 The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, all legislation relating to the construction and operation of the Recommended Proposal.

Compliance with Pollution Control Legislation

General

12.2 Without limiting paragraph 12.1, the Contractor will comply with, and ensure compliance by Subcontractors with, the following legislation:

Clean Air Act 1961;
Clean Waters Act 1970;
Dangerous Goods Act 1975 (Division 2 of Part 3);
Environmental Education Trust Act 1990;
Environmental Offences and Penalties Act 1989;
Environmental Research Trust Act 1990;
Environmental Restoration and Rehabilitation Trust Act 1990;
Environmentally Hazardous Chemicals Act 1985;
Noise Control Act 1975;
Ozone Protection Act 1989;
Protection of the Environment Administration Act 1991;
Pollution Control Act 1970;
Radiation Control Act 1990;
Recreation Vehicles Act 1983;
Unhealthy Building Land Act 1990; and
Waste Disposal Act 1970.

12.3 The RTA will inform the Contractor that the EPA has advised the RTA that conditions of pollution control licences or pollution control approvals issued in relation to the Recommended Proposal by the EPA under the legislation referred to in paragraph 12.2 may include requirements:

(a) to implement quality assurance and quality control principles in accordance with Australian Standard 3900; and

(b) to prepare a detailed program to check the environmental impact assessment methods applied and the effectiveness of environmental impact control measures.

12.4 The RTA will require the Contractor:

(a) not to commence or continue the use of any concrete batching plant for the Recommended Proposal without a current pollution control approval; and

(b) to apply for renewals of the approval and to comply with, and to ensure compliance by Subcontractors with, the approval and any renewals.

Noise

12.5 The RTA will inform the Contractor that the EPA has advised the RTA that:

(a) the premises on which the Recommended Proposal is constructed will be scheduled premises under the Noise Control Act 1975 and will require to be licensed under that Act;

(b) the EPA will require any application for, or for renewal of, such a licence to be accompanied by a noise impact statement which includes:

(1) a construction noise assessment; and

(2) proposals for noise mitigating measures during construction;

(c) the EPA will require the proposals for noise mitigating measures during construction:

(1) to include combinations of noise mitigating measures (such as acoustical treatment of houses and noises barriers); and

(2) to have been designed after consideration of sound transmission loss performance within the dominant traffic noise frequency range.

12.6 Without limiting paragraph 12.2, the RTA will require the Contractor:

(a) not to commence or continue construction of the Recommended Proposal without a current pollution control licence under the Noise Control Act;

(b) to apply for renewals of the licence and to comply with, and to ensure compliance by Subcontractors with, the licence and any renewals:

(c) to ensure that any application for, or for renewal of, the licence is accompanied by a noise impact statement which includes the matters referred to in paragraph 12.5(b).

Water

12.7 The RTA will inform the Contractor that the EPA has advised the RTA that:

(a) a pollution control licence under the Clean Waters Act 1970 will be required before there is any discharge to water as a result of the construction of the Recommended Proposal;

(b) the EPA will require any application for, or for renewal of, such a licence to be accompanied by an environmental management plan containing systems addressing the following matters:

(1) control of pollution to water from:

(A) soil erosion;

(B) runoff from cleared areas, spoil areas and construction areas; and

(C) stormwater runoff;

(2) dissipation of energy in runoff so as to reduce its potential for erosion; and

(3) revegetation and drainage of batters so as to stabilise them after cut-and-fill operations.

12.8 Without limiting paragraph 12.2, the RTA will require the Contractor:

(a) not to commence or continue construction of the Recommended Proposal without a current pollution control licence under the Clean Waters Act;

(b) to apply for renewals of the licence and to comply with, and to ensure compliance by Subcontractors with, the licence and any renewals; and

(c) to ensure that any application for, or for renewal of, the licence is accompanied by a management plan addressing the matters referred to in paragraph 12.7(b).

Other Legislation

12.9 Without limiting paragraph 12.1, the RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with:

(a) the National Parks and Wildlife Act 1974;

(b) the Heritage Act 1977; and

(c) the Rivers and Foreshores Protection Act 1948.

13. Environmental Matters

General

13.1 The RTA will require the Contractor:

(a) (during construction of the Recommended Proposal) to implement environmental quality assurance and quality control principles in accordance with Australian Standard 3900; and

(b) (prior to the commencement of construction of the Recommended Proposal) to prepare, and (during construction of the Recommended Proposal) to implement and review, to the EPA's satisfaction an environmental management plan in accordance with those principles.

The Contractor may consult with the Community and Environment Liaison Officer concerning the preparation, implementation and review of the plan. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group concerning the plan.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the plan.

Noise

Matters relating to Construction of the Recommended Proposal

13.2 The RTA will require the Contractor (prior to the commencement of construction of the Recommended Proposal) to prepare, and (during construction of the Recommended Proposal) to implement and review, to the EPA's satisfaction a noise impact statement addressing the matters referred to in paragraph 12.5(b).

The Contractor may consult with the Community and Environment Liaison Officer concerning the preparation, implementation and review of the statement. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and any relevant Local Liaison Group and School Liaison Group concerning the statement.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the statement.

13.3 Without limiting paragraph 13.2:

(a) The RTA will require the Contractor to use the best available techniques not entailing excessive cost, and to minimise and restrict the hours during which construction activities are carried out, with the aim of ensuring that, during construction of the Recommended Proposal, the L_{10} level measured at residential buildings or schools does not exceed 35dBA above background.

(b) In relation to construction of any particular part of the Recommended Proposal, the RTA will require the Contractor to ensure that:

(1) effective noise control equipment is fitted and operational on machinery to be used in the construction of that part of the Recommended Proposal; and

(2) wherever practicable:

(A) in areas with high predicted construction noise, temporary or permanent noise mitigation structures are erected before construction of that part of the Recommended Proposal is commenced; and

(B) quiet piling techniques (such as vibratory piling) are used in the construction of that part of the Recommended Proposal.

13.4 Without limiting paragraph 12.6, the RTA will require the Contractor;

(a) to restrict blasting as far as practicable and, as far as practicable, to remove all rock by mechanical means;

(b) to restrict as far as practicable the use of vibratory compactors to no closer than 15m from residential buildings, and the use of rock breakers to no closer than 25m from residential buildings;

(c) (if blasting is to occur) to carry out a "pre-blasting inspection" of all buildings and structures likely to be affected by the blasting and to arrange for a suitably qualified person agreed to by the RTA to record the material condition of any such building or structure prior to commencement of blasting; and

(d) to obtain and to comply with, and to ensure compliance by all Subcontractors with, all necessary approvals from local Councils and other relevant authorities for the blasting.

13.5 The RTA will, after referring the question to the relevant Local Traffic Committee, determine from time to time and, in any event, before commencement of construction of any particular part of the Recommended Proposal, access points onto the site for, and routes over local streets for, construction vehicles. The aim will be to select access points and routes which minimise environmental and community disturbance and damage to local streets. The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, any determination.

Matters relating to Operation of the Recommended Proposal

13.6 The RTA will require the Contractor, subject to paragraphs 13.7 to 13.10, to ensure that:

(a) noise mitigation structures 6m high are constructed at Epping Heights Public School as recommended in Appendix 42 to this Assessment Report;

(b) noise mitigation structures at the Pennant Hills Road interchange and ramps are constructed as shown in plan labelled "Acoustic Barrier Wall Heights Variation C" in the report which forms Appendix 22 to this Assessment Report;

(c) otherwise, noise mitigation structures are constructed as shown on:

(1) Figures 9.27-9.35 of the Eastern EIS; and

(2) Figures 37.1-37.8 of the Western EIS;

so as to comply with the RTA's Interim Traffic Noise Policy;

(d) subject to paragraph (e), open-graded asphalt is used for all vehicular pavements on the Recommended Proposal (including ramps); and

(e) at the design stage alternative pavement types are evaluated for their ability to reduce noise.

13.7 In relation to the noise mitigation structures for any particular part of the Recommended Proposal, no construction of noise mitigation structures for that part will be commenced until:

(a) the Contractor has developed, in consultation with the RTA and the Community and Environment Liaison Officer, concepts for the design of those noise mitigation structures;

(b) those concepts, as amended (if at all) following consultation with the RTA and the Community and Environment Liaison Officer, have been submitted to the Local Liaison Group and to any relevant School Liaison Group for that part for consideration, comment and recommendation; and

(c) a reasonable opportunity has been given to the Local Liaison Group, and to the School Liaison Group (if any), to consider, comment on and make recommendations concerning those concepts (as amended).

13.8 The RTA will require the Contractor to ensure that, in developing concepts for submission to the RTA and the Community and Environment Liaison Officer, consideration has been given to architectural, visual, landscape and graphic design aspects of the design of the noise mitigative structures as well as to technical and structural aspects.

13.9 The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the Local Liaison Group, and the School Liaison Group (if any), concerning the concepts submitted to the Local Liaison Group and the School Liaison Group (if any).

13.10 Nothing in paragraphs 13.7 to 13.9 will permit the construction of noise mitigation structures which do not comply with the RTA's Interim Traffic Noise Policy.

Water

13.11 The RTA will require the Contractor (prior to the commencement of construction of the Recommended Proposal) to prepare, and (during construction of the Recommended

Proposal) to implement and review, to the EPA's satisfaction an environmental management plan which:

(a) addresses the matters referred to in paragraph 12.7(b); and

(b) is based on estimates of likely volumes of sediment as agreed by the Water Board.

The Contractor may consult with the Community and Environment Liaison Officer concerning the implementation and review of the plan. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group concerning the plan.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the management plan.

13.12 The RTA will require the Contractor to undertake to the EPA's satisfaction:

(a) (prior to the commencement of construction of the Recommended Proposal) baseline stream water quality monitoring at locations likely to be affected by the construction of the Recommended Proposal; and

(b) (during construction of the Recommended Proposal) periodic stream water quality monitoring at those locations.

The Contractor may consult with the Community and Environment Liaison Officer concerning the monitoring. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group concerning the monitoring.

13.13 The RTA will require the Contractor (prior to the commencement of construction of the Recommended Proposal) to develop to the EPA's satisfaction procedures to control discharges to water at sites likely to be affected by flooding and (during construction of the Recommended Proposal) to implement and review those procedures to the EPA's satisfaction.

The Contractor may consult with the Community and Environment Liaison Officer concerning the procedures. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group concerning the procedures.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the procedures.

13.14 The RTA will require the Contractor (prior to the commencement of construction of the Recommended Proposal) to develop to the EPA's satisfaction procedures to monitor changes in the groundwater table due to modifications in the terrain, loss of vegetation and increase in soil erosion and (during construction of the Recommended Proposal) to implement and review those procedures to the EPA's satisfaction.

The Contractor may consult with the Community and Environment Liaison Officer concerning the procedures. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group concerning the procedures.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the procedures.

13.15 Without limiting paragraph 13.11 but subject to paragraphs 13.16-13.18, the RTA will require the Contractor:

(a) to undertake flood level analyses to the RTA's satisfaction for the purposes of the detail design of the Recommended Proposal and to reflect the results of those analyses in the detail designs;

(b) to include in the detail design for the Recommended Proposal to the RTA's satisfaction:

(1) temporary and permanent structures which are designed to remove sediment from runoff from cleared areas, spoil areas and construction areas (including cuttings, unfinished pavement surfaces and inlet headwalls to culverts); and

(2) provisions which reflect the recommendations contained in Part 7 of the Working Paper which forms Exhibit 34 to this Assessment Report:

(c) to ensure that the structures referred to in paragraph (b):

(1) have a total storage capacity of at least $500m^3$ for every hectare of disturbed land in steep terrain;

(2) are, wherever practicable, excavated in original material rather than built up using embankments or other structures;

(d) to include the matters in paragraph (c) in the detail design for the Recommended Proposal;

(e) to ensure that those structures:

(1) are constructed, in relation to any particular part of the Recommended Proposal, immediately following clearance for construction of that part;

(2) are checked for structural damage and the need for cleaning during construction and operation of the Recommended Proposal and, where necessary, repaired and cleaned in consultation with the RTA;

(3) are monitored during construction and operation of the Recommended Proposal for performance and, where necessary, altered or amplified in consultation with the RTA;

(f) to ensure, wherever practicable, that any embankment referred to in paragraph (c)(2) is built in natural formation and clay and is compacted to be as impermeable as possible;

(g) to include the matters in paragraph (f) in the detail design for the Recommended Proposal;

(h) to ensure that concrete V-shaped catch drains are provided above each cutting, and upstream from spoil sites, before the cutting is constructed or the spoil site used;

(i) to include the matters in paragraph (h) in the detail design for the Recommended Proposal;

(j) to include in the detail design for the Recommended Proposal to the RTA's satisfaction:

(1) structures which will control direct and indirect discharge of gross pollutants and road drainage (including flammable and toxic spills) to natural waterways during operation of the Recommended Proposal; and

(2) provision for emergency egress from, and access to, the Recommended Proposal in relation to flammable and toxic spills which occur during the operation of the Recommended Proposal;

(k) to develop, and to implement and review periodically, to the RTA's satisfaction emergency plans in relation to such spills;

(l) to include in those plans methods to the EPA's satisfaction of informing the EPA immediately of the occurrence of any such spills;

(m) to include in those plans methods to the NPWS's satisfaction of informing the NPWS immediately of the occurrence of any such spills;

(n) to include in the detail design for the Recommended Proposal:

(1) structures which will reduce direct and indirect discharge of gross pollutants and road drainage from the toll plazas (including grease and solvents) to natural waterways during operation of the Recommended Proposal; and

(2) provision for the contents of those structures to be pumped out or otherwise removed for proper disposal; and

(o) to ensure that the contents of those structures are periodically or otherwise as appropriate pumped out or otherwise removed for proper disposal.

13.16 In relation to the water pollution mitigation structures for any particular part of the Recommended Proposal, no construction of mitigation structures for that part will be commenced until:

(a) the Contractor has developed, in consultation with the RTA and the Community and Environment Liaison Officer, concepts for the design of those mitigation structures;

(b) those concepts, as amended (if at all) following consultation with the RTA and the Community and Environment Liaison Officer, have been submitted to the Local Liaison Group for that part for consideration, comment and recommendation; and

(c) a reasonable opportunity has been given to the Local Liaison Group to consider, comment on and make recommendations concerning those concepts (as amended).

13.17 The RTA will require the Contractor to ensure that, in developing concepts for submission to the RTA and the Community and Environment Liaison Officer, consideration has been given to architectural, visual, landscape, bushland and fauna aspects of the design of the mitigation structures as well as to technical and structural aspects.

13.18 The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group concerning the concepts submitted to the Local Liaison Group.

Air

Matters relating to Construction

13.19 The RTA will require the Contractor (prior to the commencement of construction of the Recommended Proposal) to develop to the EPA's satisfaction dust suppression techniques during construction of the Recommended Proposal and (during construction of the Recommended Proposal) to implement and review those techniques to the EPA's satisfaction.

The Contractor may consult with the Community and Environment Liaison Officer concerning the techniques. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group concerning the techniques.

13.20 Without limiting the range of techniques, the following techniques will be included among those adopted:

(a) All haul roads and unsealed access roads, and all areas of excavation, construction or other disturbance, will be watered regularly or otherwise as appropriate to suppress dust.

(b) Wheel-washes will be provided for all vehicles leaving any construction zone.

(c) All vehicles loaded with soil or spoil will have their loads covered by tarpaulins or otherwise as appropriate to suppress dust.

(d) All excavated or otherwise disturbed areas will be revegetated as soon as possible after excavation or disturbance.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the techniques adopted.

Matters relating to Operation

13.21 The RTA, in conjunction with the EPA, (prior to the completion of construction of any particular part of the Recommended Proposal) prepare, and (during operation of that part of the Recommended Proposal) implement and review procedures to monitor emissions from the Recommended Proposal of CO, NOx, hydrocarbons, particulate matter, lead, sulphur compounds and benzene.

The RTA may consult with the Community and Environment Liaison Officer concerning the procedures. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group and School Liaison Group concerning the procedures.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the procedures.

13.22 The RTA will require the Contractor to address to the RTA's satisfaction in the detail design for the Recommended Proposal the issue of dispersal of air pollutants at tunnel portals and noise barriers during operation of the Recommended Proposal.

Vegetation and Fauna

13.23 The RTA will require the Contractor (prior to the commencement of construction of the Recommended Proposal) to prepare, and (during construction and operation of the Recommended Proposal) to implement and review, to the RTA's satisfaction a vegetation management plan addressing matters relating to:

(a) the clearance of vegetation and soil for construction;

(b) revegetation of cleared areas following construction;

(c) maintenance and management during and after construction of areas of bushland not cleared for construction;

(d) landscape treatment of the constructed Recommended Proposal.

The Contractor may consult with the Community and Environment Liaison Officer concerning the implementation and review of the plan. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group concerning the plan.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the vegetation management plan.

13.24 The aims of the plan will include the following:

(a) To ensure as far as practicable retention and enhancement of existing landscape elements, and replication of those elements in the landscaping of the Recommended Proposal.

(b) To ensure that areas for clearance for construction are minimised and in any event confined to within the location for the Recommended Proposal as shown on the plans which form Appendix 48.

(c) To ensure, during construction, control over spillage, damage to vegetation and landform, spread of debris and refuse, and storage and access for materials and equipment.

(d) To ensure appropriate methods of clearance of vegetation and soil and the disposal or relocation of cleared vegetation and soil.

(e) To ensure implementation of procedures which reflect the detailed recommendations in Part 8 of the Working Paper which forms Exhibit 29 to this Assessment Report.

(f) To ensure that, during construction and operation of the Recommended Proposal, adequate monitoring of the effects of the Recommended Proposal on flora and fauna occurs.

13.25 Pursuant to these aims, but without limiting the contents of the vegetation management plan, the RTA will require the Contractor, in relation to any particular part of the Recommended Proposal:

(a) to ensure that areas for clearance for construction of that part are minimised and in any event confined to within the location for the Recommended Proposal as shown on the plans which form Appendix 48;

(b) to cause a vegetation identification survey to be carried out prior to clearance for construction of that part, to establish the locations and levels of relevant features such as existing mature trees and edgelines of good quality vegetation;

(c) to include in the detail design for that part surveyed boundaries of the areas to be cleared for construction of that part, to fence bushland areas remaining after clearance, and to prohibit access by the Contractor and Subcontractors to those areas for construction purposes;

(d) to include in the detail design for that part, in relation to the structures referred to in paragraph 13.15(b), provision for those structures to act also as artificial wetlands, and to develop designs for such structures in consultation with the NPWS;

(e) to include in the detail design for that part provision for underpasses and culverts designed to facilitate the movement of fauna beneath the Recommended Proposal, and to develop designs for such structures in consultation with the NPWS;

(f) (prior to the commencement of construction of that part of the Recommended Proposal) to prepare, and (during construction of that part of the Recommended Proposal) to implement and review, to the RTA's satisfaction procedures which:

(1) ensure control over spillage, damage to vegetation and landform, spread of debris and refuse, and storage and access for materials and equipment, and ensure that no fuel is stored on any construction site for the Recommended Proposal;

(2) ensure appropriate methods of clearance of vegetation and soil and the disposal or relocation of cleared vegetation and soil;

(3) reflect the detailed recommendations in Part 8 of the Working Paper which forms Exhibit 29 to this Assessment Report; and

(4) ensure that appropriate action is taken to deal with any native animals located or disturbed during construction;

and to include those procedures in the vegetation management plan;

(g) (prior to the commencement of construction of that part of the Recommended Proposal) to prepare, and (during construction of that part of the Recommended Proposal) to implement and review, to the RTA's satisfaction procedures to ensure the protection of forest floor under bridges during construction and to include those procedures in the vegetation management plan;

(h) to develop the procedures referred to in paragraph (g) in consultation with the NPWS;

(i) (prior to the commencement of construction of any particular part of the Recommended Proposal) to prepare, and (during construction of that part of the Recommended Proposal) to implement and review, to the RTA's satisfaction a landscaping plan for the Recommended Proposal which:

(1) reflects the detailed recommendations in Part 8 of the Working Paper which forms Exhibit 29 to this Assessment Report; and

(2) includes procedures for maintenance (and, where necessary, replacement) of landscaping after planting;

(j) (prior to the commencement of construction of any particular part of the Recommended Proposal) to prepare, and (during construction of that part of the Recommended Proposal) to implement and review, to the RTA's satisfaction procedures to ensure monitoring of the implementation, and reporting on the success of the implementation, of those procedures referred to in paragraphs (f), (g) and (i).

Aboriginal Heritage

13.26 Prior to commencement of construction of any part of the Recommended Proposal, the RTA will appoint an archaeologist qualified in matters of aboriginal archaeology:

(a) to produce a report to verify conclusions in the 1992 EIS as to the location and affectation of sites of significance for aboriginal heritage; and

(b) to produce, in consultation with the NPWS and the Metropolitan Local Aboriginal Land Council and the Daruk Local Aboriginal Land Council, a plan of management for sites of significance identified in the 1992 EIS or that report.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the plan of management.

13.27 Without limiting paragraph 13.26, the RTA will require the Contractor to produce, prior to commencing construction in the vicinity of Gilda Street or Bundarra Reserve:

(a) a report as to the location and affectation of sites there of significance for aboriginal heritage; and

(b) in consultation with the NPWS and the Metropolitan Local Aboriginal Land Council, a plan of management for sites of significance identified in that report.

European Heritage

13.28 The RTA will require the Contractor to appoint, prior to commencement of construction of any part of the Recommended Proposal, a suitably qualified person:

(a) to produce a report to verify conclusions in the 1992 EIS as to the location and affectation of sites of significance for European heritage; and

(b) to produce a plan of management for sites of significance identified in that report.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the plan of management.

Soil Contamination

13.29 The RTA will require the Contractor:

(a) (prior to the commencement of construction of any particular part of the Recommended Proposal) to undertake to the RTA's satisfaction an investigation to identify any contaminated soil;

(b) (prior to the commencement of construction of that part of the Recommended Proposal) to prepare, and (during construction of that part of the Recommended Proposal) to implement and review, to the RTA's satisfaction a management program for any contaminated soil discovered as a result of the investigation; and

(c) to dispose of, or otherwise deal with, to the RTA's satisfaction, any contaminated soil discovered as a result of the investigation.

Monitoring

13.30 The RTA will require each of the procedures or plans referred to in paragraphs 13.1, 13.11, 13.13, 13.14, 13.19, 13.23, 13.26 and 13.28 to contain to the RTA's satisfaction provisions to ensure monitoring of the implementation, and reporting on the success of the implementation, of those plans and procedures. The RTA will ensure that, in developing these provisions, consideration is given to:

(a) the framework contained in Tables 53-55 of the Western EIS; and

(b) the guidelines for monitoring set out in the RTA's Interim Traffic Noise Policy.

14. Acquisition

14.1 The RTA will ensure that acquisition of properties for the Recommended Proposal occurs in accordance with:

(a) the RTA's Land Acquisition Policy; and

(b) the RTA's Special Acquisition Policy for the Recommended Proposal. That policy is that, where a property zoned Residential 2(a) shares a boundary with the location for the Recommended Proposal as shown on the plans which form Appendix 48, or is separated from that boundary by a narrow low-trafficked road, and where the property was purchased or developed prior to March 1987, the RTA is prepared to acquire the property.

15. Access

15.1 The RTA will signalise the junction of Oakland Avenue and Windsor Road.

15.2 The RTA will liaise with the relevant local Council or Councils and investigate:

(a) the provision of a bus turning facility within the Linton Street/Canyon Road/Oakland Avenue/Forest Road precinct;

(b) the provision of a new road linking Livingstone Avenue with Windsor Road opposite Oakland Avenue at a signalised intersection;

(c) the provision of a new road linking Woodland Street with Windsor Road opposite Russell Street at a signalised intersection; and

(d) the provision of a pedestrian connection:

(1) between Linton Street and Canyon Road adjacent to the eastbound on-load ramp; and

(2) from Canyon Road to Windsor Road.

15.3 The RTA will require the Contractor to provide to the RTA's satisfaction temporary access facilities during construction.

15.4 Without limiting paragraph 13.15(j), the RTA will require the Contractor:

(a) to include in the detail design for the Recommended Proposal to the RTA's satisfaction provision for emergency egress from, and access to, the Recommended Proposal in relation to emergencies which may occur during the operation of the Recommended Proposal; and

(b) to restrict the number of access and egress points as far as possible with the aim of minimising intrusion into bushland areas;

and in this regard to consult with the police, fire brigade, and State Emergency Services and other relevant authorities.

15.5 Without limiting paragraph 13.15(k), the RTA will require the Contractor to develop, and to implement and review periodically, to the RTA's satisfaction emergency plans including emergency plans in relation to:

(a) spills or releases of dangerous goods from the Recommended Proposal;

(b) containment of fire; and

(c) evacuation in the event of fire.

15.6 The RTA will consult with the Bicycle Institute of New South Wales during the detail design stage concerning, in particular, access for bicyclists. The RTA will require the Contractor to ensure that any grates placed in the gutters for the Recommended Proposal are suitable for bicycles and are satisfactory to the RTA in this regard.

15.7 Without limiting paragraph 13.5, the RTA will liaise with local Councils with the objective of discouraging through traffic from using local streets.

15.8 The RTA will require the Contractor to ensure that construction activity for the Recommended Proposal does not interfere with traffic capacity on arterial roads.

15.9 The RTA will require:

(a) the closure of Sutherland Road at its current junction with Somerset Street;

(b) the provision to the RTA's satisfaction of emergency and pedestrian access and egress under the Recommended Proposal to Sutherland Road north of the Recommended Proposal.

16. Lighting

16.1 The RTA will require the Contractor (prior to the commencement of construction of the Recommended Proposal) to prepare, and (during construction of the Recommended Proposal) to implement and review, to the RTA's satisfaction a lighting management plan for the Recommended Proposal which provides for lighting at access ramps, merging areas (including toll plazas) and bus stops only.

The Contractor may consult with the Community and Environment Liaison Officer concerning the preparation, implementation and review of the plan. The Community and Environment Liaison Officer may seek views from the Project Liaison Group and the relevant Local Liaison Group concerning the plan.

The RTA will require the Contractor to comply with, and to ensure compliance by Subcontractors with, the plan.

16.2 The RTA will require the plan referred to in paragraph 16.1 to contain provisions addressing the control of headlight glare.

17. Utilities

17.1 The RTA will require the Contractor to liaise with all relevant authorities for the protection and relocation of any services required as a result of the construction of the Recommended Proposal.

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Letter from RTA to Stephenson 5/3/93

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Letter from Stephenson to RTA 12/3/93

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Property Acquisition Plan

LIST OF EXHIBITS

Exhibit 1

1989 EIS

Exhibit 2

Report of 1989 Commission of Inquiry

Exhibit 3

Terms of SMEC's and Manidis Roberts' appointment

Exhibit 4

Eastern EIS

Exhibit 5

Western EIS

Exhibit 6

"Aboriginal Heritage Archaeology"

by Haglund & Associates

Exhibit 7

"Air Quality Assessment"

by Peter W Stephenson & Associates

Exhibit 8

"Community Consultation Program"

by Issues Australia Pty Limited

Exhibit 9

"Engineering Design"

by Maunsell Pty Limited

Exhibit 10

"European Heritage Survey"

by Conybeare Morrison & Partners

Exhibit 11

"Flora and Fauna Evaluation (Bushland Effect and Management)"

by Mount King Ecological Surveys

Exhibit 12

"Hazard and Risk Assessment"

by RiskCorp Australia

Exhibit 13

"Landscape and Visual Impact"

by Bruce MacKenzie and Associates Pty Limited

Exhibit 14

"Noise Assessment" by Challis and Associates Pty Limited.

Exhibit 15

"Social Impact Assessment" by Carolyn Stone, Phillips Fox.

Exhibit 16

"Transport and Traffic Analysis" (in 5 volumes)

by Denis Johnston & Associates Pty Limited.

Exhibit 17

"Transport Options: Analysis of Community Voice Feedback Form No 2"

by Quantum Market Research.

Exhibit 18

"Water Catchment and Soil Management"

by R W Roberts & Associates.

Exhibit 19

"Air Quality"

by Peter W Stephenson & Associates

Exhibit 20

"Assessment of Aboriginal Heritage Aspects"

by Haglund, L.

Exhibit 21

"Civil Engineering"

by Snowy Mountains Engineering Corporation Ltd

Exhibit 22

"Community Consultation"

by Manidis Roberts Consultants

Exhibit 23

"Dispersion of Emissions: Toll Plaza"

by Peter W Stephenson & Associates

Exhibit 24

"Existing Traffic Conditions"

by Denis Johnston & Associates with Stapleton & Hallam

Exhibit 25

"Feasibility of Utilising the Castlereagh

Expressway Reservation for Public Transport Services"

by Denis Johnston & Associates

Exhibit 26

"Flora and Fauna Evaluation"

by Mount King Ecological Surveys

Exhibit 27

"Hazard & Risk Study of Dangerous Goods Transportation"

by Riskcorp Australia

Exhibit 28

"Land Use and Community Impact"

by Manidis Roberts Consultants

Exhibit 29

"Landscape & Visual Impact"

by Bruce Mackenzie & Associates

Exhibit 30

"Noise Investigation"

by Wilkinson Murray Griffiths

Exhibit 31

"Noise Investigation: Assessment of Tollway"

by Wilkinson Murray Griffiths

Exhibit 32

"Public Transport: Existing Conditions Report"

by Denis Johnston & Associates

Exhibit 33

"Public Transport: Options Investigations"

by Denis Johnston & Associates

Exhibit 34

"Soil Erosion and Sedimentation Issues"

by Rod Roberts & Associates

Exhibit 35

"Traffic Analysis of Toll Options"

by Denis Johnston & Associates

Exhibit 36

"Transport & Traffic Analysis"

by Denis Johnston & Associates

Exhibit 37

"Economic Evaluation"

by Applied Economics & Manidis Roberts Consultants

Exhibit 38

"Metropolitan Strategy Assessment"

by MSJ Keys Young Planners Pty Limited

Exhibit 39

Brochure entitled "North West Transport Link Lane Cove River to Old Windsor Road Manidis Roberts Consultants Snowy Mountains Engineering Corporation Ltd Maunsell Pty Limited".

Exhibit 40

Brochure entitled "North West Transport Links (East) Environmental Impact Statement Summary Prepared for the Roads and Traffic Authority of NSW Sydney Western Region by Maunsell Pty Limited April 1992".

Exhibit 41

Brochure entitled "Environmental Impact Statement Summary North West Transport Link Pennant Hills Road to Old Windsor Road Roads and Traffic Authority Manidis Roberts Consultants Snowy Mountains Engineering Corporation Ltd 1992".

Exhibit 42

Dames & Moore Summary