



NEW SOUTH WALES

Minister for Transport
Minister for Roads

Legislative Council
 GENERAL PURPOSE
 STANDING COMMITTEES

31 MAR 2000

RECEIVED

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The Hon Richard Jones MLC
 Chair
 General Purpose Standing Committee No.5
 Parliament House
 Macquarie Street
 SYDNEY NSW 2000

Dear Mr Jones

I have attached for your information the Government's response to the recommendations of General Purpose Standing Committee No.5 concerning the M5 East motorway.

The majority of recommendations of the Committee report are either already being implemented or will be implemented by the Roads and Traffic Authority (RTA). The Government welcomes the Committee's wish to ensure appropriate monitoring of the project and the formal response reflects this.

With respect to Recommendation No.8, the Government cannot support this proposal. The RTA's strong view is that there is no technology available that could be fitted to the M5 East tunnel to treat all vehicle emissions. In these circumstances, the model proposed by the committee would be a costly but ultimately ineffective process.

However, I believe we should continue to look to the possibility that such a system might exist in the future. There is a need for further examination of emerging world's best practice in the field of tunnel ventilation, given the community demand for further road tunnels in Sydney.

The RTA will organise an international workshop on tunnel ventilation for later this year, and will invite community representatives to participate in the workshop to allow an informed discussion of tunnel ventilation issues to continue in Sydney. I will be happy to forward details of the proposed workshop to you once this is finalised, to ensure that the committee has an opportunity to participate.

I would like to thank you and the other members of the committee for your report.

Yours sincerely

A handwritten signature in black ink, appearing to read 'C. Scully'.

CARL SCULLY
 Minister for Transport
 Minister for Roads

RESPONSE
TO RECOMMENDATIONS OF THE INQUIRY
ON THE M5 EAST VENTILATION STACK

Recommendation 1

The Committee recommends that the NSW Government complete the development of the draft subregional air quality management plan, for the area surrounding the motorway, by the 30 June 2000. The Government agencies responsible for the development of the plan should consult with the Community Consultative Committee, established in relation to the ventilation stack, as well as relevant local councils, in the formulation of a draft plan, which should then be released for public comment and input. The plan must have specified targets, goals, dates for achievement, identified sources of funding and clear responsibilities for implementation.

Response

Pursuant to Condition 80 of the Department of Urban Affairs and Planning's (DUAP) conditions of approval, the Roads and Traffic Authority (RTA) is preparing a process for the development of the Subregional Air Quality Plan (SAQP). An outline of the process and scope of the Plan will be submitted to DUAP concurrently with the reports on air quality modelling and community consultation regarding the design of the ventilation stack. The SAQP will be developed in consultation with EPA, DOT, Dept of Health and DUAP, and local councils.

Recommendation 2

The Committee recommends that at six monthly intervals from 30 June 2000 an information paper be published outlining the steps taken to implement the draft air quality management plan, focussing on the specified goals and dates for achievement.

Response

Agreed, the RTA will prepare the required information paper.

Recommendation 3

The Committee recommends that six months before the conclusion of the five year term during which the Roads and Traffic Authority is required to provide \$0.5 million per year funding for the implementation of the air quality management plan, a review of funding sources and implementation of the plan be commissioned and published.

Response

Agreed.

Recommendation 4

The Committee recommends that in any future discussion of the impact of the proposed ventilation stack upon air quality, the Roads and Traffic Authority and the Environment Protection Authority adopt the statements of the Minister for the Environment and the Minister for Urban Affairs and Planning that it is intended that emissions from the stack and tunnel should not result in any exceedences of air quality goals in their vicinity, and not suggest that up to five exceedences per year are allowable within these goals, excluding natural and extraordinary disasters.

Response

Noted. The ventilation system for the M5 East project should not result in additional exceedences of the stringent air quality goals set for the project. DUAP and EPA recognised that exceedences of air quality goals occur from time to time across the entire metropolitan area as a result of occasional regional events in setting the Conditions of Approval for the stack.

Recommendation 5

The Committee recommends that the Environmental Planning and Assessment Act be amended to prevent a determining authority from approving a development with modifications, which have any significant impact upon the environment or which have a significant impact upon a different group of citizens to those affected by the proposed development, unless those modifications have been exhibited for public comment. The modifications must be subject to adequate public consultation before the proposal is determined.

Response

Current provisions within the Environmental Planning & Assessment Act require a determining authority to consider modification in respect of an activity. Section 112 (4) (b) enables a determining authority to modify an activity where such a modification would eliminate or reduce the detrimental effect of the activity on the environment. Section 115BA requires a Proponent to undertake a formal modification process (including formal public consultation) if a modification is inconsistent with an approval granted by the Minister for Urban Affairs and Planning.

Recommendation 6

The Committee recommends that no matter what form of tunnel ventilation or emission control is finally implemented, the Road and Traffic Authority, in conjunction with the Department of Health, fund an epidemiological study of the health of the community in the area of any tunnel emissions, commencing this financial year and continuing for 5 years after the commencement of operation of the motorway, or as long as the Department of Health recommends. The technique and operation of the study should be approved by the Department of Health, with results published on an annual basis.

Response

The Department of Health has advised that it is questionable whether a study, as contemplated by the Inquiry would contribute meaningful data to current knowledge of the health impacts of vehicle emissions.

The Department of Health will continue to examine links between air pollutants and general health through ongoing studies into air pollution and health.

Recommendation 7

The Committee recommends that the Roads and Traffic Authority, when investigating international developments in tunnel emission treatment systems as required by the condition of approval number 79 for M5 East Motorway, not only survey the relevant literature but directly contact the suppliers of such equipment.

Response

Noted. In response to evidence produced at the inquiry hearing and pursuant to Condition 79 of the approval conditions for the project, the RTA has included interviews with international experts in tunnel ventilation and suppliers of treatment equipment in its ongoing review of international practices. In addition, the RTA has recently sent senior representatives to meet with a number of European road authorities, including Norway, to specifically discuss tunnel ventilation and air quality management practices.

This will continue in future reviews as required under Condition 79. A Consultative Committee will be established to oversee the subsequent reviews of international practice, comprising representatives from the Environment Protection Authority, Department of Health and the Department of Urban Affairs and Planning and the RTA.

Recommendation 8

The Committee recommends that the Roads and Traffic Authority immediately call for international expressions of interest for the installation of world's best treatment processes for particulate and nitrogen dioxide removal in the M5 East Motorway tunnel. The NSW Government should establish an independent panel of experts, including a community representative, to evaluate and report on the submissions which have been received by 31 March 2000. The report should identify accurate and if possible final costs for the installation of such equipment.

The Committee recommends that the Roads and Traffic Authority continue with construction work on the stack in a manner which can incorporate and make provision for alternative ventilation systems which might be recommended as a result of the assessment of responses to the call for international expressions of interest.

The Committee further recommends that following the publication of the report identified above, a decision be made to either:

- cease all further work on the ventilation stack and install pollution control equipment in the road tunnel itself; or*
- install pollution control equipment in addition to the ventilation stack.*

Response

Noted.

AIR QUALITY & THE M5 EAST

The current tunnel ventilation system proposed for the project is required to meet New South Wales' stringent air quality goals, formulated by the Environment Protection Agency, by the approval authority, the Department of Urban Affairs and Planning.

The RTA is already required as a condition of approval of the M5 East project to ensure that the tunnel ventilation system design allows for the fitting of additional pollution control equipment if such equipment becomes viable and necessary in the future.

The recently completed physical modelling for the M5 East stack has shown that the previously predicted levels of emissions from the stack are overestimated by a minimum factor of 2.5. Physical modelling is a more accurate method of air quality modelling than numerical modelling. There is a greater margin of compliance with the air quality goals than has been previously estimated.

It should be noted that the tenderers for the project were free to include non-mechanical ventilation systems as part of their proposals. The successful tenderer, the Baulderstone-Hornibrook-Bilfinger Berger has extensive experience in tunnelling, including tunnelling in Europe. They selected a mechanical system.

EMISSION TREATMENT SYSTEM

An extensive investigation by the RTA, including a detailed analysis of the evidence put before the inquiry, personal inspection of international practice by senior RTA officers and direct contact with the manufacturers of such tunnel ventilation equipment, has concluded that the current tunnel treatment system is consistent with international practice. The RTA's assessment is that there is no system currently available that would remove the need for an emission stack, for a project such as the M5 East.

The RTA notes that the costs and performance of treatment equipment, presented to the Inquiry, was based on generalised information provided by manufacturers of the equipment. The RTA notes that robust performance data for continuous removal of fine particles is limited. Most significantly, no system is known to be operationally proven for treating the gaseous component of emissions. The removal of particles by

treatment systems is typically assessed by weight of particles removed and fails to indicate the proportion of the finer particles versus the heavier, larger particles.

Advice from the Norwegian Public Roads Administration is that none of the electrostatic precipitators in Norwegian tunnels are operated continuously. In the Granfoss Tunnel the electrostatic precipitators were only installed in the uphill tunnel where visibility is an issue due to particulates produced from the heavy vehicles under load up the hill. It is noted that these conditions are distinguishable from those on the M5 East project. It is also noted that electrostatic precipitators do not address the gaseous components of air pollution.

AN INTERNATIONAL WORKSHOP

In recognition of the need to provide more detailed and authoritative information about the management of road tunnel emissions from overseas and relative to the Sydney environment the RTA will host an international workshop on the management of road tunnel emissions in 2000.

International experts experienced in the design, management and monitoring of road tunnel emissions will be invited. Community groups will be invited to submit questions in writing that will be addressed by a panel of speakers.

The RTA will also proceed with a peer review of the tunnel ventilation design by experienced international experts to ensure tunnel ventilation systems continue to meet the world's best practice.

CLEANER VEHICLES, CLEANER AIR

The NSW Government is committed to improving air quality for all NSW residents. The State and Federal Governments are undertaking significant measures to improve vehicle emissions over the next several years. These improvements will further improve the air quality performance of the proposed M5 East ventilation system.

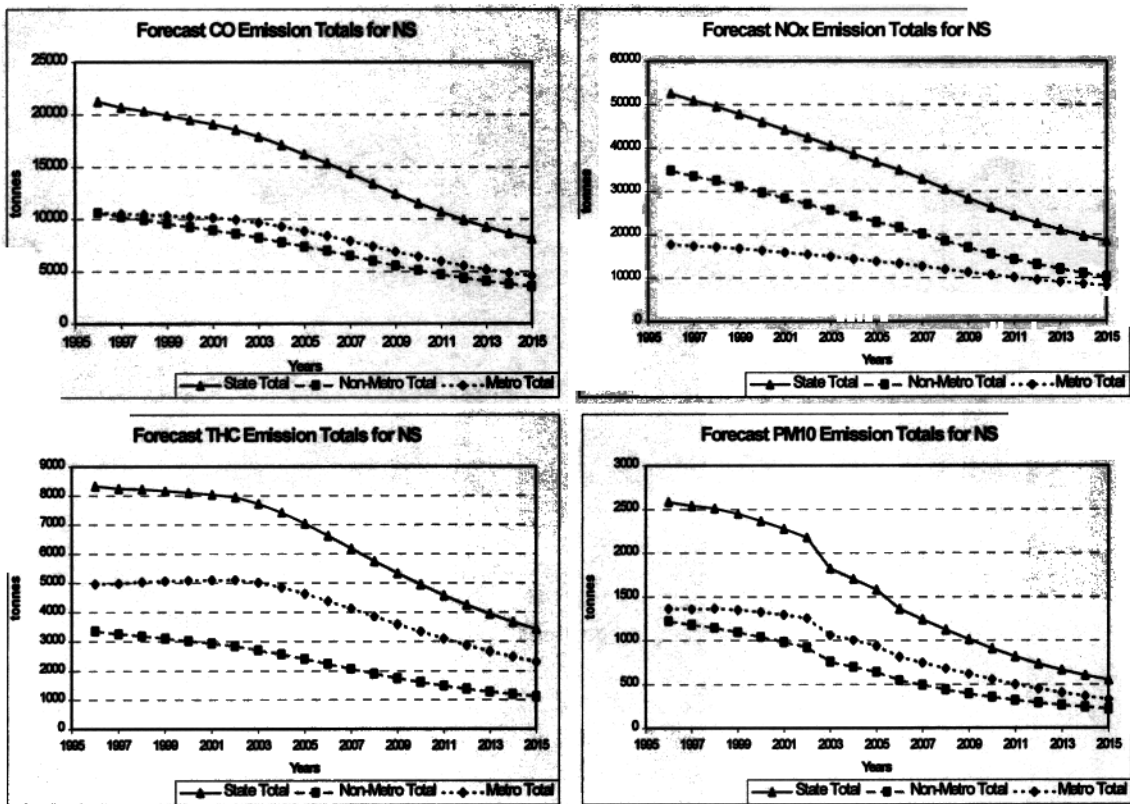
The Federal Government "Measures for a Better Environment" package which includes the introduction of European vehicle standards for light and heavy vehicles, and the reduction of sulphur in diesel fuel, will result in substantial reductions of pollutants in Sydney by 2015, as detailed below. Expected increases in vehicle ownership and usage are included in the assumptions on which the predictions are based.

The commencement of Phase 2 of the NSW Government's Vehicle Inspection and Maintenance Program in the Sydney region will reduce emissions in the intervening period from 2001, notwithstanding growth in vehicle ownership and usage.

The following extracts from the report, *The Australian Diesel Fleet: Existing Vehicle Characteristics and the Modelling of Transport Demand, Vehicle Populations and Emissions*, prepared for the National Environment Protection Council and released in January 2000, details the predicted substantial reductions of pollutants as a result the "Measures for a Better Environment" scenario. These measures are already in the process of being implemented. The reductions presented in this report are consistent

with the reductions in pollutants from the Austrian heavy vehicle fleet as representative of the improvement in the western European heavy fleet, that was presented to the Inquiry by the RTA, in Annexure 3 of the RTA submission.

Forecast emissions in NSW for Scenario III; ("Measures for a Better Environment") are shown in the graphs below and indicate a substantial reduction in all pollutants, despite the projected increase in travel demand. The greatest percentage decrease is for particulates, the sharp drop in particulate emissions in 2003 and 2006 being due to the introduction of lower amounts of sulphur in diesel at this time.



EMISSIONS FOR NSW, 1995 TO 2015 , SCENARIO III

The following table indicates just what vehicle types are contributing to the total emission load of each pollutant in metropolitan NSW. The percentage contributions of each vehicle type in both 1996 and 2015 are given so that any change can be identified.

CONTRIBUTION TO EMISSIONS BY VEHICLE TYPE, METROPOLITAN NSW, 1996 AND 2015 (% OF TOTAL)

Vehicle Type	CO		Nox		HC		PM10	
	1996	2015	1996	2015	1996	2015	1996	2015
Cars	2.5	5.3	0.8	2.2	1.4	1.8	3.4	7.7
LCV's	5.5	10.6	2.8	7.1	2.7	3.9	7.9	11.4
Rigid Trucks	61.2	56.3	53.9	34.6	75.3	75.0	59.7	55.2
Artic. Trucks	20.2	18.4	26.5	39.7	9.8	7.2	19.4	17.0
Buses	10.6	9.4	15.9	16.5	10.8	12.1	9.6	8.7
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Tables in this report

Rigid trucks are seen to contribute the major proportion of all pollutants in metropolitan NSW in the year 2015 except for NOx. Despite a substantial increase in travel demand for articulated trucks their percentage contributions to total pollutant emissions decrease except for NOx. Both cars and LCV’s increase their share of pollutants in 2015, mainly because of increasing travel demand but also because of the growing percentage of diesel vehicles for these vehicle types.

The changes in annual metropolitan emissions from the diesel fleet for Sydney over the forecast period from 1996 to 2015 are shown in the following table.

Significant reductions in emissions of 40 – 75% are expected from the diesel vehicle fleet over this period despite a significant growth in vehicle numbers and total annual distance travelled. The major reason for the decrease in all emissions is the better vehicle emission performance of the newer vehicles coming into the diesel fleet and the retirement of the older, poorly performing vehicles.

It should be remembered that emissions from diesel vehicles contribute about 2, 20, 4 and 73% respectively of the total emissions of CO, NOx, HC and PM (EPA 1998). Any reduction in CO and HC diesel emissions will not, therefore significantly affect the total emissions for these two pollutants, which will be influenced mainly by changes in the petrol vehicle fleet.

On the other hand, diesel emissions contribute the greatest percentage (73%) of particulate emissions and the report, *The Australian Diesel Fleet: Existing Vehicle Characteristics and the Modelling of Transport Demand, Vehicle Populations and Emissions*, has found that particulates have the greatest percentage reduction of all pollutants between 1996 and 2015 (between 65 and 75%). The forecasts therefore indicate that there will be a significant reduction in overall emissions and ambient levels of particulates in Australian metropolitan areas.

PROJECTED CHANGES IN ANNUAL METROPOLITAN FLEET**EMISSIONS - 1995 TO 2015, SCENARIO III**

	EMISSION FORECASTS (TONNES)			
	CO	NOX	THC	PM10
SYDNEY 1996	10622.4	17752.9	4975.5	1362.2
SYDNEY 2015	4548.0	8276.1	2306.9	327.7
NET REDUCTION (%)	57	53	54	76

Recommendation 9

The Committee recommends that air quality data reports, both before and after commencement of the motorway be made available 'real time' on the Internet so that those members of the population who are vulnerable to air pollutants may more easily become aware of any exceedences of air quality goals and take appropriate action. Further, it is recommended that air quality reports be published monthly, including on the Internet.

Response

The EPA publishes a daily pollution index for the information of the Sydney community. Provision of additional real-time data excludes the opportunity for quality review of the data to provide assurance that the data is accurate and valid. The response to Recommendation 10 addresses the commitment to ensure that reliable data is made available promptly to the community.

Recommendation 10

The Committee recommends that the Department of Urban Affairs and Environment, in consultation with the Community Consultative Committee, at six monthly intervals review all the sources of information, as identified in Condition 74, to assess whether pollution control equipment should be installed on the emission stack. The results of these reviews should be made public no later than six weeks after the end of the six month period, with reasons stated for the conclusions reached.

Response

The EPA advises that, air quality information would be made available to the community within 10 weeks after the end of the six-month review period. At the end of the first year, providing that there is no adverse trend in air quality, the reviews will thereafter be undertaken on an annual basis.

Recommendation 11

The Committee recommends that the Roads and Traffic Authority, in consultation with the Community Consultative Committee, prior to the operation of the motorway, develop a contingency plan for instances of air quality exceedences at the Turella site.

This contingency plan must be approved by the Minister for Urban Affairs and Planning and made publicly available.

Response

Following community representations, a Working Party was formed in September 1999 to develop just such a contingency plan. Prior to implementation, any such contingency plan would require the approval of the Minister for Urban Affairs and Planning.

Recommendation 12

The Committee recommends that the Department of Urban Affairs and Planning release any risk assessment done of the impact of the stack on the implementation of urban consolidation policies in the vicinity of the stack. If no such assessment has been undertaken to date, the Committee recommends that an open and rigorous risk assessment of the impact of the ventilation stack on urban consolidation policies be performed without delay, with the results to be published.

Response

DUAP advises as follows: "It is anticipated that the relevant health goals will be met by the design and management of the stack proposed by the RTA. Current urban consolidation levels near the stack would not affect the dispersion characteristics of the M5 East ventilation system.

"For any future ventilation stack proposals, it would be the responsibility of the Proponent (ie the RTA) to identify likely air quality impacts on known urban consolidation areas."

THE HON CARL SCULLY MP

Minister for Transport

Minister for Roads



MEDIA RELEASE

Friday 31 March 2000

GOVERNMENT RESPONDS TO M5 EAST REPORT

The NSW Government will undertake a series of measures towards better air quality following recommendations of the Parliamentary Standing Committee Inquiry into the M5 East Ventilation Stack, the Minister for Transport, Mr Carl Scully, said today.

Issuing the Government's formal response to the committee's 12 recommendations, Mr Scully said the Government had adopted many of the committee's recommendations.

In addition, the State Government will host a major international workshop in Sydney to canvass international practices and techniques in air quality management.

Mr Scully said the workshop, to be held in June/July, would provide an opportunity for the Sydney community to hear firsthand about overseas experience in dealing with air quality issues including road tunnel ventilation.

"The standing committee has made a useful contribution to the continuing debate about air quality and a number of important measures will be undertaken by the RTA as a result of the committee's recommendations," Mr Scully said.

"I welcome the committee's support for the project's sub-regional air quality plan, which will look at measures to improve south western Sydney's air quality generally. This plan will be developed in close conjunction with the EPA, DUAP, the Departments of Transport and Health and local councils."

Measures to improve monitoring and planning for the project include:

- A public report every six months on the progress of the air quality management plan for the M5 East and the surrounding area.
- Publication of air quality monitoring data for the M5 East ventilation stack every six months to ensure the community is kept informed on a regular basis.
- Development of a contingency plan to operate in the event of emissions beyond air quality goals.
- A major review of the RTA's air quality plan towards the conclusion of the construction of the M5 East tunnel to ensure it is fully funded and effective in improving air quality.

Mr Scully said the RTA did not agree with the committee's view that there is a technology available that could be fitted in to the M5 East tunnel to treat all vehicle emissions.

"The RTA has extensively researched this issue and has concluded that such technology does not exist which would be effective in a road tunnel as busy as the M5 East," Mr Scully said.

"As recently as this month, RTA officials visited France to investigate air quality technology and practices. This trip confirmed the RTA's earlier findings.

“The RTA is confident that the existing design will meet the stringent air quality goals set by the Environmental Protection Authority and enforced by the Department of Urban Affairs and Planning.

“These goals are the toughest ever imposed on an Australian road project.

“Tunnel Engineering Consultants, one of Europe’s leading consultancies on tunnel construction, will independently assess the tunnel ventilation system to ensure that it is appropriate. The results of this review will be assessed by the Department of Urban Affairs and Planning as part of the approval process.

“I want to make it clear, however, that the Government will continue to consider additional ways to treat vehicle emissions from the M5 East.

“This process will begin with the international workshop hosted by the NSW Government, which will provide a forum for the community’s questions to be answered by an expert independent panel. The committee will also have the opportunity to participate in this process.”

The Government’s response to the committee’s recommendations also contains commitments to:

- Directly consult manufacturers of air quality treatment systems in the future, as part of continuing reports to the local community by the RTA.**
- Publish a review of the need to install air treatment system on a regular basis.**

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