

REPORT OF PROCEEDINGS BEFORE

GENERAL PURPOSE STANDING COMMITTEE No. 2

**INQUIRY INTO HEALTH IMPACTS OF AIR POLLUTION IN
THE SYDNEY BASIN**

At Sydney on Wednesday 16 August 2006

The Committee met at 9.00 a.m.

PRESENT

The Hon. P. Forsythe (Chair)

The Hon. A. Catanzariti
The Hon. Dr A. Chesterfield-Evans
The Hon. K. F. Griffin
Ms S. P. Hale
The Hon. M. J. Pavey
The Hon. C. M. Robertson

CHAIR: Welcome to the first public hearing of an inquiry by General Purpose Standing Committee No. 2 into the health impacts of air pollution in the Sydney Basin. Before we commence I would like to make some comments about aspects of the Committee's inquiry and conduct of this hearing. The Committee has previously resolved to authorise the media to broadcast sound and video excerpts of its public proceedings. Copies of guidelines governing broadcast of the proceedings are available from the table by the door. In accordance with Legislative Council guidelines for the broadcast of proceedings, a member of the Committee and witnesses may be filmed or recorded. People in the public gallery should not be the primary focus of any filming or photographs.

In reporting the proceedings of this Committee the media must take responsibility for what they publish or what interpretation is placed on anything that is said before the Committee. Witnesses, members and their staff are advised that any messages should be delivered through the attendants or the Committee Clerks. I also advise that under the standing orders of the Legislative Council any documents presented to the Committee that have not yet been tabled in Parliament may not, except with the permission of the Committee, be disclosed or published by any member of such committee or by any other person.

The Committee prefers to conduct its hearings in public, however, the Committee may decide to hear certain evidence in private if there is a need to do so. If such a case arises I will ask the public and the media to leave the room for a short period. Finally, could all people please turn off their mobile phones for the duration of the hearing?

CHRISTOPHER RAY EISER, Manager, Atmospheric Science, Department of Environment and Conservation, sworn and examined:

SALLY BARNES, Acting Director-General, Department of Environment and Conservation, and

NIGEL ROUTH, Manager, Air Policy Section, Department of Environment and Conservation, affirmed and examined:

CHAIR: I welcome our first witnesses. Ms Barnes, I understand you wish to make an opening statement. In view of the number of witnesses we have to get through today and the short period of time, could you, if at all possible, keep your statement brief please?

Ms BARNES: Thank you very much for having us present at the inquiry. Air quality in Sydney has improved significantly over the last 20 or so years. We have seen major drops in emissions of lead, carbon monoxide, sulphur dioxide and nitrogen oxide. These improvements have been mainly through strong programs to reduce air pollution from industry, through reduction of emissions in motor vehicles and through tackling a range of other sources from wood heaters through to backyard burning. This is even more impressive when it is against a backdrop of increasing population growth in the Sydney Basin, growing economic activity and prosperity, and also increased growth in motor vehicles and motor vehicle use in some areas.

While this is encouraging, we still face challenges, particularly when it comes to ozone and, to a lesser extent, fine particles. So we have strategies in place to keep on top of these issues and those strategies are articulated in the Government's Action for Air statement and plan. Action for Air is regularly updated and it forms the basis of our submission to the inquiry. I just want to clarify that underpinning Action for Air are some strong fundamentals, and these include clarity around what we are trying to achieve; we have got strong goals at a national level about air standards and what we are trying to achieve for business pollutants; we have got very good scientific information and a strong understanding of the Sydney air shed and how it works, and each air shed is different, so we have got a good, strong understanding of Sydney, its air shed, the chemistry and how things happen in Sydney; we have got a very good understanding about where the emissions come from. In fact we have just updated our emissions inventory, which gives us the latest information about where pollutants are coming from, where emissions are coming from, and that tells us where we should be putting our efforts and our priorities, and it is saying that we need to keep working on industry, motor vehicles, but we also need to pay some more attention to some of the smaller sources, and by smaller sources I mean everything from solvents and coatings in light industrial settings through to off-road equipment and engines such as lawnmowers and boat engines, because we found all of these contribute to ozone and particles.

As well as having those strong strategies and that strong science to underpin it we also have very strong monitoring programs. As you are probably aware, we actually release data on Sydney's air quality twice daily on web sites, and that regularly gets reported through the media. We also have quarterly reports of air quality, which helps give us trend data. We have annual reports that go through the national reporting process, which sets the reports against how they are going against those national goals, and, of course, with reports regularly through the State of the Environment report. In addition, we have established a health alert system which reports potential high pollution days to the public and alerts them to action they can take to minimise impacts. Also, every three years we have a public forum to look at how we are going in our Action for Air plan and in that forum we take on ideas and we advise on Action for Air. The Action for Air document you have had as your submission is that update of Action for Air.

CHAIR: Ms Barnes, the 2005 performance audit by the New South Wales Audit Office of air quality in New South Wales found that the Department of Environment and Conservation lacked the resources and powers to effectively implement the Action for Air. What comment do you have to make about the findings of the Audit Office?

Ms BARNES: Action for Air is a whole-of-government strategy and it is not just about government taking action it is about all sectors taking action. So in terms of resources, what we do is set the platform, we set the policy settings, and there are plenty of resources to do that, and then there are resources for everyone to play their part.

CHAIR: What about in terms of being able to take action to prosecute for breaches? How many people within the department are involved in that side of the work?

Ms BARNES: Just this year we have updated the Protection of the Environment Operations Act in terms of penalties, and in terms of taking action we have people in our regulatory area, but also local council can take action on the ground.

CHAIR: Can we be more specific? How many people are involved in the regulatory side?

Ms BARNES: The regulatory program includes regulation of not just air but water, noise and waste, so I can come back with exact figures on that—and it would be across the board too.

CHAIR: The Protection of the Environment Operations Act replaced a number of earlier pieces of environmental legislation including the Clean Air Act. Can you advise the Committee how the Protection of the Environment Operations Act promotes air quality in the Sydney Basin?

Ms BARNES: The Act strengthens the assessment, it strengthens the penalties and it actually put together a new framework called load-based licensing, which was an incentive for industry to update and improve their performance, and it means that their licence fees are linked to the amount of pollution that is emitted, which is an incentive to keep reducing the pollution.

The Hon. MELINDA PAVEY: In 2004 the department's budget cuts removed five metropolitan air-monitoring stations from the ambient air-monitoring network. Given your statement in your opening statement that progress and air quality reports are put on the Web twice a day, what effect did this have on monitoring the impact of air pollution in the Sydney Basin, particularly in the Campbelltown and Camden areas?

Ms BARNES: I would say upfront that Sydney has the most comprehensive air-monitoring network in Australia.

The Hon. MELINDA PAVEY: And the worst result in Australia for air pollution, according to the National Environment Protection Council, is that right?

Ms BARNES: No. We do very well on a number of matters. We have got challenges, but that is not true.

The Hon. MELINDA PAVEY: They said in their report that smog in Sydney is 10 times worse than any other city in Australia.

Ms BARNES: We have a challenge with smog, with the ozone—

The Hon. MELINDA PAVEY: Which is why we are here today.

The Hon. CHRISTINE ROBERTSON: It is an issue with population base, I would have thought.

The Hon. MELINDA PAVEY: But Melbourne and Geelong are pretty big too.

Ms BARNES: They do not have the same climatic conditions we do, the same meteorology—

The Hon. MELINDA PAVEY: So you do not challenge the fact that we have smog 10 times worse than any other city in Australia?

Ms BARNES: We have challenges for ozone but our air is very good quality; it is fine.

The Hon. MELINDA PAVEY: So smog is not a problem in Sydney, is that what you are saying?

Ms BARNES: We have challenges we have to tackle. We have to keep tackling smog, indeed, but there are exceptional things about Sydney which make our challenges different to Melbourne, different to Adelaide, different to any other major city. If you are going to design a city to minimise air pollution you would not put a city where Sydney is.

The Hon. MELINDA PAVEY: So why did we take out the five metropolitan air-monitoring stations?

Ms BARNES: We regularly look at our air-monitoring stations and air-monitoring program to see what we need to do and it is actually an evolution in terms of technology and also in terms of what needs to be monitored. The actual program is regularly evaluated. The adjustments were made so we could meet the NEPM standards and also because of changing technologies. I will ask Chris Eiser, the head of atmospheric science, to respond in more detail to that.

Mr EISER: Just one slight correction: there were only three stations we closed in the Sydney region. So we still have the largest metropolitan—

The Hon. MELINDA PAVEY: But there were five in total, is that right?

Mr EISER: There are four in total. There is one we closed in the Illawarra just recently. We basically look at the scientific value of the various stations. Our assessment is that the ones we closed were of lesser scientific value than the ones we were going to maintain. We have varying demands; the demands change over time; the population expands and you will find the ambient air quality network has expanded and contracted over time according to the issues. For example, in the 1980s we only had about eight stations in Sydney; we expanded that to the number that we have today.

The Hon. MELINDA PAVEY: I just think Campbelltown and Camden are such growing areas why would you take a station out of there?

Mr EISER: We actually put another station in at Macarthur in the Camden/Campbelltown areas. The two stations that we had there originally were industry stations we had a couple of instruments at; we decided to actually consolidate in a DEC-run station at Macarthur because of the population growth in that area. So you will find where we closed the stations, being towards the coast, we are actually maintaining our coverage in the areas where there is going to be population growth in the future.

The Hon. MELINDA PAVEY: Just on that question earlier, Mr Routh, could you get back to the Committee with the number of staff working in the regulatory area on air quality in particular, not just all the areas lumped together, but on air quality?

Ms BARNES: Can I just confirm that the way we do regulation that reflects the Protection of the Environment Operations Act is—one of the reasons we did not have the Clean Air Act, we have the new Act—was to integrate our regulations. So there are not just people who work on regulating air, they work on a range of issues. So in terms of dividing them up into people regulating air, that would not be possible. But I can undertake to give you figures of people who work regulating industry. I imagine that is what you are looking for?

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But can you tell us how much percentage of their time so you get full-time equivalents? Can you give us full-time equivalents and what percentage of the time these people are spending on air?

CHAIR: No, this is this department.

The Hon. CHRISTINE ROBERTSON: But it is a comprehensive program across many different factors.

CHAIR: That might be, but there is a regulatory role that falls as a consequence of legislation within certain departments.

The Hon. CHRISTINE ROBERTSON: So it is tiny piece of this?

CHAIR: No, there is a regulatory role for this department.

The Hon. MELINDA PAVEY: Your earlier evidence that the air quality is not the responsibility of one singular department, it is across departments and across agencies, is it true that the EPA board in 2004-05 wrote to the respective Ministers of RTA, health, planning and the Department of Environment and Conservation to request in the strongest terms installation of filtration systems in the M5 East, the Cross City Tunnel and Lane Cove Tunnel, but that request was ignored by the respective Ministers?

Ms BARNES: I will have to get back to you on that.

The Hon. MELINDA PAVEY: It is a pretty significant issue, I would have thought. Have you any comment to make on the filtration systems for these tunnels?

Ms BARNES: What was the question about filtration?

The Hon. MELINDA PAVEY: That you wrote to the respective Ministers in relation to filtration issues.

Ms BARNES: The DEC wrote or the EPA board?

The Hon. MELINDA PAVEY: The EPA board in 2004-05.

Ms BARNES: I will have to go back and check the correspondence from the EPA board.

The Hon. MELINDA PAVEY: As Acting Director General of the Department of Environment and Conservation, are you happy with the progress and the responses you have had from the other departments in respect of the M5 East, the cross city tunnel and the Lane Cove tunnel?

Ms BARNES: From the Department of Environment and Conservation's point of view, we have been working with the other departments to look at the impacts of tunnels on air, and through various other inquiries we have answered questions which said that the impacts have been in line with the previous modelling and in line with the expectations from that, and it has minimised impacts on local communities.

Ms SYLVIA HALE: Reverting to the monitoring stations issues, three have been closed in the Sydney area. The Government's submission indicates a monitoring station still operating at Earlwood. Is that so, or has that station been either closed or moved?

Mr EISER: Earlwood is still operating.

Ms SYLVIA HALE: According to the Total Environment Centre sampling levels have dropped from 1,500 to 450 samples. Is that correct? Has that level of sampling decreased?

Mr EISER: Not to that extent.

Ms SYLVIA HALE: To what extent has it decreased?

Mr EISER: I do not have the exact figures with me, but we generally have in the order of a few hundred instruments over the whole of the network. I will get back to you in terms of numbers.

Ms SYLVIA HALE: The Protection of the Environment Operations Act has a broad objective of reducing risks to human health, and yet the Act does not establish future standards for the eventual phase-out of dangerous chemicals that are carcinogenic, such as dioxins, furans and mercury. Is there any intention to push for the eventual phase-out entirely of these substances in the environment?

Ms BARNES: We operate to use guidelines for those substances, to international standards. I might ask Nigel to talk more about those guidelines and standards.

Mr ROUTH: There are a number of facets to that. There are national environment protection measures which set standards, and that now includes, as of a couple of years ago, the national environment protection measure for air toxics. One of the key elements of that is undertaking analyses to identify whether further monitoring is necessary, given that we have already had a five-year monitoring program on air toxics. That is one facet of it: identifying what is there in the atmosphere.

The other thing that is critical is that we apply world's best practice in terms of emission limits for industry premises. For instance, with dioxins that is very much the case. That is, I think, as best as is practical at present: to apply world's best practice to emission limits for relevant premises for dioxins and furans, or whatever the toxins may be.

Within that we have a very comprehensive assessment program that also applies premises-specific emission limits that are tighter than the regulatory emission limits, if that is a conclusion that comes out of the assessment process, if that is seen to be necessary. The regulation sets the minimum emission limits that must be met by industry, and then there is an assessment process on top of that which can lead to tighter emission limits.

In addition to that, for existing premises we can have pollution reduction programs, which are negotiated with industry, that can then lead to further reductions of the emissions on premises where there is a particular issue identified.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: When you say that the limits are world's best practice, I understand that the Americans set limits and then people can go to those, which is what we do. But the Europeans say what is world's best technology and then the limits progressively fall, so that if something is achievable now it automatically becomes the limit in five years. We do not follow that practice, is that correct?

Mr ROUTH: I think the systems are not incredibly dissimilar, in that we review our specific regulation that relates to the emission limits for industrial premises every five years. So it is not a static, fixed, stay-as-it-is-for-all-time exercise by any means. That is reviewed; indeed, it was reviewed just last year. Quite a number of the emission limits were tightened, and that was quite significant for new industry.

The other thing that was significant in the review of that regulation is that we, for the first time ever, introduced a stepped process to assess whether the old emission limits for older premises

should remain as they are or whether they should be brought forward to more modern emission limits. So that is quite a significant shift, so you do not just sit as you are as a 1950s, 1960s or 1970s industry. There is an assessment process in place to review whether those emission limits are still appropriate. If they are not, if they are having an environmental impact, they have to upgrade and then tighten emission limits over time.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: The Alcoa plant at Yennora has just put in a development application and will be handling more aluminium dross, and has asked for retrospective approval to bring in aluminium dross from outside the Sydney Basin. It is at a low point in the Sydney Basin, where there are temperature inversions. It seems that the decision is up to Holroyd council, in the sense that they are probably going to increase their pollution, but they claim to be under your limits. Is that not more pollution, while you are sitting idly on the sidelines?

Mr ROUTH: No, I do not think that is the case at all. We have been involved in advising Holroyd in this process, which I think is a useful thing to do in terms of expertise. We have drafted general terms of approval for those premises, which do specifically apply a world's best practice in emission limits, for instance, for dioxins and furans.

There is also in that draft general terms of approval—which I do not think has yet commenced because it is still being played out in the court process—a review process that would require Alcoa to undertake a pollution reduction program and to get them to look at improving further, to take on best available technologies and to look at benchmarking against international best practice. So we are very mindful of the need for continuous monitoring and improvement of premises.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is it not true, though, that the amount of pollution they are allowed to produce in Yennora is greater than the amount that Western Aluminium is producing in Weston, which is further from population and has fewer temperature inversion effects than the middle of the city?

Mr ROUTH: I do not have the Weston figures in front of me, but I can certainly give you the comparison for the two subsequently, in terms of their total loads of emissions. I have the Alcoa figures, but I do not have the Weston figures at my fingertips.

CHAIR: Would you take that on notice please?

Mr ROUTH: Yes.

Ms SYLVIA HALE: Is Alcoa responsible for conducting its own auditing of the emissions, or is independent auditing occurring?

CHAIR: Could that question be about industry generally, rather than confined to Alcoa?

Mr ROUTH: It depends on what the licence conditions are that are applied by the Department of Environment and Conservation, previously the Environment Protection Authority. It may be that the negotiations have set a pollution reduction program which has fallen targets that are to be met. There can also be monitoring. I understand there is planned to be monitoring at the industry site at Alcoa.

Once we have done the assessment, we then determine what is appropriate for the particular premises. But, as I said, it is not a matter of set and forget: we do come back and review both the regulation and the licences every five years.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But is it not the case that in Victoria the polluters pay into a fund and that fund pays for independent monitoring largely done by Monash University? Whereas, in New South Wales it is self-regulation, and then they take samples and give them to you and those samples may not be at the worst time? What control is there, if you do not have continuous monitoring, that the sample has been taken in self-regulation at the time of either the worst pollution loads or when the atmospheric conditions are making the shed very small so that they fall in a small area?

Mr ROUTH: It is not self-regulation. We have a technical document that sets out what is required by any premises in terms of monitoring, and that is a recognised, credible documentation of monitoring processes. Any monitoring that is undertaken by us or by others needs to be in accordance with those procedures. There is not a get-out-of-gaol card free there for them. If there is monitoring to be undertaken, it has to be in accordance with those procedures and reported to us. It can be a useful tool in terms of looking at what further improvement may be needed on the premises.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But the monitoring at Yennora is not continuous, and the residents say it is worse at night, which is what you would expect from the temperature inversions, and there is variation in the charge of the furnace, depending on how much plastic or polyurethane is attached to the aluminium they are recycling.

Mr ROUTH: I think for any premises, we are always very willing to take information from the community. I believe we have communicated to the community at Yennora that if they have evidence—whether it be photographic evidence, video evidence, or whatever—I believe our operational people have said that they are quite happy to take that evidence and look at it. I know also that our operational people have themselves conducted, if you like, surveillance of those premises. As I said, we are very mindful of making sure that the premises perform in accordance with the licences.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Why is the public being asked to do the monitoring, when you should be monitoring? Why is the monitoring not independent, as it is in Victoria? For example, they take samples. Surely, you can take a sample at a time that is convenient to you, can you not?

Mr ROUTH: No, it has to be in accordance with the guidelines and methodology we set out. You cannot skew the system to favour a certain result. It is in accordance with the methodology set out, so it has to comply with that and it has to be credible.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Should that not be done by an independent group? Why is not the money paid by polluters put into a central fund and that fund used to pay an independent monitoring unit such as the university, which then publishes its finding?

Mr ROUTH: I am not intimately familiar with the Victorian system, but we would be very mindful of ensuring that the system here is credible.

Ms BARNES: I would like to comment that the strong regulatory framework we have established in New South Wales is underpinned by strong licence conditions, and companies having to report annually or more regularly on their results. We do not leave it at that. We look at those returns, we also do spot audits, and we go into companies and see what they are doing. However, we do need the community to be the eyes and ears, and to report to us. They do report through things like the Environment Line. When we get those reports, we follow them up, we take action, and the system is robust and credible.

The Hon. CHRISTINE ROBERTSON: What can be done to reduce volatile organic compounds and ozone levels in our air, particularly given that it is an issue today? Are there any specific policies or strategies, of which you are aware, from overseas experience that would work if we adopted them?

Ms BARNES: Ozone is very much a summer problem in Sydney. Ozone is formed by volatile organic compounds [VOCs] which are in the air. But in summertime, when you get the added heat, which we all love, it cooks those chemicals in a slightly different way to form ozone or ground-level smog. So you need control strategies for both of those ingredients for ozone.

We have been working on a number of control strategies, including putting in place a regulation to regulate fuel in summer so that the volatility level of fuel in summer is a lot less than it is in winter, which keeps the levels down. We have also been looking at how you can minimise the escape of vapours from service stations when you fill up your car with petrol. There is a system in place already to minimise the escape of those vapours when tankers are filling the big tanks in service stations. We have been looking at how you can minimise the release of those vapours into the atmosphere when you are filling your car from the petrol pump.

We have had a trial of what is called vapour recovery II equipment, where we have looked at a suction cap or petrol cap on your car, which keeps those vapours in the system and puts them back into the tank. That has been quite successful. We are now looking at where to go from here on that. We understand there is some new equipment overseas, which we might trial as well, that can be used to lower those emissions. I will ask Chris Eiser to expand on the other programs we have in place to reduce VOCs, and ozone in particular.

Mr EISER: In relation to VOCs, there has been a large number of programs over the last few years, the most successful one being the unleaded petrol program and controls on motor vehicles, that has had the most significant reduction. We have had controls on industry as well to reduce their VOC emissions. When we are talking about compounds we are talking about unburnt petrol and we are talking about solvents as well. In terms of other programs on the domestic side, by just promoting low volatility paints in terms of reducing the solvent content of the paint. In terms of meeting our ozone in the future it is going to be quite a challenge, so we have looked at what we call both the precursors to photochemical smog—VOCs and the oxides from combustion of fossil fuels—to reduce those. We are looking at what those potential strategies can be in the future.

The Hon. CHRISTINE ROBERTSON: Quite a few of the submissions talk about emissions from diesel fuel, and the petrol crisis has increased people's desire to use diesel fuel because of its financial efficiency. Recognising that this is not the forum to deal with the cost of petrol, is there any possibility of our dealing with the problems caused by diesel fuel. Are there any changes that can be brought in for vehicles? There are a lot of submissions in relation to this issue.

Ms BARNES: Action for Air encourages the use of alternate fuels. It encourages the use of alternate fuels, it encourages us to look at alternative fuels and to consider how they can assist reducing emissions, ozone in particular. That means looking at things like ethanol, looking at things like LPG and also looking at what you can do with diesel to reduce particles. In the past we have not been able to take a lot of action to improve diesel because the fuel was very dirty. However, the new fuel standards mean that there has been a significant drop in sulphur in diesel fuel. Now we can look at things like putting particle traps and equipment post manufacture on diesels to help clean those up as well. We have done some trials working with the RTA to put particle traps and extra equipment on dirty diesel vehicles, and those results are very encouraging. We have seen a drop of particle emission from some of those vehicles by about 90 per cent. We are looking to extend that program to see whether it works across the whole fleet, and then take it from there. I will ask Mr Routh to expand on that.

Mr ROUTH: I think that is an important point: we now have 50 parts per million sulphur diesel—low sulphur diesel—which came in this year. Therefore it is now feasible to fit these particle traps, or oxidisation catalysts, which could reduce, as Ms Barnes said, the particle emissions in particular by 30 to 90 per cent. The trial we have done within the RTA, funded by the Environmental Trust, verified that.

The Hon. MELINDA PAVEY: Will they be fitted to the new diesel buses?

Mr ROUTH: No. New diesels are entirely different. Many of the models already have those fitted and, therefore, their emissions are far lower. There is a rolling program over the next five years that will significantly reduce the emissions of new vehicles and in the end what you are left with is trying to further bring down the emissions from the older vehicles in the fleet. Obviously, diesels tend to go on for far longer. There is that opportunity to fit these after-treatment devices to the exhaust.

The Hon. MELINDA PAVEY: Originally there was talk about LPG, but they went to diesel—a decision was made about that in 2004. Were you involved in that process at all? Did you give an opinion? Was LPG as good, better or worse? What was the situation?

Mr ROUTH: I think the latest is that they have announced that half of the new vehicles purchased for the STA will be Euro 5 diesels, which is the cleanest it can get.

The Hon. MELINDA PAVEY: Is it better than LPG?

Mr ROUTH: It is a bit difficult to do a better than or a direct comparison because there are some pollutants that are lower and some that are marginally higher when you compare LPG and diesels. The further into the future you compare the models, once you go through to what they call the Euro 5 models, the differences become fairly marginal and much less significant than if you rewind, say, 10 years between gas and diesel. As I understand it, the STA has announced that it will have a mix of both compressed natural gas [CNG] buses, new purchase, and Euro 5 diesels, which, into the future, are the cleanest diesels you can purchase. The difference starts to contract.

Ms BARNES: We have also done some trials using biodiesel, which is a mixture of diesel with fuels from either plants or oils. We have had trials with different councils with their fleets, and they have been very encouraging as well. It is also worth noting that the Government has put in place guidelines for the Government fleet around alternative fuels—

The Hon. MELINDA PAVEY: Like Peter Debnam has?

Ms BARNES: —that has required all Government vehicles to use biodiesel fuel wherever practicable as part of the Cleaner New South Wales Government fleet policy. I think it is very important to mention as well that under that fleet Government agencies will need to upgrade their to cleaner vehicles. What that does, importantly, is that we have a turnover of vehicles—Government fleet policy—that puts cleaner vehicles into the second-hand market. As well as the new fuels and new engine standards you will start to see cleaner vehicles flow through to the second-hand market. You will start to see alternatives, and that will make a big difference.

The Hon. CHRISTINE ROBERTSON: I understand that there is proof that the quality of Sydney air is better than it was in the 1960s. Could you talk us through exactly why and whether it is significantly better?

Ms BARNES: Absolutely. There have been reductions in major pollutants. I will ask Mr Eiser to take you through the actual percentages of the reductions in those major pollutants. As I said, they have come through major controls on industry and through tightening up the fuel standards. They are working on a range of different smaller sources.

Mr EISER: Our air is much cleaner than it was in the 1960s and even in the 1980s from all the measurements we have taken of the ambient. In the 1960s we were looking very much at industrial pollution—coal-fired and oil-fired—and a lot of particle pollution. That certainly has come down with a change to fuels with natural gas becoming available plus the controls on industry that the SPCC and subsequently the EPA put onto industry. As we developed we started using our vehicles a lot more, so photochemical smog and other pollutants became more of an issue. We basically then started looking at ozone. In the 1980s ozone was much higher than it is today, even with much smaller populations in terms of people and vehicles. Today, as a result of a number of programs and studies we have had to guide the control programs we put in place, the study in the 1970s and the Metropolitan Air Quality Study in the 1990s, we are down to carbon monoxide being lower than the current ambient air quality standard—about 80 per cent of the standard—even at peak sites in the CBD. Certainly lead has come down: it is less than 10 per cent of the standard because of the banning of unleaded petrol and the unleaded petrol program.

Nitrogen dioxide is down below the standard, about 90 per cent of the standard because of the controls on the motor vehicles, and particles are coming down. We tend to have an issue with extreme events. When we are in drought we have higher levels of particles because of bushfires and dust storms. That is a challenge during those extreme events. The remaining issue we have with ozone in terms of summertime smog. Air toxics we have had a look at as well. As the technology evolves in terms of measuring air toxics we are looking at parts per billion. Our latest study, concluded in the early 2000s, showed that most air toxics were below the international benchmarks. Benzene, for example, is below the benchmark. Other pollutants, such as polycyclic aromatic hydrocarbons [PAH] certainly are an issue in some areas of Sydney, but more in the Tablelands where we have a lot of solid fuel heating, which we have programs on. Overall our air quality has improved and we are taking steps to make sure that it continues over the next decades.

The Hon. CHRISTINE ROBERTSON: From our media experience ozone is about the breaking up of the atmosphere and changing the climate. You have used it a lot here.

Mr EISER: There are two ozones. The ozone we refer to is ground level ozone, which is a chemical reaction at ground level from pollutants such as petrol, and oxide and nitrogen from the burning of fossil fuels. The ozone at loft is really a different issue. There is not a lot of interchange between the two. That protects us from the UV light from the sun. At ground level ozone has a specific health impact in terms of respiratory issues, and it has been a long recognised pollutant that we have been looking at for the past 20-odd years.

CHAIR: One of the submissions we have received makes a recommendation, or urges us, to look at changing the standard for particulates to incorporate numbers and surface area rather than just weight. In fact, it suggests that relying on weight is inappropriate for the determination of health risk. Could you comment on that?

Mr ROUTH: I can certainly start, but Mr Eiser might like to add to it. The ambient air quality protection measure is currently under review. The review process goes through to 2008. Part of that review process would encompass looking at appropriate measurement technologies and techniques. It is not something that is static. It is something that is being looked at by a national committee of environmental agencies that reports through to environmental agencies CEOs and ministers through to the Environment Protection Heritage Council. In that process there has already been a scoping paper put out for public discussion and public input. There would be at least two, if not three, rounds of consultation in that exercise over the next couple of years.

Mr EISER: In terms of particles, there is a particular challenge because we are not quite sure which part of the particle we need to measure. Particles are composed of a whole range of material. Something like carbon monoxide or sulphur dioxide are molecules and you can measure particles that cover a whole range, and mass is only one of the measures. You look at the concentration numbers and so forth. To date we have used mass because we are really working our way down. Technology allows us to do continuous mass measurements. We can do composition. When it starts getting down to numbers you are talking about ultrafine particles, which is really only research at this stage; it is not a routine technique. We are looking at that.

There is some work already under way in Queensland, and we are commissioning some studies under the Environmental Trust to look at particles in Sydney in terms of numbers and size. Technically, while it would be desirable, we are not able to do it at this particular time on a routine basis. We are required by the NEPM to use certain techniques and to manage certain cuts of the particles. For example, we measure particles less than 10 microns and particles less than 2.5 microns. They are the particular focus we have at the moment. If NEPM comes up with a recommendation to look at finer particles we will have to work out what kind of technique we can use and how that is best reported. But certainly any information that we generate feeds into the health process, and the health process feeds back into what type of measurements we need to take in the ambient.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I gather the ones that are very damaging are the 0.2, in other words one-tenth of the 2.5. Are you saying that they cannot be measured technically?

Mr EISER: They can be measured technically, not just routinely. We are using techniques in terms of compliance with national standards and all the Australian standards. We reported that information. There are many different techniques to measure particles, and they measure, as I said, a cut. Generally the measurements we use at the moment are cut off around 0.1 to 0.3 microns. Below that it is very light in terms of the mass of the particles, so you have to go to a different technique. At the moment we are reporting the masses of PM_{2.5}.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You are getting great results measuring the total mass of particles, but if the number of small particles replaces the few big particles and you have many more particles you would still show a huge improvement in your monitoring, but the amount that is getting into people's lungs would be going up quite a lot? Is that not the situation?

Mr EISER: In terms of mass, we are actually measuring as we are required. If the health information confirms that we need to look at smaller and smaller particles, and that seems to be the way the international literature is going, we will go that way. At the moment no jurisdiction around

the world is actually measuring routinely particle numbers. They have gone as far as PM_{2.5}. The health evidence is still to come in in terms of what part of the particle we have to measure, what part of the particle is the most toxic that we need to measure at the moment. The agreement is en masse and PM_{2.5} is the current understanding.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Are the small particle numbers going up as the big ones come down?

Mr EISER: I cannot answer that question. We do not have any information at this time.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: There must be some information on that, surely?

Mr EISER: I do not have any information to hand. Certainly, as we control particles we are looking at the larger particles. For example, with coal fired we are getting rid of large particles. The combustion particles are all below around PM_{2.5} or PM₁. So that is certainly an area we are looking at in the future.

Ms SYLVIA HALE: The Protection of the Environment Operations Act specifically prohibits the contamination of water without a licence yet there is no general prohibition on air pollution or contaminating the air supply. Can you explain why there are two separate standards?

Ms BARNES: The Act is around minimising impacts of air on local communities and regional air shifts. That is the way it is constructed.

Mr ROUTH: The thing about air pollution is the way it is managed is through, as we said, the licensing system, the assessment process, audits, reduction programs, so it is not as though there is no mechanism or process there to enforce appropriate measures.

Ms SYLVIA HALE: But if there is a general prohibition for water why is there not a general prohibition for air for which you require a licence if you are going to contaminate the air?

Mr ROUTH: Yes, you do require a licence.

The Hon. MELINDA PAVEY: Is it true that in the case of the M5 East tunnel significant changes in stack and portal emissions and serious failures of in-tunnel and in-stack monitoring have been brought to DEC's knowledge and documented? If so, what evidence can DEC provide to confirm that DEC responded effectively?

Ms BARNES: The monitoring of the impacts of the tunnels are in line with the assessments we made through the process, and any monitoring that is different to that is brought to our attention and we work with the other agencies to minimise those but there have not been excessive exceedances.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Are you saying that it is all satisfactory?

Ms BARNES: I am saying that the impacts from the tunnel are in line with the assessments which said there will be minimal impacts to the communities around the tunnels.

The Hon. MELINDA PAVEY: But if a private sector polluter had exceeded the emission levels, as happened at the M5 on many occasions, I am sure you would have issued a cleanup prevention and prohibition notice. Why was a similar notice never given to the RTA?

Ms BARNES: Other inquiries have established that the DEC—and the EPA is part of the DEC—is not the regulator of the tunnels after construction. We regulated the construction of the tunnels but we do not have a role in the ongoing regulation of the tunnels.

(The witnesses withdrew)

MICHAEL PHILLIP STAFF, Director, Environmental Health, New South Wales Health, and

DENISE MARGARET ROBINSON, Chief Health Officer, New South Wales Health, and

VICKY SHEPPEARD, Senior Policy Analyst, New South Wales Health, affirmed and examined:

CHAIR: Do you wish to make an opening statement?

Dr ROBINSON: Yes. Firstly, I would like to acknowledge the traditional owners of this place, the Gadigal people and the Eora nation, and thank you for inviting us to attend this inquiry on air pollution and health. New South Wales Health recognises air pollution as a significant health risk, and I am pleased to note that we have played an active role with respect to air pollution over many years. Initially predecessor organisations, including the Department of Public Health, had a day-to-day responsibility for managing air pollution in New South Wales. However, with the devolution of the regulatory powers to the State Pollution Control Commission and its successor organisations in the 1970s, as the health department we have endeavoured to maintain an active involvement in air pollution and health issues. We have been the leading government agency in Australia's air pollution and health research, as I hope was evidenced in our submission to this inquiry, and we are the only jurisdiction in Australia to maintain a specialist air pollution and health unit.

Policy questions continue to drive air pollution and health research in New South Wales, and we are currently prospectively assessing the impact of changes in air pollution exposure on the health of residents about one of our more recent tunnels. New South Wales Health does not have a mandated role in the control of air pollution, but we liaise closely with the regulatory agencies to ensure that air pollution and health issues are appropriately recognised and managed. In order to do this we maintain an expert knowledge on air pollution and health, and provide input to a variety of processes, such as review of regulations and identification of health issues to be considered as part of environmental assessments. We also liaise with health and environmental agencies in other jurisdictions and provide input to processes such as the development of national standards.

Communication with the community about reducing the risks of air pollution on health is an important function for us, and to this end we developed and implemented the air pollution health alert system in liaison with the Department of Environment and Conservation. In developing the system, we undertook research on community needs regarding air pollution and health information, including several focus sessions with community members and consultation with stakeholder representatives, general practitioners, physicians and the Asthma Foundation.

CHAIR: How does Action for Air address the health impacts of air pollution? What is the role of the Department of Health in implementing Action for Air?

Dr STAFF: As we know, the Action for Air program is a program led by the DEC for the next 25 years. There are seven objectives in that, and the aim is to improve the air quality in the Sydney Basin. Health does not have a specific role in implementing the actions under Action for Air but certainly do provide some inputs into it. We participate on the senior officers group which discusses the health evidence and health bases for lots of the decisions that have been made. The one area where we do have some policy direct input is in promoting active physical activity, active modes of transport, bicycling, pedestrians, those sorts of things. Certainly, they are some of the co-benefits out of it, but as I have indicated we do not have a regulatory role with that. But a lot of the work we have done, a lot of the research we have done, a lot of the information that we put on the table relating to health impacts about air quality underpins the strategy.

CHAIR: In relation to the impact of air quality, do you collect statistics on at-risk groups? Do you seek to identify at-risk groups, and are you able to indicate whether parts of Sydney are more at risk in terms of air quality for people in the community?

Dr STAFF: Certainly, the Health Department collects quite considerable health statistics on lots of diseases. The issue is that with most health conditions there are multiple factors that cause that, and particularly in environmental health it is hard to sort out exactly what is the attributable portion of different parts. So traditionally in environmental health we rely more on looking at the exposure that

people have, measuring exposures, which is certainly something that is done by the Department of Environment and Conservation. Then we use our health-based research, which we have had previously, looking at the relationships between exposures to those levels and the health outcomes, and then bringing those two bits together to predict the actual health impacts. As I said, routine health monitoring will pull up lots of different conditions and there will be multifactors involved with that, and certainly things such as air pollution may not be the main driver behind that.

So having said that, then certainly you could look at areas within Sydney and parts associated with different sorts of infrastructure where there are measured levels of pollutants. Certainly, then we can infer from that in terms of whether some people are more susceptible to it than others, that is certainly the case. As is the case with lots of different diseases, there will be identifiable groups based on their demography or their characteristics. Classically with air pollution it will be people with chronic respiratory disease, people with asthma, people with chronic obstructive pulmonary disease; they can certainly be more at risk from respiratory type illnesses. Certainly, there is some evidence linking air pollution to cardiovascular disease also. So those with pre-existing cardiovascular disease will also be at risk. Certainly, I think that sort of portrays that there are several different ways of looking at who is at risk, that is, factors of susceptibility of yourself and the level that you would be exposed to.

CHAIR: When you collect statistics do you look at clustering? Do you identify where there might be a group that seems to be more at risk?

Dr STAFF: Certainly, I think it would be more appropriate to measure the exposure in the environment. We do routinely look at disease patterns, disease prevalence. When we say the word "clustering" in medical terms that means going down to a very small level of community exposure. When you start moving from large to small areas, the natural probability and variation makes it difficult to interpret the statistics. In New South Wales we are reporting at an area health service level and down to a local government area level for the more prevalent conditions.

CHAIR: You do follow up, it is not just collecting statistics?

Dr STAFF: Certainly, that forms our planning and prevention strategies that we put in place for diseases.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: In the Cabinet submission, which presumably is what you are referring to as your submission, the pm10s, the big particles, are the only guide of air pollution. The submissions from the Asthma Foundation of New South Wales say that the small particles are causing the problems, not the big particles. Do you have any comment on research that shows big particles are going down? Often the big particles go down because they produce much more little particles, in the technology, and thus are becoming easier to get into lungs. What you say about that?

Dr STAFF: Certainly we rely on measurements routinely collected and they are for the pm 10s. Certainly there is a lot of debate about this and I will ask Dr Vicky Sheppard to comment, because this is her area of expertise. What we are looking at is that once we get smaller particles, they are likely to go down into the lungs, but that would not discount that the particles at 10 micrograms do have an effect. Certainly a lot of the research has been based upon that. There has been a considerable amount of effort looking at research trying to link health effects, quantifying health risks, for particles smaller than 10 micrograms. Dr Sheppard could elaborate on that.

Dr SHEPPEARD: Yes, it is certainly a debate we are keeping a close eye on. Recent research in New South Wales has looked at the impacts of both pm 10 and pm 2.5. I guess we are pretty fortunate that the Department of Environment and Conservation has monitored pm 2.5 for about 10 years, which is far longer than anywhere else in Australia. We have quite a bit of evidence about the health impacts. Keeping an eye on overseas research, a number of groups are starting to look at smaller fractions of particles. We are not seeing clear evidence that looking between pm 10 and pm 2.5 there might be some different types of effects; that is not being encountered. Once we go below pm 2.5, groups that have looked at ultrafine particles and pm 1 have not found any indicators are better for predicting health effects than is pm 2.5. We have a fairly comprehensive and robust system at the moment, as good as is available anywhere.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Would much of the improvement in air pollution be because big particles are removed? Have small particles increased as the big particles are removed with new technology?

Dr SHEPPEARD: I am afraid the DEC would have to answer that; I am not quite sure how the trends have gone, relative to pm 2.5 and pm 10 in New South Wales.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Perhaps the literature would say, if you are reading what is happening in the world with technology, that as the big particles become less, the small particles would increase, say, from engine exhausts and industrial pollution sites?

Dr SHEPPEARD: There has been some concern that some new formulations of fuels might result in more smaller particles. However, as I said, overseas research has not found that they had been able to predict health effect any better by measuring pm 2.5 or by counting particles.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Do you think it does not matter if the number of small particles increases, according to the literature?

Dr SHEPPEARD: We are keeping an eye on it. I do not think anyone has come to the end of those investigations. Probably less than 50 studies have been done that compared those issues. At the moment it is not clearly one way or the other whether we need to go down the path of monitoring pm 1 or ultrafine particles.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You have recommended that car windows be put up when people drive through the M5 East Tunnel, where the air is pretty noxious. Do you have any comment on that?

Dr ROBINSON: To the best of my knowledge the Roads and Traffic Authority [RTA] has put out a brochure that refers to tunnel behaviour. To my recollection, when I renewed my drivers licence I received a copy of a brochure which suggested that when going through tunnels it is appropriate to wind up vehicle windows.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But as you approach the tunnel that advice is not given, is it? That would be a smart place to put it.

Dr ROBINSON: No, it does not say that as one approaches the tunnel. If there is any external signage I have not seen it.

Ms SYLVIA HALE: But the brochure does not suggest that motorcycle riders or people in non-air-conditioned vehicles should avoid the tunnel altogether, does it?

Dr ROBINSON: We have provided advice to the RTA. As regulators, it is up to the RTA to determine the position it is going to take. My understanding, as I said, was that it had made practical advice available to motorists through its tunnel behaviour policy, and that was distributed to all motorists.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is that shorthand for the fact that if motorists do not take that advice, tough luck?

Dr ROBINSON: We do not have any regulatory authority in that regard. We are here to provide advice to the regulators.

The Hon. MELINDA PAVEY: But you are the State's Chief Health Officer. Would you not expect that in good governance the RTA would accept advice from you to put up signs? People renew their licences on a four-yearly basis. Maybe every four years a licence holder would get in the mail the brochure you have received. Would it not be better to have proper signage at the entrance to the tunnel? As Chief Health Officer would you like to see that happen?

Dr ROBINSON: The decision about signage is the responsibility for the RTA.

The Hon. MELINDA PAVEY: As the Chief Health Officer what is your view?

Dr ROBINSON: As we have indicated, we provide advice to the regulatory authorities; we do not have a regulatory role ourselves.

Ms SYLVIA HALE: Under the Public Health Act, according to the legal advice you received in 2003 you have the power to direct an authority, such as the RTA, to reduce public health risk, do you not?

Dr ROBINSON: I am not party to that advice and I do not have that understanding of the Public Health Act.

Ms SYLVIA HALE: A series of questions have been asked of you over the period. In the budget estimate you were given a copy of a letter outlining the legal advice that you had received. That legal advice suggested you continue to persuade the RTA to comply, but in view of its non-compliance and its continual creation of a situation of risk to public health, will you consider directing the RTA to prevent exceedances in the tunnel?

Dr ROBINSON: My understanding is that we can provide advice to the RTA. I am not in any position to direct the RTA.

Ms SYLVIA HALE: Will you take that question on notice and confirm whether under the Public Health Act that is your position?

Dr ROBINSON: I will take that on notice.

The Hon. MELINDA PAVEY: In 2003 and 2004 your department conducted studies into the health impacts experienced by residents around the M5 East ventilation stack. Who analysed those results and who is best able to talk about that?

Dr STAFF: I am probably the most appropriate person to do that.

The Hon. MELINDA PAVEY: Could you expand on the results and any issues of public health arising from that?

Dr STAFF: The M5 study was a very complicated study. No study had been done on that type of tunnel before. It was probably the first to be done in Australia. Its genesis was when we reviewed the environmental impact statement [EIS] for the proposal for the M5 East, that there was not expected to be any impact on local ambient air quality around the stack. Certainly there was no expectation that there would be any health-related issues with that at the planning stage. Once the tunnel was in operation and the ongoing monitoring occurred, which had been required as part of the conditions of consent, essentially that reaffirmed that situation: there was not any appreciable increase in ambient air quality on the measurable parameters we were looking at.

Following that, there was concern in the community that they were experiencing health effects and there were some reports of those health effects. As we are the Department of Health we responded to those concerns and carried out a study. We needed to look at whether those concerns were valid, whether they related to the tunnel or not. That is our obligation as the Health Department. It was a multi-phase study. Phase one of the study was about developing a case definition; trying to get an objective measure of people's symptoms. We did that and it involved people going to see a specialist at a clinic at the Royal Prince Alfred Hospital. We developed a comprehensive case definition. Those sorts of studies can really only tell you the sorts of symptoms we should be looking for. It was not an analytical study as such.

The second phase of the study was an analytical study. It was a cross-sectional study in which we did telephone survey of randomly selected people across the exposure area, looking at different modelled exposure zones. We could not measure the impact of the emissions from the stack, it had to be done through modelling. We did the survey, collected the data, analysed the data and used the CSIRO, which modelled the exposure zones. We looked for an association between the exposure

and the symptoms. There was no impact from the study. We had expected that those in higher exposure zones, which is a relative exposure not an absolute one, would have had a higher prevalence of symptoms than those in the medium zone or in the low zone.

If there was any impact from the study we would have expected that those in higher exposure zones—which is only a relative higher exposure, not an absolute one—would have a higher prevalence of symptoms than those in the medium zone or in the low zone. The findings essentially did not find a statistical association between exposure in those three zones and prevalence of symptoms. As with any study there are some limitations; particularly in epidemiological studies there is some limitation on the level of effect it can detect. We have acknowledged that as a limitation of the study. There is also some restriction based upon the fact that it was a cross-sectional study, not a before-and-after study. The reason why it was only a cross-sectional study, as I have explained, was that we would not expect there to have been an impact from the tunnel emissions, based upon the modelling in the original EIS for the tunnel.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Would the original modelling, in which it was proposed to have three stacks, give the same result for only one stack? The problem with the tunnel was that it took three or four stacks on the ridges, and ended up with one in a hole with a big funnel on top. Presumably it costs a lot more energy to run that and the air cannot be moved as efficiently. Is that correct?

Dr STAFF: I am not an expert in tunnel ventilation. We reviewed the EIS on the proposal that was put to the Department of Planning, which was one stack.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: No EIS was done on the multiple stack proposal? The EIS was done on the revised design?

Dr STAFF: The EIS I have been involved in was done on the one tunnel. I am not sure whether one was done on the other proposal. Dr Sheppard may have some advice on that.

Dr SHEPPEARD: I think there was, but I do not think the Department of Health looked at it.

CHAIR: Could you take that question on notice, rather than saying what you think?

Dr SHEPPEARD: Yes, I will.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is there something methodologically wrong with simply having a pollution source and then running around and surveying people? Is it not better to lessen the amount of pollution at the point, on the assumption that it is a dose response: The more pollution there is, the more people will get sick? You would not have to prove that, just lower the pollution.

The Hon. CHRISTINE ROBERTSON: You have just disproved it.

Dr STAFF: Certainly the objective of our transport policy should be to lower the pollution level. If you put in a tunnel and it averts some traffic congestion, which would decrease the emissions from motor vehicles by the fact that it is, for example, completing a missing link in the traffic system, or it disperses the emissions to a greater extent further into the atmosphere, that is positive. We would probably all like to have non-polluting cars, but we do not have the technology for that yet. We need to mitigate the risk.

CHAIR: As a consequence of the experience of the M5 East Tunnel, you have suggested that the initial expectations were different from later expectations. Have lessons learnt by NSW Health as a consequence of that experience?

Dr STAFF: We are in the process of developing a further understanding. This is a study that has not been done in any other parts of Australia. We are interested in being able to respond more proactively should the situation come up again. We all know it has come up again with other tunnels. We have learnt some lessons from the M5. With the Lane Cove Tunnel study we have proposed, we

are looking at a prospective study as opposed to a cross-sectional study, so we are not simply relying on the information from the EIS, looking at modelled pollutants. We are collecting baseline data and following that through with the opening of the tunnel and seeing if there is a change.

The Hon. MELINDA PAVEY: When is the opening of the tunnel?

Dr STAFF: The Lane Cove Tunnel?

CHAIR: I do not think that is relevant.

The Hon. MELINDA PAVEY: It is in relation to the fact that NSW Health has a 12-month period to analyse the atmosphere around Lane Cove for 12 months before the opening of the tunnel, is that right? Is it 12 months?

Dr STAFF: What we are essentially doing with the Lane Cove Tunnel is collecting some baseline data and repeating that again in 12 months.

The Hon. MELINDA PAVEY: But is it supposed to be over a 12-month period?

Dr STAFF: No, what we are doing is going to the community in two points in time, 12 months apart.

CHAIR: Can I ask about the role of Health and whether anything has changed as a consequence of the experience of the M5 East. More broadly we now have legislation in place, the critical infrastructure legislation. What role does NSW Health have in terms of input for planning in relation to critical infrastructure?

Dr STAFF: Certainly with the new part 3A there is a requirement for an environmental assessment to occur. We have an administrative relationship with Planning. The Department of Planning usually seeks our input on major infrastructure and they have done on several occasions. What they will do is run their planning focus meeting, we will talk about the issues and quite often we are asked for input into director general requirements for the Department of Planning to cover health aspects, which we will provide. That forms the basis of the environmental assessment component that the proponent needs to put together. If there are conditions of consent, if the development is to be approved, then we will also comment on that, so there are well-exercised administrative relationships between NSW Health and the planning approval authorities.

The Hon. CHRISTINE ROBERTSON: This question has only come up somewhat obscurely in submissions from people on this specific issue. The issue of perceived adverse effects on health and "real" adverse effects on health, how do you people, as public health practitioners, work through those definitions? Can you tell us in more detail what you were looking at in your study and what sorts of symptoms were coming forward as issues for the persons affected? Is that question too convoluted?

Dr STAFF: I think I can try and answer that. When we are talking about people's symptoms and people's health, we take every symptom seriously. It is not a matter of saying, "These are real symptoms" or "These are not real symptoms". If people have a concern, it is appropriate for the Health Department to respond to those and we will do that in the best way that we can. Risk communication plays a very important role in that, but certainly if someone appears to have a symptom that they are concerned about and it is at a level in the community that causes some concern, we shall respond to it.

What we did with the M5 was that there was a group of people with a whole lot of symptoms. What we needed to do was to try to distil down amongst all those concerns and all of these symptoms that were being put forward: Is there an objective case definition or something which we can ask people: "Have you got this symptom or have you not got this symptom", which we were able to do with those consultations with doctors. Having done that the important thing to do was to get a random representative selection of the community to answer those questions.

It was not a matter of "Let us go out and find a certain number of people who have got those symptoms and saying okay, therefore there are a lot of symptoms." You cannot do an analytical study

in that way. You cannot determine cause and effect. Certainly it is not an easy job that we have to do but we do our best, using the limitations that we have through epidemiological principles and using risk communication methodology.

The Hon. TONY CATANZARITI: What is the financial cost of the health effects of the air pollution in the Sydney Basin, who bears these costs and how are these costs measured?

Dr ROBINSON: That is an interesting question and a rather complex situation. If you actually look at the direct health costs, what it costs the health system to manage people who are deemed to have sustained an exacerbation of their illness because of the air pollution, we have a figure, I think it was in around 2003, that ranged between \$6.5 million to \$13 million a year. That figure is much lower than what is deemed to be the cost of pollution overall and the way in which the higher figure, which has been estimated sometimes as high as 700, is that the calculation includes the opportunity cost for people, the effect on the quality of life for people, the effect on the population and the economy as a consequence of earlier mortality.

It is really looking at a whole raft of other issues well outside the health system, so there is quite a high figure that has been postulated, as I understand it, by earlier studies that have been undertaken by DEC. but that is not the NSW Health experience. Ours is certainly a significant figure; \$13 million is not a small amount at all and that represents our estimate of the cost associated with the increased admissions or attendances for people with chronic disease is as a consequence of air pollution.

The Hon. CHRISTINE ROBERTSON: Has any work been done at all measuring differences in health between regional centres and the Sydney Basin in relation to indicators for pollution-induced health?

Dr ROBINSON: Certainly as part of our overall CATI survey, which is a computer assisted telephone interview that we conduct across the whole of the State, we sample about 12,000 to 15,000 people at any particular point of time and we ask a whole range of questions in relation to people's health. From that survey material we then will aggregate the results in an area health service area basis primarily and we can then map through the chief health officer's report the incidence of various reasons for admissions or for attendances.

As Michael said earlier, the types of diseases that we are talking about, the ones we are interested in, are influenced by a number of factors so, for example, simply to measure the level of attendances for asthma across the State is not going to give you an accurate picture of what air pollution happens to exist because the admissions for asthma are obviously going to be highly dependent on the sensitivity of individuals, their family history and the level of allergens that exist in the air. I think those who go to Canberra can see quite interestingly the number of allergens sometimes that are in the air in less populated areas. Whilst we can certainly have a picture of what is happening in different parts of the State we cannot, in any sense, link it to the level of pollution.

The Hon. CHRISTINE ROBERTSON: So we do not have any scientific indicators in relation to the Sydney Basin and asthma and, say, a regional centre like Tamworth?

Dr ROBINSON: No, but what I was referring to was the survey that we conduct as NSW Health.

The Hon. CHRISTINE ROBERTSON: Yes, I know.

Dr ROBINSON: If you want more specifics I will need to hand over to Vicky.

The Hon. CHRISTINE ROBERTSON: Are there other indicators?

Dr STAFF: Well yes, we certainly have the hospital in-patient statistics collection, which records the more severe end of the spectrum, that is, the admissions to hospitals, and we can count, obviously, the number of people who are admitted with a primary diagnosis of asthma, for example. That will depend on a lot of factors. That will depend essentially on what facilities are available. It is more likely that some people may be admitted to a hospital in a rural area, if it is a small hospital and

if a doctor is not readily available to see the person, just as a precaution, so there may be differences in admission practices.

We also have emergency department attendance data, and we will look at the rates of admission of people presenting with asthma-like symptoms. Unfortunately, there is not a consolidated database for general practice, which would be very good. A lot of Federal and State issues are aligned with that.

The major point that Denise and I are trying to make is that just measuring those conditions and differences in prevalence may not answer your question at all about pollution. Asthma rates may well be much higher in rural areas because of pollens and other allergens floating around in the air—dust and things like that. You could not use asthma prevalence by itself as an indicator of pollution to come up and say that pollution is worse in the country. That may not be the case at all. Asthma is particularly problematic because its major cause is viral; it has a viral illness exacerbating it and that can certainly swamp any of the background that we are looking at here.

That is why, as I explained before, with environmental health we look at actual measurements of exposure, pollutants in the air, and then we look at well-established relationships between exposure to that and prevalence of disease.

The Hon. MELINDA PAVEY: I want to return to the Lane Cove Tunnel. You said that you have two points where you will be consulting with the community prior to the opening of the Lane Cove Tunnel 12 months between each point. Did I understand that right?

Dr STAFF: No.

The Hon. CHRISTINE ROBERTSON: She is trying to get the date for the opening of the tunnel.

The Hon. MELINDA PAVEY: I am actually trying to find out what is happening before the opening of the tunnel and, as I understand it, there is a 12-month analysis period. I am trying to find out what you have done so far and when it happened.

Dr STAFF: What has happened so far is that research is being done by the Cooperative Research Centre for Asthma and Airways and the major party doing that is the Woolcock Institute. There are two components to it. They are doing a community baseline doorknocking survey of prevalence of symptoms.

The Hon. MELINDA PAVEY: When did that start?

Dr STAFF: That started I think around early June and that is a community-wide based one where people will be asked about symptoms. Another component of this study is primarily aimed at the sensitive group, which is children, where there will be more intense ongoing monitoring.

The Hon. MELINDA PAVEY: Is that being done by the Department of Health?

Dr STAFF: That is being done by the Woolcock Institute through the CRC. It is a very large undertaking and it takes an extraordinary amount of expertise to do that. It is the most appropriate body to do that. We are looking at people into the future. There is a more intensive follow-up group, which is the children, and they are also asking about symptoms from their parents and they are also having some objective lung function type non-invasive testing. That will give us a very good picture of what is going on.

There is obviously some uncertainty about when the tunnel is going to open. Our indication has been that it will be towards the end of the year or early next year. We do not know. All we know is what is in the public arena. We have had to design our study around those parameters and certainly what we plan on doing, we have now got the baseline stuff started and we are confident that we will be able to collect that information that we need prior to the opening of the tunnel.

Ms SYLVIA HALE: I would like to turn to the question of diesel locomotives. It is my understanding that the manufacturer specifications indicate that one diesel locomotive generates emissions equivalent to 6,000 diesel semitrailers and one diesel semitrailer has emissions equivalent to 10 to 15 brand new motor cars with emission controls, so diesel locomotives are an enormous problem. Have you monitored the potential impact, both on the immediate locality and on south-western Sydney when pollution is driven out there by the winds, of the expansion of Port Botany, which will see 40 per cent of the additional traffic being moved by rail but it will be moved by non-electrified diesel locomotives. Have you considered the health impacts of that expansion?

Dr STAFF: We are not experts in what gets produced from locomotives or what gets produced from semitrailers.

Ms SYLVIA HALE: Do you think you should be?

Dr STAFF: I do not think we should be. I think what we should be dealing with are health impacts. If we are provided with the information that says that this development or this initiative will have a net increase of this amount of pollution then we can certainly give an indication of what the likely health impact of that would be. I have not specifically been asked that question about the Port Botany expansion. I am not sure whether Vicky has any further information about that.

Dr SHEPPEARD: I guess I would just like to say that there was an environmental assessment and we looked at the various sources associated with Port Botany, about the trucks. We certainly were interested to find out what impacts the emissions from the trucks on the roads would have on community air pollution exposure. We were also looking at emissions from the operations on the site and from the locomotives. The noise and air emissions of all these sources were asked to be taken into account in assessing the environmental impact of the proposed expansion.

Ms SYLVIA HALE: But given that both the Government's submission to this inquiry and a lot of the material that is produced in relation to the metropolitan strategy and the expansion of Port Botany puts a major focus on the number of containers that will be moved by rail, do you think it is advisable for the Department of Health to address the potential impact on the health not only of people in the immediate vicinity of the port but people on the route and out in south-western Sydney, who will end up with the temperature inversions, the smog and the pollution?

Dr SHEPPEARD: Yes, and I think our assessment of those proposals does include looking at those issues.

Ms SYLVIA HALE: You said that you did not look at the locomotive emissions.

Dr SHEPPEARD: Yes, we did.

The Hon. MELINDA PAVEY: The EPA monitoring station was removed prior to the opening of the cross-city tunnel. Were you concerned about the removal of that monitoring station just before the cross-city tunnel opened given the resultant congestion and gridlock that faced the CBD? The main monitoring station was out of action and could no longer monitor the situation in the CBD.

Dr STAFF: We are not experts in telling how we should monitor the CBD. I think that is a question for the department—

The Hon. MELINDA PAVEY: But you are the Director of Environmental Health. I accept that the Department of Environment and Conservation makes the ultimate decision but have you had any concerns or raised this issue with the Department of Environment and Conservation?

Dr STAFF: I think the Department of Environment and Conservation is in the best position to decide where it is going to put its monitors to give us the best assessment of what the air pollution is in the CBD. If they feel it is not an appropriate place for it I think that should be—

The Hon. MELINDA PAVEY: But your department has not raised it as an issue or sought an explanation for why they did it. There could very well be a good explanation; I am just asking whether you sought any advice on it.

Dr SHEPPEARD: I think we were well briefed on the changes in the Department of Environment and Conservation monitoring system. There were a number of changes that were put in place. With the issue of the CBD, while it was not specifically replacing their peak monitor, the cross-city tunnel has its own network of monitors that were in place as part of the consent conditions.

The Hon. MELINDA PAVEY: Internally?

Dr SHEPPEARD: No, there is external monitoring of the cross-city tunnel at ground level and elevated receptors. Those are not trade-offs, but they were sited to monitor the impacts of the tunnel and the issue of the DEC monitoring network is a separate issue. But we were certainly consulted about that.

Ms SYLVIA HALE: I believe the department has done a study of the impacts of pollution, particularly in south-western Sydney. Is that correct? It is a recent study. It is out in the south west, where the metropolitan growth centre is being prepared.

Dr SHEPPEARD: That was the Department of Environment and Conservation assessment of air pollution.

Ms SYLVIA HALE: I thought there was a Department of Health study of birth weights.

The Hon. CHRISTINE ROBERTSON: That is a routine one.

Dr SHEPPEARD: We have a number of research activities under way. We recently published research about the effect of air pollution on birth weight and also on admissions for cardiovascular disease. We have a couple of others about asthma attendances and respiratory disease in the elderly. In those studies we looked at the entire Sydney Basin. These are ecological studies and to get appropriate power you need to have many years of data, a large population and air pollution data over many years. In those studies we take the data from the Department of Environment monitors, average them and look at how changes in air pollution affect those different outcomes. So, yes, one of those was looking city wide at how the changes in air pollution during different trimesters of pregnancy affected birth weight. There was a small but statistically significant effect on birth weight depending on what trimester of pregnancy that was experienced in.

Ms SYLVIA HALE: Were you able to pinpoint those in terms of geographical areas of Sydney?

Dr SHEPPEARD: No. In order to get sufficient statistical power for these studies we average the air pollution over all the monitors. There are some good reasons for that. One is that people do not spend their whole time near a particular monitor. You could allocate someone's exposure to a monitor because that is their residential address but then they work in one part of the city and recreate in another part. So there is some logical basis for that but there is also a statistical power basis that you need to incorporate all four million people to be able to get a statistical significance for these kinds of studies.

CHAIR: I assume that that report is publicly available.

Dr SHEPPEARD: Yes, it is published in a public journal.

The Hon. CHRISTINE ROBERTSON: Are there any socio demographics in that study at all?

Dr SHEPPEARD: Yes. Fortunately, we have very good mother and babies data collection in New South Wales—smoking, maternal age, antenatal care, hypertension and socioeconomic status.

CHAIR: I thank Dr Vicky Sheppard, Dr Robinson and Dr Staff for appearing before the Committee. There may be some further questions if you would be prepared to take them in writing on notice from us. Committee members have been asked if they have any questions on notice to provide

them to us by close of business on Monday. We would ask that you then respond by 6 September. If there are any difficulties with that date you can advise the secretariat.

The Hon. CHRISTINE ROBERTSON: Madam Chair, could a copy of that study be emailed to the secretariat?

CHAIR: Could you take that on notice?

Ms SYLVIA HALE: Is it on the web?

The Hon. CHRISTINE ROBERTSON: We could probably find it but this would be easier.

Ms SYLVIA HALE: If you have questions to get in by Monday evening it would be useful to have a look at it before then.

Dr SHEPPEARD: I can email it today.

CHAIR: If it is readily available we would like to receive it as soon as possible.

Dr SHEPPEARD: Sure.

CHAIR: Thank you.

(The witnesses withdrew)

GREGORY TAIT SMITH, Chief Executive Officer, Asthma Foundation New South Wales, , and

NICOLAS MARK BLESZYNSKI, Media Co-ordinator, Asthma Foundation New South Wales, affirmed and examined:

CHAIR: Thank you, Mr Bleszynski and Mr Smith. Do either of you wish to make an opening statement?

Mr SMITH: I will make a few key remarks.

CHAIR: Thank you, Mr Smith. In relation to the questioning, if at any stage you should consider that your evidence or certain documents should be seen in private by the Committee, the Committee will consider your request. However, the Committee or the Legislative Council may subsequently publish evidence if they decide it is in the public interest to do so.

Mr SMITH: I would like, firstly, to thank the Committee for the opportunity to again address the question of air pollution. The Asthma Foundation is a community-based organisation that for more than 40 years now has been working to generate research and understanding in the community about asthma to try to understand what causes asthma. Of course, asthma is an incredibly prevalent condition: one in six children and one in nine adults are affected by asthma. It is a national health priority. There are many, many people out there in the community who experience asthma as an extreme difficulty to breathe out. So, of course, the nature of the air that they are breathing in and their ability to breathe it out is a critical matter. We are very pleased to have this opportunity to talk to you.

In our submission we have highlighted a number of areas of air pollution that are essentially man made. Given that they are manmade factors, they are obviously factors that can be ameliorated and changed. We are really pleased to have this opportunity because we believe that knowledge of asthma, and particularly knowledge for people with asthma, is power. We think there are a series of actions that we would like to see governments—national and State—and political parties of all persuasions taking on and addressing. In particular, we would like to see some enhancements to the measurement of air quality, particularly in Sydney. We are concerned about whether or not we are properly and fully measuring the quality of the air. We would like to see some further work done on public awareness, particularly at key points where people may experience asthma—in tunnels and so on—but more generally as well, particularly around issues such as bushfires, bushfire burn-offs and so on, which we are able to advise people of and make them aware of.

We would very much like to see the Government of New South Wales go ahead with its full ban on smoking in clubs and pubs. Passive smoking, in particular, is a major cause of problems for people. In relation to cars, while we acknowledge that a good deal of progress has been made in the community in improving the overall quality of air, unfortunately we are all faced with the challenge that the technologies that are being used are highlighting other sorts of problems in that the engines and fuels are burning much more efficiently so the particles that they are still producing our smaller and lodging further down in people's respiratory systems and causing serious issues. So, even though we acknowledge that steps have been improved in the overall quality of air, we still think there are very large challenges.

I guess the biggest ticket item that we would want to put before the Committee and the community generally is one of saying that, while ever we rely on cars so heavily for our transport system, we are always going to have severe problems with air pollution. There is a lot of research evidence both within Australia and internationally that air pollution is a major cause of asthma problems. There is some evidence in the literature that asthma and air pollution actually cause more deaths than car accidents. So there is a whole set of issues there that we would like to talk about and we are pleased to have the opportunity to be here and to make a formal submission to the Committee.

CHAIR: Thank you, Mr Smith. You described the Asthma Foundation as a community-based organisation. Can you clarify whether you are primarily a research institution or whether your role is the care and support of asthma sufferers?

Mr SMITH: We essentially seek to represent the voice of consumers in the asthma world. So we are neither a provider nor a regulator. We have had a very large historical role in creating research. The previous group of people spoke about the Woolcock Institute. Woolcock, for example, started her work with funding from the Asthma Foundation of New South Wales. So throughout our history we have supported that type of medical research, and still actively support that sort of medical research. We also seek to raise awareness in schools and communities, particularly targeting families, young people and young children through outside-school-hours care, the asthma-friendly schools program and so on. I guess we seek to try to raise general community awareness of the prevalence of asthma and the factors that trigger asthma, which are very complex and diverse. So we are really a consumer-based organisation.

The Hon. MELINDA PAVEY: Where does your funding come from?

Mr SMITH: We are a not-for-profit organisation. Essentially, we receive a grant from the Department of Health through the non-government operations grants program of the Department of Health; some of that is linked to specific programs and some of it supports some of our operations. We have a number of programs funded by both State and Federal governments. So the Asthma Friendly Schools Program, for example, is a part of the national health initiative, given that asthma is a national health priority. Then we are involved out there in the competitive world in trying to raise funds and speak to the community and gain support. They are our main sources of funding.

CHAIR: Mr Smith, I am reluctant to put words in the mouths of previous witnesses, but NSW Health suggested that relying on a statistic such as incidence of asthma may not be a good indicator, for example, of things such as pollution because other factors come into play such as family history. Notwithstanding that, what work has the Asthma Foundation done on the incidence of asthma in the community? For example, do you compare the Sydney Basin to, say, the broader New South Wales community?

Mr SMITH: We are a small organisation and I would like to feel that I had the sort of research capacity to deploy that a large government department would have, but we do not. We have funded a lot of direct medical research because one of the great challenges with asthma is that the actual cause of asthma is not really known, and there are so many factors in the community that trigger individual responses for individual asthmatics. So it is difficult to say either that one factor causes everybody's asthma or another one does not, but there is a lot of published evidence available on the Internet and through other types of studies and so on that connect the prevalence of asthma with air pollution in particular. I might ask Nick to comment on some of these things as well because he is one of the key authors of the submission. If he wishes to add anything to that I will give him an opportunity to do so.

Mr BLESZYNSKI: I think that a lot of key international and Australian studies have made this link between asthma and pollution. In our submission I quoted a key study from southern California. They monitored neighbourhoods that were exposed to consistent and daily high doses of pollution and what they concluded was that the children living in those areas were particularly at risk from everything from eye, nose and ear infections through to wheeze, through to exacerbation of asthma, right the way through to a greater prevalence of asthma, through to mortality. So, effectively, I think studies like that have found that there is a direct link between pollution and the prevalence of asthma.

CHAIR: Do Government members have any questions?

The Hon. CHRISTINE ROBERTSON: No. Thank you very much for coming. Your submission is very exciting, interesting and useful.

The Hon. MELINDA PAVEY: How prevalent is asthma in the Sydney Basin? Is asthma more or less common in Sydney than other parts of Australia?

Mr SMITH: We have prevalence figures for the whole of the community. I think I have mentioned those already—one in six children and one in nine adults. I have been in the job a relatively short period of time so I am partly relying on Nick, but I am not aware of particular studies around the

Sydney area that would indicate that it is more prevalent in Sydney than it is in other communities. However, there is a very well established link between air pollution and a range of other factors which are more prevalent in the Sydney CBD just because of the geography and the size and nature of the population. So we would assume that asthma is at least as prevalent, if not more prevalent, in the Sydney basin.

The Hon. MELINDA PAVEY: But you have not had the ability to be able to really draw down on that and do research to that effect?

Mr BLESZYNSKI: No. As far as we know the breakdown goes for Australia and for New South Wales. So State breakdowns of the numbers are available, but for specifically Sydney I have not seen figures to that.

Mr SMITH: It is exciting to see the research that is now being undertaken by the Woolcock Institute and the study around the Lane Cove tunnel and so on. Some of those things will start to give us a much clearer picture and I think there is a more significant level of monitoring of asthma through the Department of Health and so on. So over time hopefully a clearer picture will emerge.

Ms SYLVIA HALE: I realise you may not have the data there to support any impressions but have you garnered the impression that there are pockets of asthma or it is more prevalent in some parts of the Sydney Basin than in other parts, or do you have no way of telling that?

Mr BLESZYNSKI: There have been studies that have suggested that, for example, the south-west of Sydney is a problem area. I think that even NSW Health who, as they said in their submission, do pollution monitoring, would acknowledge that that is a particular area and I think around the tunnel areas there seems to be a pattern emerging that perhaps there are problems around those areas, which I think the Lane Cove study will definitively show, hopefully over a period of time, is what the pattern is prior to the tunnel opening and then over forthcoming years we will obviously see how the prevalence of asthma and other respiratory conditions are affected.

So I think those kinds of definitive small-scale studies have not been available up to now but I think that Lane Cove is the first important step towards understanding exactly how tunnels affect us, because they are a relatively new phenomena as far as Sydney is concerned.

Mr SMITH: I guess the other point I would just make about it is that I think one of the challenges we all have in the health area is that it is only reasonably recently that we are beginning to be able to collect aggregated data. A big part of the challenge has been to basically get some systematic view of the prevalence of not just asthma but a wide range of conditions in the community. So it is pleasing to hear that the Department of Health is now collecting more data and beginning to be able to publish those sorts of reports and we look forward to being able to study those and learn more from them.

Ms SYLVIA HALE: In your submission you talk about several studies that have demonstrated a higher prevalence of chronic cough among children living close to main roads. Given that in order to bring an end to urban sprawl one of the aims of the metropolitan strategy is to concentrate residential development along major arteries, would this be a concern to you in terms of the impact on children living in high-density areas along those thoroughfares?

Mr SMITH: I would assume that wherever there is a higher density of people and therefore motorcars and other forms of air pollution and other problems that are likely to be associated with them, such as people planting inappropriate plants in their gardens or other things that we have not got within the submission, that yes, it would be a concern that there is likely to be a higher level of prevalence in those areas.

Ms SYLVIA HALE: Is it feasible to construct any sort of barrier—I am not thinking of cement or anything like that—but should there be a minimum set-back from those major arteries for any development to occur to allow for dispersion?

Mr BLESZYNSKI: Realistically, the difference of maybe a few feet or a few metres probably would not make a difference in terms of the pollution itself; it disperses over quite a wide

area. So I think simply the solution would be to try to reduce progressively the amount of pollution on the roads. There may be ways of mitigating it by, for example, people being aware of the problem, keeping their windows closed maybe during the peak hours when the roads will be busier. Things like that may mitigate it, but I do not think that it would necessarily solve the problem.

CHAIR: In relation to the statistic one in six children and one in nine adults are suffering from asthma, how does that compare with, say, 20 or 30 years ago? Is there a change in incidence in the community?

Mr BLESZYNSKI: Yes.

Mr SMITH: Yes, I believe there was an increase in the prevalence of asthma through the seventies and the eighties and I think the level of prevalence has now reasonably plateaued.

CHAIR: Has the foundation got any accurate statistics on that?

Mr BLESZYNSKI: Yes. Potentially the first epidemiological studies were done in the seventies and the Asthma Foundation helped to fund those. I think that was at the point at which we realised asthma was beginning to rise, and it did peak around about the late eighties; the death rate was up to almost 1,000 a year; it currently stands at about 311 for the last statistical analysis. So what we have done in the 20 years is basically make people more aware of the problem and actually make people more aware of how they could manage their condition. I think also as a consequence the community has become more aware of the things that cause asthma. For example, we have heard how air pollution has improved in some respects.

So I think a lot of that has helped to even out the prevalence of asthma, but it is not on the decline. I think at the moment we are waiting for the next set of ACAM figures which will probably tell us exactly if we are seeing a drop or it is levelling out. At the moment the last ACAM report says it appears to be levelling.

CHAIR: And are some pollutants more a risk for asthma sufferers than others?

Mr BLESZYNSKI: Yes, they are. For example, for people suffering from asthma, because such a wide range of things can trigger your asthma, there could be anything from pollen in the air and dust—which we find is a particular problem in spring—especially in rural areas like the Riverina, right the way through to things like bushfires, and also people are very susceptible to the ozone and also the nitrogen oxide that is in car emissions. I think many of the things we have been discussing today have a direct impact on people with asthma. For example, one of the huge issues is people who are just burning wood in their stoves to keep warm. What we are now discovering is that up to 50 per cent of the pollution in urban areas and up to 60 per cent in rural areas may be caused by wood burning.

As much as in the 19th century coal was the great enemy of industrial England—we all learned about that at school—I think wood has now taken over where coal left off. Now there is research suggesting that in terms of the small particles that we have heard a lot about this morning, wood burning produces two to three times as much as a car.

Ms SYLVIA HALE: If you had to balance the two would you say there was a greater impact from, say, passive tobacco smoking or from wood burning? Which would you say was the greater threat to the community?

Mr SMITH: I think you would have to say passive smoking, simply because the incidence of it is much greater and it continues all the time, whereas, obviously, people have their wood fires burning at particular times of the year. The challenge with asthma is that it is difficult to compare one thing with another because what affects one person's airways and produces a result for them will be quite different to what affects someone else. So it is difficult to compare those things. However, given the prevalence of cigarette smoking, I would have thought that passive cigarette smoking is probably more likely to be causing problems for more people than the woodburning fires are. That is not to say that woodburning fires are not important but just a different prevalence in patterns.

The Hon. MELINDA PAVEY: But children's own fitness and their own health in terms of obesity and fitness also have an impact on asthma, do they not?

Mr SMITH: Absolutely.

The Hon. MELINDA PAVEY: That is not indicated a lot in your submission because it is about air quality, but it is not just about air quality.

Mr BLESZYNSKI: No, that is correct.

Mr SMITH: That is right. Again, that is the issue with asthma, it is not just caused by air pollution, it is not just caused by people being unhealthy, it is actually a whole range of factors. But this inquiry is about the impact of air pollution so we are seeking to highlight a number of areas where we believe changes could be made that would improve the position of people with asthma. Could I just comment on that question you asked before? One of the changes that has occurred in relation to asthma in the community in the last 10 or 15 years is that the condition is now better able to be managed by many people because of changes in medication and so on. So for the average person with asthma they can actually manage their asthma better than they could before. So in a sense, I suppose, there is a feeling it is not as severe as it was before, but it does still impact a whole lot of people's quality of life; it puts a huge cost on those individuals and on the wider community paying for those medications, and there is still a very high level of hospital admissions and so on. The nature of the way in which asthma is managed has changed, but these sorts of pollutants and environmental factors still have a really adverse impact on people with asthma.

Ms SYLVIA HALE: With the increased use of Ventolin and other medications, is there a growing tolerance to them? Over time, will they become less and less effective, or do you expect their effectiveness to continue?

Mr SMITH: I think a lot of studies are being done by the academic researchers who are working in this area, who work in places like the Woolcock Institute and other institutes around the State, that are really trying to understand what the long-term impact of taking those medications will be. At this stage there is no evidence that they will decrease in effectiveness, but I think people are concerned about what it means for someone to be putting those chemicals into their body over such a long period of time, and I do not think people know the answer to that yet.

Mr BLESZYNSKI: And I think they are improving the ability to target the amount that a person needs. Each person needs a different amount, depending on the severity of their condition. Much of the development we have seen is that some people are overmedicating and some are undermedicating, so they are trying to target the amount of corticosteroid they are taking, to hopefully ensure that they are not putting an undue amount of potentially dangerous substance into their body.

Ms SYLVIA HALE: Your conclusion on page 17 sets out five points where you think the Government could take action. They range from reinstating CBD pollution to congestion tax, having an inquiry into air quality and cross-city tunnels, informing the public about the hazards of wood smoke, and passing legislation to make clubs and pubs truly smoke-free. I assume you regard those five matters as equally important and equally able to be performed within a very short time frame?

Mr SMITH: I do not know that we would see them all as equal. I think some are clearly measures that could be supported in a short-term way. Putting back and enhancing the measurement quality of air, and particularly focusing on measuring the smaller particles and reporting on them, is probably something that is a whole lot easier to achieve than changing our community's usage of motor vehicles. One is a long-term, major, societal change, whereas the other is a relatively straightforward government initiative. So too would it be a relatively straightforward initiative to enhance public awareness of asthma, and of the fact that if there is to be a burn-off for a certain period of time, that is made public and people can see on their weather forecasts on the television or whatever that there is going to be a burn-off happening at that time and they can react to that.

So there are changes that can be made. With regard to the ban on smoking, the Government has already said let us have a 100 per cent smoke-free environment in clubs and pubs. We would like to see that happen, and we would not like to see the regulations allow for what we think are fairly

fanciful notions about how you can somehow have 25 per cent of the room outdoor because it has some windows in it.

We believe there are some things that could be done quite effectively in the short term that would have a significant impact, and that longer-term, major, societal changes, such as trying to encourage us all to make less use of motor vehicles, are not things that can just be done overnight. We acknowledge that changes have happened in those areas, but as we become more efficient we are creating other types of pollution. We do see a hierarchy there, and we think some things could be done quite quickly.

CHAIR: If the Committee discovers there are aspects of our inquiry on which we require further information, would you be prepared to take questions on notice?

Mr SMITH: Absolutely. We again thank you for having the inquiry and for giving us the opportunity to appear before it.

(The witnesses withdrew)

(Short adjournment)

LESLIE ROBERT WIELINGA, Chief Executive Officer, Roads and Traffic Authority, Sydney, sworn and examined:

CHAIR: Do you wish to make a brief opening statement?

Mr WIELINGA: Yes. First I would ask that it be appreciated that the Department of Environment and Conservation and the Department of Planning are the co-ordinating and regulatory authorities for air quality; regulation is not a role that the RTA plays. Having said that, we do have a significant role to play on three fronts: observing and adhering closely to all relevant air quality regulations and conditions of approval; promoting clean air technology in cars and heavy vehicles; and participating in planning anti-congestion measures to obtain obvious air quality benefits.

We take these responsibilities very seriously—and we must. In the last decade there have been approximately one million additional motor vehicles and 600,000 additional drivers on New South Wales roads. Based on data published by the Transport and Population Data Centre, which is part of the Department of Planning, Sydney's population increased by 5 per cent between 1999 and 2004, and over the same period private vehicles increased by about 12 per cent. It does have consequences for the environment, and it does have consequences for air quality.

The most effective contribution the RTA can make is to play a role in the reduction of vehicle emissions and sound maintenance of vehicles. When you have a strategic look at vehicles and emissions, particularly in the Sydney area, and you look at how you might deal with it, you realise that there are controls in two areas. You are looking firstly at the individual vehicles, with the vehicle standards themselves, the way vehicles are maintained, and the fuels those vehicles use. For non-vehicle controls, you need to look at driver behaviour, the availability of alternative transport, and the way we go about our urban and infrastructure design when we are delivering projects.

We make a contribution in some of those areas. For example, staff from the RTA in our Vehicle Emissions Management Program represent the RTA on national committees such as the Land Transport Environment Committee and Austroads working parties to address vehicle standards and fuel. We are working very actively to improve both vehicle standards and fuel standards. In terms of tougher emission standards and fuel standards, the Euro 4 and Euro 5 are expected to reduce some noxious emissions from the New South Wales fleet by up to 70 per cent over the next 15 years, despite increasing traffic volumes. This is an important step forward. Some may say it is not far enough, but in the context of Australian consumers' commitment to car use, it is significant.

In terms of vehicle maintenance, I will mention briefly some of the actions we have in place; I can give you more details later. We have the development and implementation of a Clean Fleet Program, whereby we work with the trucking industry for them to maintain their vehicles. We are dealing with 3,000 trucks and 17 major operators at the moment. We are working with the Department of Environment and Conservation under the Smokey Vehicle Enforcement Program. We have light vehicle emission testing facilities at Botany and Penrith.

We also have mobile heavy vehicle emissions testing facilities, where we can go out to trucking depots and work with them in an emissions testing program. We run a TAFE diesel awareness course, and we are preparing a CD-Rom that gives people information about the benefits of maintaining their vehicles. We have a Particle Trap Program, for retrofitting devices onto trucks so we can improve their performance.

It is important that we focus on diesel trucks. While trucks are only a little over 9 per cent of the traffic on the network, they contribute more than 60 per cent of the particle pollution from mobile sources. Diesel engines tend to stay reliable for a long period of time, from 15 to 18 years. From the work that has been done over the last few years, we have good evidence that we can get at least 30 to 40 per cent improvement in emissions just by good maintenance.

With regard to alternative transport and planning, I will say briefly that we are actively involved with other agencies in delivering infrastructure for road-based public transport. Work is under way on a number of priority bus routes within Sydney. All of you would be aware of the red bus lanes, bus stops and the bus priority measures we are now putting into traffic signals.

An additional \$90 million has been allocated for the next three years in addition to the RTA's normal \$15 million annual budget for bus priority measures. We are looking at cycling and pedestrian facilities. The RTA works with local councils to produce pedestrian access and mobility plans. So far 72 have been prepared, and with councils we did seven in 2005-06. We prepare transport guides for high attractors of business, like our motor registries. I have an example here of Liverpool Hospital, and I have brought examples along for the Committee where we give details to people on how to get to these places using public transport.

(Document tabled)

I would like to thank you for the opportunity to make a contribution here today. I will do what I can to help.

The Hon. MELINDA PAVEY: Is the Minister for Roads and/or the RTA seeking approval for conditions of approval to be modified for the M5 East tunnel to allow for portal emissions to occur on a regular basis?

Mr WIELINGA: We are preparing a modification proposal at the moment, but it is not just for portal emissions—that is part of the package. It also includes filtration, it also includes the installation of 12 additional fans, and also as part of the package we have video detection of smoky vehicles. It is a comprehensive package rather than an individual outcome.

The Hon. MELINDA PAVEY: In May 2006 NSW Health stated that it had not been formally approached in relation to any modifications to the conditions of approval to allow for regular portal emissions in the M5 East tunnel, and recommended that a thorough health or risk assessment be conducted first. Will this occur?

Mr WIELINGA: As I said, we are preparing a modification process at the moment under the planning approval processes. Those assessments are being done as part of that work.

The Hon. MELINDA PAVEY: A thorough health risk assessment will be conducted, or has been conducted?

Mr WIELINGA: What we are doing is appropriate to obtain the modification. The health assessments have been done by the Department of Health in the past, and I would expect that they would continue to do that.

The Hon. MELINDA PAVEY: But they have not started that yet?

Mr WIELINGA: I am not aware of what Health is doing on the M5 East. I am aware that they are doing significant work in the Lane Cove Tunnel area at the moment, but I am not aware of what they are doing at this time on the M5 East.

The Hon. MELINDA PAVEY: In relation to the modifications that you are proposing?

Mr WIELINGA: No.

The Hon. MELINDA PAVEY: Who would know that?

Mr WIELINGA: I suggest you talk to the Department of Health. What we are doing is an application under the Planning Act. We are looking at the impact of what we are proposing to do. We are looking at mitigation measures associated with that. We will meet requirements of the Planning Act. An independent assessment on these proposals is undertaken by the Department of Planning, that is the process that is required under the Act.

The Hon. MELINDA PAVEY: In February 2005 when Cherie Burton was Parliamentary Secretary to Health Minister Iemma, Cherie Burton stated in a letter that more people died in Sydney as a result of vehicle pollution than car accidents. With this knowledge why has the RTA and the

Government failed to date to install filtration at any of Sydney's tunnels where this pollution is most concentrated?

Mr WIELINGA: A few things need to be appreciated. First, it needs to be appreciated that tunnels are a few kilometres in many hundreds of kilometres of roads in the Sydney network. That needs to be put in perspective. Second, there is a set of conditions of approval on projects, including tunnels, that are set by people independent of the RTA. Our obligation is to meet those conditions of approval, and we do.

The Hon. MELINDA PAVEY: But contrary to the recommendations of the World Health Organization, the RTA has constructed only mini stacks for each of the tunnels. What evidence does the RTA have that such low stacks will disburse fine and ultrafine particles safely as opposed to pm 10 coarse particles?

Mr WIELINGA: We meet conditions of approval that are given to us. When you have a look at each of the tunnel projects there is extensive monitoring inside the tunnel. There is extensive monitoring inside the ventilation stations themselves, and there are community-based and other monitoring stations monitoring background air quality in the vicinity of the tunnel. The outcomes of that monitoring process is put on our web sites, and various reports go to the committees that assist us with this stuff and to the Department of Planning. The evidence is in those reports.

The Hon. MELINDA PAVEY: In relation to gridlock and congestion in the CBD area of Sydney following the cross-city tunnel opening, what research has the RTA been able to access to look at the impact of that congestion in this particular part of Sydney?

Mr WIELINGA: There is extensive traffic assessment work that needs to be undertaken.

The Hon. MELINDA PAVEY: It has not been done yet, is that what you are saying?

Mr WIELINGA: The conditions require us to do an assessment 12 months after the tunnel opened and that is about to get under way. In addition, you have to appreciate that the project is still in ramp-up mode. Traffic is still settling down in the city. Construction was finished at the end of May in William Street, and as the traffic settles down we can start getting a better assessment of the impacts of the project.

The Hon. MELINDA PAVEY: That has not started as yet, but it is in the process of starting?

Mr WIELINGA: Yes. We created the platform for all of this work before the project opened. A number of screen lines in Sydney have had traffic assessment and traffic monitoring done on them, so we have a base to work from. As we get through the period of time as the project settles down we will do similar traffic assessments and we will have a comparison, and that will be put in report.

The Hon. MELINDA PAVEY: You mentioned the success you have had putting equipment on some of the old diesel trucks to grab some of the particles. Does the RTA have a view in relation to other alternative fuels, such as ethanol, in terms of its positive impact on the environment compared to traditional fuels?

Mr WIELINGA: It is not something that is driven by us, but we certainly support any alternative fuel. At the end of the day economic decisions will be made by motorists about those fuels. I do not control the market that determines whether this sort of equipment is built. Certainly anything that can reduce emissions and so forth is something that needs to be supported.

The Hon. MELINDA PAVEY: How many vehicles are in the RTA fleet?

Mr WIELINGA: I need to get an exact number for you. There would be several hundred.

The Hon. MELINDA PAVEY: Are there any plans to make ethanol-driven vehicles as a leading example within the community?

Mr WIELINGA: So far our strategy is to start progressively introducing hybrid vehicles. I think we have about 30 of those at the moment. The other part of our strategy is to reduce the size of the vehicles. We now have a lot more four-cylinder vehicles than six cylinder vehicles. We are continuing that progress. There is a target to get the rating of our fleet up to a certain level. I think we are about 10 at the moment. We are targeting to go as high as we can.

The Hon. MELINDA PAVEY: What is as high as you can?

Mr WIELINGA: I need to check the numbers.

The Hon. MELINDA PAVEY: Is 10 50 per cent of that?

Mr WIELINGA: No, it is not a percentage, it is a rating number. Each particular type of vehicle has a rating depending on its fuel efficiency and those sorts of things. The best vehicles are rated around 16 or 17, and the worst vehicles are around eight or nine. We are at around 10 at this stage and we are continuing to improve our fleet. We are very focused on it. Earlier I said that we had an emissions testing facility and a group within the RTA that focuses on this. There are circumstances where these vehicles are suitable. We have a lot of vehicles that carry heavy loads on the road. Our fleet does about 90 million kilometres a year doing road-based activities. For example, we need utilities on work sites to carry loads and those sorts of things. It is difficult to get the vehicles in those circumstances. We have maintenance trucks, low loaders, graders and all that sort of heavy equipment. It is difficult to change them, but the car fleet we can work on and we are working on.

The Hon. MELINDA PAVEY: What rating would it be if you had an ethanol-driven car?

Mr WIELINGA: I would need to get some advice. I am not an expert in this area, but I can find out for you, or one of the other agencies that deals with this area constantly could help you.

CHAIR: You can take that on notice.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: The Health Department recommended that there be a sign saying to wind up the windows when you go into the tunnel, but it has never been implemented. Can you tell us why that has not happened?

Mr WIELINGA: We have discussed this issue at other inquiries, as you would probably be aware. The RTA's approach at the moment is that we send out a notice to people in our registry advices. From time to time we send them out as they are renewed. We also have brochures in our motor registries that provide that advice. When you look at the way the road system works and you look at the amount of signposting that is on a road on the approach to tunnels and other structures, there are advisory speed signs, reassurance direction signs, incident management-type signs and VMSs all on the approach to these things. There is a limited amount of information that people can take in. Our focus is on safety and incident management on the approach to tunnels. We still have an open mind about it, but we think there must be a way of getting general knowledge out into the community about this. At the end of the day that sign will be there and people will focus on other things, the moving type signs and flashing signs on the approach to tunnels. There are not always opportunities to put those signs in those circumstances. Our first focus is on safety, reassurance direction and direction signs.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: If more people are dying from pollution than die in accidents then surely there is an irony in saying it is about safety when you mean crashes as opposed to pollution damage? Surely with the number of signs one is attacked by as one drives along the road—advertising signs and whatever else—you would be able to put up a sign? I register on line and I have never seen one of those things, and I have driven through the tunnel many times and that is when I needed to be reminded, if I did.

Mr WIELINGA: What I should say also is that we meet the conditions of approvals in those tunnels.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But you are meeting a recommendation. The Health Department recommend that there be a sign, but you have chosen not to put one up, is that correct?

Mr WIELINGA: What we have chosen to do is to provide information to the community through brochures and other means at this stage. I said that we have an open mind. We continue to look at this issue, but our focus is on safety on the approaches.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But it must be much more expensive to give a brochure to everyone in the State than it would be to put up a sign? Of all the people in the State, only a tiny fraction of them would go through the tunnel. You are wasting most of your money and not putting it where it is needed.

Mr WIELINGA: I understand that you have a strong view about this. I have tried to explain our position on it. I have said we have an open mind about it, and we will continue to look at it.

CHAIR: What evidence have you relied on to determine how much signage people can absorb as they are driving through an area?

Mr WIELINGA: There are standards. There are Ausroads standards for signposting on structures. There are also world standards about colours and what people can notice. There is a general rule of thumb that any sign with more than the 11 words on it people do not have time to pick up on it. You have to realise that when people are driving up to a particular structure, what is the information they are looking for at that particular time? As I said, we have speed stuff, we have incident management stuff that might have to come into play, and we have reassurance direction signs. People are constantly saying, "Am I in the right lane?" or "What lane do I have to be in to get to this area?" Those are the sorts of signs we focus on. Our traffic management people and our engineers look where they are placed.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Can I ask about cycleways? If you had a good cycleway could you not replace a lane equivalent in terms of the number of cars? Yet cyclists and bus stops share the same footpath on Victoria Road.

The Hon. CHRISTINE ROBERTSON: You have to convince everyone to do it first.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: They are not going to do it while they do not have a safe way of cycling.

The Hon. CHRISTINE ROBERTSON: They do not do it in the country.

CHAIR: We will have questions, not cross conversations.

Mr WIELINGA: I understand that. There is competition for the road space with public transport, cyclists, pedestrians and motor vehicles. In the last 10 years we have invested about \$250 million in cycleways and pedestrian ways. We are continuing to do that. All of our major projects that are implemented these days address those issues. We are working with local councils to develop cycleways. About 100 of the 152 councils have bicycle plans that the RTA contributes to on a 50:50 basis. I agree with you that cycleways are important, but there needs to be a balance between the different competition for road users.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Often there are incomplete links. Parked cars and cyclists share this space, or there is a terrific cycleway for a little way and then it suddenly stops dead. Obviously, it is up to you to build the link. You can build links involving huge underground tunnels, but you cannot build a link for a bicycle.

Mr WIELINGA: As I said, we work with councils to continue to expand the bicycle network. That is going on at the moment. As I said, a number of councils have bicycle plans. We are working with them and to continue to expand the network.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Does that mean you are putting a lot of money into it or are you asking them to?

Mr WIELINGA: I said that we funded bicycle plans with councils on a 50:50 basis. The bicycle facilities that go into the main arterial network are included in our new projects, as we develop them.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But not in the old projects along arterial roads?

Mr WIELINGA: Sometimes sections are compatible with councils' bicycle plans and we do some of that work. I can get you some details about where we have been building bicycle facilities in recent times, but I do not have them here with me now.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I am talking about Victoria Road, which is the one I would cycle along if I were game. There are very few links that make it a safe cycle from Ryde to the city, for example.

Mr WIELINGA: I understand but the decision must be made as to where you get the additional capacity to provide for this. Do we start resuming homes? What do we do?

Ms SYLVIA HALE: I am concerned about the discrepancy between the road usage traffic growth figures that appears to occur between the environmental impact statement and the base case financial model, and I am concerned particularly in relation to the Lane Cove tunnel. It would appear that in the EIS for the Lane Cove tunnel traffic growth was envisaged to be less than 1 per cent but the reality is that if you take the figures in the base case financial model the EIS predictions for 2037 will be reached by 2009 and in fact by 2016 there will be a doubling, a trebling or in some cases a very considerable increase in traffic. How do you explain the difference between the EIS projections and the financial model projections?

Mr WIELINGA: Do you have some numbers there?

Ms SYLVIA HALE: Yes I have. I am looking at a submission from the Mayor of Lane Cove Council, Councillor Ian Longbottom, and he has those figures there.

The Hon. CHRISTINE ROBERTSON: What submission is that?

Ms SYLVIA HALE: It is submission No. 13. The figures were taken from the papers that were released by the Lane Cove tunnel company recently, and those figures were confirmed at the cross city tunnel inquiry by Connector Motorways, which did the financial projections. They confirmed that their base case financial model will be realised. I would like your response to the discrepancy—and please take this on notice if need be—so that we can understand how there can be such a wide variation between two aspects of the one project.

Mr WIELINGA: I understand. The first thing is that I need to clear a bit of confusion. The base case financial model actually adds up the traffic on both the main tunnels and also the Falcon Street ramps. The EIS projections tend to deal with the main tunnel.

Ms SYLVIA HALE: Can you separate those figures out?

Mr WIELINGA: We can, but the other thing you need to appreciate is that the RTA, when it does traffic modellings or when its consultants do traffic modellings, gets information from the transport planning and data centre from the Department of Planning, which gives us information about expected distribution of commuters onto different modes. That is based on Department of Planning's assumption about land use development, where that will occur in Sydney, what the nature of it is and all those sorts of things. When the Lane Cove tunnel company, now called Connector Motorways, did its traffic projections for the project it came up with very similar figures to ours in 2006 but they had a higher growth over the period of time, which is what you are talking about.

The reason they came up with higher growth over that period was that they brought in Access Economics to do their own land use assessment of what would happen, how that particular area of Sydney, which was their catchment, would develop. They are assuming that more economic development will occur in that part of Sydney, and because of wealth factors there will be a higher traffic use than what the RTA had been predicting using the Department of Planning stuff. So essentially they were wealth factors. They also made assumptions about expansions of the peak over longer periods of time, and they came up with a different projection to what we had. They were very well advised. They had Access Economics. They had other independent, very competent traffic advice. There was a difference of view between us at the time. They may be right; we may be right.

Ms SYLVIA HALE: Do you still stick by your original EIS projections?

Mr WIELINGA: We constantly update those projections but the work that was done at the time was sound.

Ms SYLVIA HALE: But it is six, seven or eight years down the track. The suggestion is that it was very unsound, that it was not a realistic forecast as to the likely traffic increase.

Mr WIELINGA: What we have are two competent traffic modelling people. The end of the day assumptions about land use have a critical influence on the amount of traffic that is using the network. The assumptions about what mode choice people make have a critical input into the assumptions and the outcomes. We have worked with the Department of Planning to make our predictions. This particular motorway company had different projections to ours. At the end of the day we will see what happens.

Ms SYLVIA HALE: But it is a bit late then if we have massive air pollution, massive traffic congestion, massive induced traffic on the tunnel which has come at enormous cost to the public purse. Has there been any tunnel project where the EIS forecast has actually corresponded to the reality of the tunnel usage?

Mr WIELINGA: I would have to come back to you on that.

Ms SYLVIA HALE: Could you please do that? As I said, I would be very interested if you would look at this submission and reply specifically with detail.

Mr WIELINGA: Okay, will do.

Ms SYLVIA HALE: In that submission it also makes the point that in 2004, 47 per cent of trucks registered in the Sydney area were more than 10 years old so presumably they do not comply with modern emission standards. What does the RTA propose to do to phase out the use of these trucks?

Mr WIELINGA: It is not something that we control. Emission standards are set at a national level and fuel standards are set at a national level. No State in this country says to truck drivers, "take your vehicle off the road because it doesn't meet vehicle standards".

Ms SYLVIA HALE: But prior to registration of a vehicle, either on an annual or a biannual basis, could you require those trucks to see whether their emissions meet appropriate standards and not register them if they do not do so?

Mr WIELINGA: The approach that we are taking at the moment is a co-operative approach. I spoke to you about the clean fleet program. We have a number of operators, over 3,000 vehicles that work with the clean fleet program. The practical reality is that when people properly maintain their vehicles those vehicles operate more efficiently and we get that 30 per cent or 40 per cent reduction in emissions. We are working with the industry to bring it on board. It is mostly carrot to the commitment at the moment. We are not proposing to hit them with a big stick at this stage.

Ms SYLVIA HALE: But for those people who do not properly maintain their vehicles and are prepared presumably to put the health of the general public at risk, do you not think you require

something of a sterner measure to ensure that their vehicles comply with the maximum emission standards?

Mr WIELINGA: When vehicles become bad and do not comply they tend to emit smoke. There are already regulations about smoky vehicles and there are already fines associated with people. You must remember that a lot of these old trucks on the road are operated by owner-drivers. To turn around and say, "take your vehicle off the road", we just need to carefully think about the implications of that. We have to work with them to get better standards.

Ms SYLVIA HALE: Can you provide the Committee with details of how many truck owners, drivers, or vehicle owners have been prosecuted for smoke emissions and those sorts of violations over the past 10 years?

Mr WIELINGA: The administration of the regulations for that is with the Department of Environment and Conservation. The question should be directed to them. They do the prosecutions.

The Hon. TONY CATANZARITI: Can you advise the Committee of the relationship between Action for Air and Action for Transport? What is the role of the RTA in implementing Action for Air and Action for Transport?

Mr WIELINGA: Action for Air was developed back in 1998, at a similar time that Action for Transport came out. Action for Transport is right across the transport mode. There were some roads to be developed, some other public transport rail and bus projects. The RTA is actively involved in road projects and in road-based public transport, with a large investment in transitways and bus lanes that we work on. If I am going to summarise our contribution to Action for Air, we have spoken about reducing vehicle emissions. We have been involved in national committees looking at vehicle standards and fleet standards. I mentioned our clean fleet program, our diesel retrofit program, the diesel emissions awareness training course and the smoky vehicles program, our bus priority measures. We have been developing new enforcement cameras for specific use in bus and transitway lanes, and we have developed park and ride facilities at Tower Street, Baulkham Hills, and Barclay Road, North Rocks. We provide free parking for M2 motorway bus commuters at those locations.

We have tele-working centres at Gosford and Penrith, and we run hot desks at Parramatta to reduce the travel by own people. I mentioned the access guides, samples of which I provided to the Committee; cycling, which I have been asked to come back with a little more information on, with our \$250 million investment over the past 10 years. We are spending \$64 million on the Albury-Wodonga bypass and cycling facilities. That is an example of that. Five Islands Road, Great Western Highway, Pacific Highway—they are some projects that I said I would come back with some details for you. We funded 96 local council cycleway projects in 2005-06; 245 kilometres of cycleways were delivered in that year in New South Wales. In the coming year \$7 million will be spent on cycleway projects. I mentioned the pedestrian access and mobility plans that we work with local councils to prepare. There is a lot of overlap between these two particular programs. It clearly defines what roles agency have and we do our bit.

The Hon. CHRISTINE ROBERTSON: I am going off on a bit of a tangent here and it relates to issues that people seem to have in relation to pollution levels in our tunnels or on our expressways. Do you know if any studies have been done on what would be happening to pollution levels and the traffic grid in Sydney if there had not, over the past 15 to 20 years, been any work done on expressways and tunnels and tollways within Sydney itself? Has any work been done in that area?

Mr WIELINGA: I am not aware of the detailed work. The Department of Health, the Department of Environment and Conservation and perhaps the Department of Planning would know the details.

The Hon. CHRISTINE ROBERTSON: It is a projection issue, is it not? It is about what would have happened if we had not.

Mr WIELINGA: That is exactly right. Fuel standards are obviously reducing emissions. I mentioned earlier that we are expecting a 70 per cent reduction in some of the key noxious emissions with fuel standards and vehicle standards in the future, despite increasing traffic flows.

The Hon. CHRISTINE ROBERTSON: What do you think would be happening in Sydney if there had been no work to funnel traffic from one end of Sydney to the other over the past 15 odd years?

Mr WIELINGA: I think what you need to focus on is the strategy that gets the right balance. Some people will want to use cars; some people will want to use public transport. Providing those facilities obviously has a big influence on what people do. But if fuel standards had not improved, obviously air quality would be worse than what it is now. A lot of people say that air quality is very bad in Sydney, but compared to a lot of overseas major cities it is quite good. That is the reality. The Department of Environment and Conservation could give you information about that.

CHAIR: Is that a benchmark that you work to?

Mr WIELINGA: That we work to?

CHAIR: Yes.

Mr WIELINGA: I said earlier that we were not a regulator. We look at what is required, the conditions of approval, and we do our work to meet those requirements.

The Hon. CHRISTINE ROBERTSON: So organisations like the RTA and planning organisations in a city like Sydney have to work very hard on—and excuse this expression—the not-in-my-backyard syndrome. We have a lot of submissions that have come from persons who in some ways would appear to be somewhat objective but often are about, "let's not have this in my backyard". How does an organisation like the RTA balance that with the requirement to deliver an efficient road and transport system? This is a very heavy philosophical question—

Mr WIELINGA: It is a little but I will have a go at it.

[Interruption from the gallery.]

The Hon. CHRISTINE ROBERTSON: —in relation to the pollution that occurs for individual communities?

Mr WIELINGA: When you are preparing planning approvals for major projects, you get an extensive range of views about what should happen. The range of views extends from "let us not build any infrastructure at all" to "build a different sort of infrastructure" to issues such as where it should be located and what it should look like. At the end of the day for a planning authority such as the Department of Planning or an agency such as the RTA, it is about bringing all those views in and understanding the issues, rather than the personal view.

What is the issue, what is the impact associated with that and how do we go about addressing it and how do we get the right outcome for the total community. That is closely followed by how do we address the local people particularly more directly affected by the project? At the end of the day it is about understanding the issue, what are the options we have to deal with it and what is the best way to go forward.

CHAIR: Are health costs of air pollution factored into the cost benefit analysis of major projects for which the RTA is the major proponent? If so, how?

Mr WIELINGA: Dealing with externalities is a very difficult issue. With cost analysis you probably have some evidence about that already, I am not sure. When trying to price this on willingness to pay or the cost of benefits and so forth, there are no definite figures available. A lot of people have tried to do it. We have a road cost benefit analysis figure that is based on road user costs. In our environmental impact assessment [EIS] we address issues such as what you are talking about, but we tend to do it at a broader level. For example, in the Lane Cove Tunnel EIS we tried to put a price on some of the particle emissions outcomes. We are continuing to develop that area.

CHAIR: When the RTA is the proponent, does the environmental assessment process account for air quality issues including the health impacts of air pollution? How do you account for it?

Mr WIELINGA: Again we focus on the type of air quality condition outcomes that we are trying to achieve. The Department of Environment and Conservation have a set of monitoring stations around Sydney and they have key targets obviously. We do detailed modelling associated with these projects where we try to predict the outcomes or change in outcomes as a result of the project to fit in with those targets.

Ms SYLVIA HALE: Given the success of London's experiment with a congestion tax, what is the RTA's response to a proposal that a congestion tax be introduced in the Sydney central business district [CBD]?

Mr WIELINGA: That is a matter of government policy, it is not appropriate that I comment. In recent times there has been a lot of discussion in the political arena about that.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Who pays for the changes to the M5 tunnel? Do you pay or do the tunnel owners pay? Does the taxpayer pay or does the tunnel owner pay?

Mr WIELINGA: It is being negotiated at the moment. Any new initiative on a project that is different from the original approval and different from our contract in place, we would pay for those changes.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: As far as diesohol is concerned—

Mr WIELINGA: I am sorry, I missed that word.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Diesohol, a mixture of diesel and ethanol. If a certain amount of ethanol was available, and that is my understanding, would it not be better for pollution to put it into diesel planning to gasoline in terms of the air outcome benefit? I understand that diesohol burns cleaner than straight diesel. Is that true?

Mr WIELINGA: I am not an expert in that area. You would be better to get advice from an expert, which I can try to chase up for you.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I will ask the Department of Environment and Conservation.

CHAIR: Are you taking that on notice?

Mr WIELINGA: No, the DEC should answer.

The Hon. MELINDA PAVEY: In relation to vehicle kilometres travelled [VKT], the Action for Air report includes targets for reducing VKT by 2011 and a reduction in total VKT by 2021. Do you think those targets can be reached?

Mr WIELINGA: Earlier I mentioned that there are a million extra vehicles in Sydney in the past 10 years and the population in that period grew by about 5 per cent, car usage by 12 per cent. The reality is that VKT is climbing slower than population growth. When you have a look at VKT per capita, it is starting to level out. There is a growth in VKT, but not as fast as the population.

The Hon. MELINDA PAVEY: Can those targets for 2011 and 2021 be reached on the current trend?

Mr WIELINGA: I do not know. You have to ask the people who are monitoring this in more detail. Have you spoken to the Department of Environment and Conservation?

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is it possible with the roads, particularly the bus way at Liverpool transitway—

Mr WIELINGA: The Parramatta transitway, yes.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: —and the new M5, would it be possible to convert those with light rail coming along? Are there easements for those situations?

Mr WIELINGA: I am not aware of any easements. As far as the engineering and feasibility of doing that, we would have to do some work on that to confirm it.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Presumably you would lose a lane and would have to balance that lane loss, would you not?

Mr WIELINGA: Light rail generally goes down the middle of a corridor and people come out from the side of the road onto them. Whether you could fit light rail into a single 3.5 metre road lane I would be surprised. I would have to take advice on that.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is it a policy to have easements with major highways, as in Western Australia with the new highways around Perth?

Mr WIELINGA: I am not aware of any detailed plans at the moment. You will know from the Westlink M7 corridor that we provided a wider median, 15 metres wide, to provide for future public transport facilities in the middle of that corridor. Other than that, I cannot give details.

CHAIR: You have taken some questions on notice and the answers need to be submitted by close of business on Monday. The Committee may have additional questions to be put to you in writing, and they will need to be responded to by 6 September.

Mr WIELINGA: I am happy to take extra questions.

(The witness withdrew)

CHAIR: I remind all people in the public gallery that although hearings are open to the public and we welcome people's attendance, everyone in the public gallery must remain quiet at all times.

IAN JAMES GLASSON, Director General, Ministry of Transport, examined:

CHAIR: In what capacity do you appear before the Committee?

Mr GLASSON: As a representative of the organisation.

CHAIR: Do you wish to make a brief opening statement?

Mr GLASSON: I understand that time is tight, I could give a brief summary or go straight to questions.

CHAIR: If you have a genuine summary and you want to emphasise a couple of points the Committee would give you that indulgence.

Mr GLASSON: I am happy to go straight to questions.

The Hon. MELINDA PAVEY: Why did the Ministry of Transport decide in 2004 that the new bus fleet would run on diesel, after stating originally that it would run on liquefied petroleum gas [LPG]?

Mr GLASSON: The total bus fleet?

The Hon. MELINDA PAVEY: The new bus fleet?

Mr GLASSON: I was not there in 2004 and am not aware of that statement. I would have to take that on notice.

The Hon. MELINDA PAVEY: Okay. Considering that diesel emissions have been associated with respiratory and other negative health impacts, it would be interesting to know whether that information was considered in coming to the decision to change the new fleet purchases from LPG back to diesel. I would like to know if NSW Health was consulted in relation to that decision.

Mr GLASSON: Sure.

The Hon. MELINDA PAVEY: Overall what are the major sources of air pollution by the transport sector in the Sydney Basin?

Mr GLASSON: The predominant source would be private cars. In terms of the energy consumed per passenger kilometre over a 12-month period, bus and rail are acknowledged to be the most efficient. Cars are in the order of 50 per cent more energy use, and ferries, by their very nature, are the least efficient in terms of energy consumed per passenger kilometre.

The Hon. MELINDA PAVEY: Per capita?

Mr GLASSON: Yes.

CHAIR: What is the policy of the Ministry of Transport for monitoring buses for efficiency question mark

Mr GLASSON: Under the new contracts all bus operators must participate in the RTA Clean Fleet Program. They provide information to the ministry on their adherence to that program. In terms of replacement of buses we specify current minimum technologies available. As they change, we change the specifications.

The Hon. CHRISTINE ROBERTSON: The Audit Office 2005 report "Managing Air Quality" found that Action for Transport is yet to include an integrated public transport policy—that is actually in the report. What action has the Ministry of Transport taken to develop an integrated public transport plan since the publication of that report in early 2005?

Mr GLASSON: There is an integrated policy towards public transport in Sydney now which focuses predominantly around the use of heavy rail and expansion of the heavy rail network and the implementation of the strategic bus corridors, which came out of the Unsworth report, and are being implemented via the new metropolitan bus contracts.

The Hon. CHRISTINE ROBERTSON: Recognising that one of the major issues in relation to air pollution is private cars, what campaign or push can the Government deliver to increase the use of public transport and drop the private car consumption by the community?

Mr GLASSON: In a policy sense the most important thing is delivering efficient public transport as an alternative. Anything beyond that is really a matter for government policy and is probably not for me to comment on. We need to deliver an integrated public transport system. I understand you are talking to the Director General, Department of Planning, later this afternoon. Certainly the metro strategy deals with public transport and transport at the local level, and the subregional and metropolitan areas.

Whilst we always continue to try to increase the attractiveness of the capacity of public transport across the networks, the journey to work by public transport mode share for the Sydney CBD is quite high and always has been relatively high on the world basis or with other Australian cities. Where there has been a lot of concern over a long period has been the public transport network across broader Sydney that supports people's journeys either to connect to the rail network or to connect to local centres; whether that be for health, education or shopping. The strategic bus corridors in the metropolitan area provide that integrated public transport network across the broader metropolitan area. Over time the results of that will be seen in the take-up of public transport in those areas. People will have a choice regarding a second or third car. That is always a very difficult issue; people do buy multiple vehicles and you need to put something in place that gives them an option, an alternative.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: How big is the Department of Transport relative to the RTA in terms of the number of people?

Mr GLASSON: I would have to get back to you on the final number in the ministry, but there are around 260 people.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: When you talk about running a good public transport system, are you involved in the planning or advocacy for trains or light rail as part of that?

Mr GLASSON: Yes we are, in conjunction with other agencies.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: The perception is that the RTA knows what roads it wants to build but nobody seems to know what train lines and light rail lines they want built and therefore we get a road network. What would your comment be on that situation?

Mr GLASSON: My comment on that at the moment would be that I think there is a very clear outline in terms of expansion of the heavy rail network, both with the completion of Epping to Chatswood but also the north west and the south west and the future CBD linkage. I think that is apparent in State infrastructure plan and the forward estimates regarding a different balance between investment in rail and investment in road. In terms of road, road space is very important for public transport for buses and taxis. The strategic corridors are an acknowledgment that there has got to be an improved priority given to public transport in some of that road space.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I am talking tracked vehicles as opposed to buses. Buses seem to be the cop-out, so that we build our roads and then we say it is all about buses. What about some tracked vehicles, which have huge implications for property development along those corridors?

Mr GLASSON: Such as light rail or bus rapid transit?

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: No, not bus rapid transit. I am talking heavy rail or light rail really because people will build big buildings along heavy rail or light rail more than they will along arterial roads, whether you say it is a bus way or not?

Mr GLASSON: I think the expansion of the heavy rail network is well articulated at the moment. If you look at the metropolitan strategy—and you can take this up further with the Department of Planning this afternoon—a lot of the growth in Sydney is articulated around that existing heavy rail network and the growth in the heavy rail network.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But the growth in the heavy rail network has been minimal over the last 50 years, has it not, apart from Epping to Chatswood and the little link down south; there has been virtually minimal growth.

Mr GLASSON: But your proposition to me a minute ago was that we are spending more on roads than we are on heavy rail. My answer was that if you look at the State infrastructure plan, that is not the case going forward.

The Hon. MELINDA PAVEY: Can you give us an outline of how the heavy rail infrastructure will change over the next five years? What is being invested in?

Mr GLASSON: Within the next five years you will have the opening of Epping to Chatswood, you will have the purchase of land to support the north-west, south-west rail lines and the commencement of the detailed planning for the construction of those lines.

The Hon. MELINDA PAVEY: What about the extension of the heavy rail network around Port Botany? Where will we be there in five to 10 years?

Mr GLASSON: In terms of the freight network?

The Hon. MELINDA PAVEY: Yes, which has a huge impact, obviously, on diesel particles and the quality of life for people in that region.

Mr GLASSON: I do not have specific accountability of that at the moment but I am happy to tell you what I know. There was an amount of around \$70 million, I think, invested in upgrade of that connection to Port Botany and my understanding in the arrangements that were reached with the Australian Rail Track Corporation to take over some of the interstate network with the New South Wales it provides for an uptake on the connections to Port Botany and a further investment in that as required.

The Hon. MELINDA PAVEY: And the freight interchange at Enfield, where is that at?

Mr GLASSON: That is not something I can comment on. That is accountability of a different Minister.

The Hon. MELINDA PAVEY: It is still a planning issue.

Mr GLASSON: It is a planning issue and the Freight Infrastructure Advisory Board report, I think, the Premier referred to Dr Richmond for advice on and I am not aware if that advice has yet been given.

Ms SYLVIA HALE: In relation to the southern Sydney freight, which I know has been progressed in conjunction with the Australian Rail Track Corporation, is that line to be electrified or not?

Mr GLASSON: No, my understanding is that that will be a diesel line.

Ms SYLVIA HALE: Has any estimation been done of the impact of diesel-powered locomotives on air pollution?

Mr GLASSON: Not that I am specifically aware of, but I would assume that there is coverage of that in the environmental impact statement, which is on exhibition at the moment, I understand, or has recently been on exhibition.

Ms SYLVIA HALE: But it would not surprise you to learn that the emissions by diesel-powered locomotives are far in excess, apparently, of those by semitrailers?

Mr GLASSON: I am not aware.

Ms SYLVIA HALE: Ms Pavey earlier referred to the purchase by the State Transit Authority of buses and in fact on page 17 of the Government's submission it says "The Government will provide 505 State Transit Authority buses including 250 ultra low emission Euro five diesel buses and 255 compressed natural gas buses for heavily trafficked inner city areas." It then goes on to say, "These will result in a number of emission savings". Can you give a breakdown of those emission savings when you are looking into the matter in relation to Ms Pavey's question and say how many of those emission savings will be as a result of the compressed natural gas buses and how many will result from the use of the diesel buses?

Mr GLASSON: I am happy to take that on notice.

CHAIR: Has the Ministry of Transport any role in monitoring the community's work-living patterns; where they work and where they live?

Mr GLASSON: That is done through both the national census and through the work of the Transport Population Data Centre, which is housed within the Department of Planning. We clearly liaise with them on issues that are of interest to us but they do the work and process the results.

CHAIR: Are the health costs of air pollution factored into any cost benefit analyses of major public transport infrastructure projects and if so how?

Mr GLASSON: I am not aware of the detail of that but I am happy to come back to you on that detail.

CHAIR: The Committee may have further questions for you at a later time. Any further questions must be submitted to the Committee in writing by the close of business on Monday and we will submit them to you for reply by 6 September.

Mr GLASSON: I am happy to assist.

CHAIR: Thank you for your attendance today and for your co-operation.

(The witness withdrew)

ROBERT JOHN SENDT, New South Wales Auditor-General, New South Wales Audit Office, 1 Margaret Street, Sydney, affirmed and examined, and

SEAN MICHAEL CRUMLIN, Director, Performance Audit, 1 Margaret Street, Sydney, New South Wales Audit Office, sworn and examined:

CHAIR: Do either of you wish to make a brief opening statement?

Mr SENDT: We are happy to assist the Committee with its inquiry. Our audit "Managing Air Quality in New South Wales" was released in 2005. It was one of a series of audits with an environmental theme that we have undertaken as part of our performance audit program. The quality of our air is a key issue for everyone. It directly affects our health, our environment and even our economy. It is also an important part of developing sustainable cities.

Our report reviewed the Government's efforts to improve air quality. At the time of our report New South Wales was already meeting four of the six nationally agreed 2008 air quality targets—for nitrogen dioxide, sulfur dioxide, lead and carbon monoxide. Of the other two—ozone and particle matter—New South Wales was not yet meeting the targets and may not do so by 2008. On ozone, the more serious of the two, New South Wales exceeded the national standards more days per year than any other State. Motor vehicle emissions, particularly private car use, are the main reason for the ozone problem. It has been estimated that air pollution from vehicles costs Sydney alone about \$1.5 billion a year in hospital admissions, emergency room visits and absenteeism.

Vehicles have become more efficient and fuels cleaner, but these gains are offset by our ever-increasing use of the car and a trend towards larger vehicles. By 2020 car use is expected to increase by a third. In 2004 only one in nine trips was by public transport. These trends are clearly not sustainable. There are no simple solutions. Managing air quality is the critical issue facing governments everywhere. The substances that pollute our air can interact in complex ways, which scientists do not fully understand.

In our audit we focused on the progress with Action for Air and its complementary plan Action for Transport 2010. We examined strategies in these plans to curb motor vehicle usage, encourage greater use of public transport, promote cleaner cars and fuels, and integrate air quality in transport planning. A key aim of the strategic plans was to reduce the use of private cars, the most significant threat to urban air quality. We found that government actions had failed to achieve this reduction.

Air quality is an issue that cuts across government structures. No single agency has overall responsibility and authority to improve air quality. For this reason we need a better-planned and co-ordinated approach, with more effective monitoring, review and reporting. We have made a number of recommendations aimed at strengthening Action for Air, defining agency roles, improving transport planning, assessment and service delivery, helping local councils manage air quality, providing better information to the public, and better managing air toxics and the impacts of greenhouse gases on air quality. We would be happy to answer any questions the Committee may have about the report.

CHAIR: Thank you, Mr Sendt. Certainly in that performance audit you identified the fact that no single agency has responsibility for air quality in Sydney. In fact, in the submission that you have provided to us you recommend that NSW Health be more involved in air quality. Since that audit report in 2005 are you aware of any significant policy changes by the Government as a consequence of the report?

Mr SENDT: We have not conducted detailed follow-up work of our performance audit. Mr Crumlin might be aware of some changes but I am not.

Mr CRUMLIN: No.

The Hon. MELINDA PAVEY: You are not aware of any changes? So you have not been listened to as far as you know, not having done a formal follow-up.

The Hon. CHRISTINE ROBERTSON: That is not what the man said. He said they have not done a follow-up report.

CHAIR: As a consequence of no single agency having that responsibility, do you believe air quality in the Sydney Basin has not been analysed as rigorously as might have been appropriate?

Mr SENDT: Certainly that is one aspect of it. We believe greater co-ordination was needed between the various agencies that either have responsibility for health or environmental issues but also between those agencies that were involved, for example, in transport and planning. I can expand on that if you wish, Madam Chair, but that was the nub of our argument: greater co-ordination and more specific responsibilities need to be put in place.

CHAIR: The other issue is the fact that you noted that in both Action for Air and Action for Transport there were no clear targets or time frames in relation to monitoring and reporting processes. Can you elaborate on this point?

Mr CRUMLIN: We did not actually say there were no targets or time frames. We said that there were gaps in the framework of targets and time frames.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Did I note somewhere in your report that you spoke about a loss of scientific expertise by the Department of Environment and Conservation? Did I get that from you?

Mr SENDT: No.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Do you know whether there has been such a loss of expertise?

Mr SENDT: No, we do not.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: It has been said that in Victoria there is independent monitoring of industrial pollutants. In other words, they pay into a fund and then that fund is given to Monash University or some independent agency that is responsible for monitoring the pollutants from industry and producing reports that are transparently available. Do you think that is a better model than the model we have in New South Wales?

Mr SENDT: I am not aware of the details of that system in Victoria. It would depend on whether there were any directions given as to what should be monitored and where. The Government may clearly have priorities in terms of regions of the State or the types of pollution that it wants to address and whether there are directions given to the university in that case as to what it should focus on or whether it is left to the university. I can see difficulties with both approaches. An approach where an independent party determined what areas they would examine might lead to an inconsistency between what the Government saw as important in terms of regions or types of pollutants and those of the body undertaking the work. But it is not a model that I am aware of.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: The alternative in New South Wales, I gather, is self-regulation according to a licence. Is that not the model that we have here? That is what we understood from the DEC this morning.

Mr SENDT: There is licensing of point-source pollution—that is probably the best way to describe it.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I am talking about industry.

Mr SENDT: Yes. But in terms of motor vehicles, for example, there are quality standards set for fuel and for motor vehicles but there is no licensing per se of motor vehicles in aggregate to limit their pollution.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: No. But speaking of point sources in industrial situations, do you think the auditing or monitoring system for pollutants should be an

independent one, presumably based on the best scientific evidence that the independent monitoring person would use obviously depending on the type of industry?

Mr SENDT: If that is the model in Victoria you would need to be confident that there was a robust body of scientific expertise out there that would undertake that work. I am not qualified to speak on what the Victorian experience has been.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: No, but the point is that the New South Wales system would seem to be licensing of self-regulation. Do you think that self-regulation is good with regard to the production of industrial pollutants?

The Hon. CHRISTINE ROBERTSON: Is this from the audit report or are you seeking Mr Sendt's general opinion?

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I am seeking his general opinion on the objectivity of checking people.

Mr SENDT: I think our early report on regulating pollution, which was not specifically addressed at air pollution but across all forms of pollution, did indicate some difficulties with the self-regulation approach. I do not think anybody would argue that self-regulation is necessarily or inherently a perfect system.

Ms SYLVIA HALE: This may appear to be a fairly inconsequential matter but it was raised in submission No. 15 by Mr Clifford Maurer. He refers to air quality data that was released in 1993. It was released for the third quarter and for the fourth quarter of 1993. He makes the point that the figures are duplicated. He believes—his sets out his reasons in that submission—that is not just a printer's error but that there has been a duplication. He says he has requested the EPA to provide accurate figures but they will not respond to him. He makes the obvious point that scientific data collected on behalf of the New South Wales Government should be trustworthy, particularly when used for the assessment of health impacts of air pollution. What redress does a citizen have when they request that accurate data be provided and it is demonstrably not accurate?

Mr SENDT: I guess there are two issues there. If it is not provided there is redress under FOI legislation. If the information itself is inaccurate there is probably limited redress. An argument that I and the Audit Office have been making for many years is that New South Wales should adopt the system that is in place in some other jurisdictions in Australia and around the world that key performance information released by government and government agencies should be subject to some validation process, whether by the Audit Office or by some external party, to give the same level of assurance about that information as applies to financial information, which has to be audited for every government agency across the State. That is an issue that the Government has been considering since 1998, when Treasury proposed that that power be given to the Auditor-General. Some eight years on, the Government is yet to respond to that recommendation.

Ms SYLVIA HALE: Is that information provided anywhere else in Australia in relation to a particular State or at Federal level?

Mr SENDT: I am sorry. Which information?

Ms SYLVIA HALE: The key performance auditing.

Mr SENDT: The power to audit key performance indicators by the Auditor-General exists in Western Australia, Victoria, the Australian Capital Territory and, I believe, Tasmania.

Ms SYLVIA HALE: If one were to be able to give proper credence and reliability to the material and the data provided by the Government—for example, in the Government submission to this inquiry—having that auditing facility would be critical.

Mr SENDT: It would. Again, I do not think any audit office around the world could verify every piece of information that every government agency puts out. But certainly what is identified as being key information should be subject to validation.

Ms SYLVIA HALE: Does the Audit Office have a concern, or is it considered to be appropriate process, when an environmental impact statement and the whole process is gone through and then subsequently, after the EIS, an organisation such as the RTA introduces major modifications? The RTA did that in the case of M5 East, when it replaced three stacks with one, and in the case of the Lane Cove motor tunnel, when it made significant alterations to the tunnel lay-out—neither of which were subject to public scrutiny or comment or public input. Do you think that is appropriate process for a government department?

Mr SENDT: I think if there are disclosure requirements in respect of major projects that obviously when there are significant changes to those projects, equally, documentation should be removed. That was a point that I made in a report to Parliament last year dealing with PPP projects. The Government guidelines require agencies to prepare and Ministers to table a summary of PPP contracts in Parliament but if there is a subsequent major change to the project there is no requirement for a summary of either the revised project or the changes to be prepared and tabled.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Are you familiar with the Fox Studios project in your study?

Mr SENDT: It goes back before my time.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Are you aware that there were complaints about the environmental aspects of Fox Studios?

Mr SENDT: Only very broadly.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Are you aware that Fox Studios does not come under the aegis of a department such as DEC but comes under the Treasury?

Mr SENDT: No, I am not aware of that.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: The point is that Fox Studios makes film sets, which involves welding and chemicals. There is a spray paint shop and a welding yard so it is effectively an industrial site. But it is not zoned as such because it is under Treasury, as was agreed when the showground was given to Murdoch. Are you aware of the governance aspects of that?

Mr SENDT: I recall reading something in the press a few weeks or a month ago about that, but other than that I have no knowledge.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Have you done a study of the governance arrangements of Fox Studios, particularly with regard to potential or real air pollution?

Mr SENDT: No, we have not.

CHAIR: The performance audit found that the Department of Environment and Conservation has inadequate powers and resources to ensure the implementation of Action for Air. Can you provide an example of where this issue has impacted on air quality in the Sydney Basin?

Mr SENDT: In a sense I think you could probably argue that almost every instance might reflect that structure where no single agency has overall responsibility or authority. While we did not set out in this performance audit to do a study of the M5 East tunnel we certainly looked at that because it seemed to embody a number of specific characteristics that indicated there was a problem with government structures and government responsibilities and also reflected the lack of a system for dealing with aggregation of motor vehicles as, in effect, a point source of pollution.

CHAIR: Is there also an issue there about retrospectivity? At the time of the contract, as you say in here, there were no published and agreed guidelines, and I think there is a suggestion that they have moved on a bit, the question becoming then who bears the cost of conforming with, developing or changing goals for air emissions?

Mr SENDT: That is certainly an issue where third parties private sector consortia are involved in the provision of public infrastructure. Who bears the cost is an issue that, if not addressed in the contract, would tend to fall on the public sector. Having said that, of course if the project had been built by the public sector in the first place any change in, for example, pollution requirements would also fall on the public sector. The only solution to that is to build into the contract a requirement that the private sector consortium pay the cost of any future changes in environmental standards, but if that is done, of course, the private sector proponent will build the risk of that into the price they charge.

CHAIR: That was in relation to M5 East you particularly note that but there have been later contracts in relation to tunnels. Has the point you made in this been picked up in those contracts?

Mr SENDT: Again, we have not examined any of those tunnel projects from that aspect. We have only looked at them in terms of the contract summaries that have been prepared.

Ms SYLVIA HALE: In terms of the broader public interests, and particularly the health interests and curtailing air pollution, it would presumably be best if retrospective changes could be made so that the best environmental standards could be adhered to. I suppose this question is like how long is a piece of string, but would that not be a consideration that would dispose public construction of critical infrastructure such as major tunnels and roadways and whatever, and would that be a considerable reason to favour public as opposed to private construction of such infrastructure?

Mr SENDT: I think the public sector will end up bearing the cost of any retrospective changes one way or another, either explicitly through the need to meet the cost of those retrospective changes or retrofitting or, alternatively, the risk of those changes would be built into the initial cost proponents put forward.

Ms SYLVIA HALE: But it is possible to therefore calculate it to allow for that risk? Presumably in any public-private project there is some allowance for risks but you do not know how great. So to require a project to be consistently compliant with changing standards would be a risk that could be taken into account, whether by the government or by the private sector, and presumably should be taken into account?

Mr SENDT: The risk should be taken into account but how well the two parties can estimate that risk—particularly in environmental issues, and you are talking about long-lived assets, 50 to 100 years. Understanding what environmental, pollution or other environmental considerations might be seen as the norm in half a century's time is very difficult.

Ms SYLVIA HALE: What I am suggesting is that that is an overwhelming reason for these undertakings to be constructed by the public rather than by a private instrumentality.

CHAIR: I am not sure that is within our terms of reference.

The Hon. MELINDA PAVEY: In your report released in April 2005 you made reference to plans by the Government to release a revised Action for Air in 2005 itself. I think Action for Air was revised and released in 2006. Have you been able to look at that and compare it to what you were recommending?

Mr SENDT: No, we have not.

The Hon. MELINDA PAVEY: So there really has not been any follow-up in any way to check? There are some very interesting recommendations in your report. Are you planning on doing anything in terms of follow-up?

Mr SENDT: What we do with all our major performance audit reports—and this would certainly come into that category—is do a follow-up report two, three, four years later. The length of the interval depends on, I guess, the amount of change that we see is happening at the time we did the report. If you look at the list at the back of that report you will see other performance audits were done. I cannot speak for a future Auditor General since I will only be in the job for another three weeks but I would expect that this would be the subject of a future follow-up in some years' time.

CHAIR: In the submission you have stated that, "We looked at addressing the issue of the financial impact of air pollution on the New South Wales health system but we did not proceed because of a lack of reliable financial data". I have to say there are certainly plenty of people who have given us submissions who have provided some financial data—I am not sure of their sources. If there is a lack of reliable financial data what are they relying on to be able to provide some ongoing monitoring of the impact of air pollution?

Mr SENDT: I think that comment was specifically looking at the issue of the financial impact on the health system in responding, if you like, to patient needs that had arisen from pollution, either chronic or acute, and the health system simply does not really have that data available.

CHAIR: Should they?

Mr SENDT: It would be nice to say yes. What the cost of that might be? They certainly have information on the types of cases that come through the emergency departments and are admitted to hospital and from that undoubtedly you could do some sort of study of what the cost may be.

CHAIR: I am interested in a variety of proponents—the RTA being a good example—putting forward a proposal, and they would have to do a cost benefit analysis. I am looking at how they provide a cost side of things if as part of it they do not have data to rely on such as the health impact of a particular proposal?

Mr SENDT: One of the difficulties is that the impact of the various pollutants is not fully known. There may be a stronger understanding of some pollutants and a lesser understanding of others, and to be able to put some assurance around the accuracy of information, even if it was available, it would be very difficult to be able to say that this person came into hospital on this date because of that pollution incident, for example, or that level of long-term pollution. It would be very difficult.

CHAIR: Given that, why have you included asthma as an area for future investigation if, taking the point from NSW Health, there might be a variety of causes, one of which may be air quality but there might be many others?

Mr SENDT: Certainly the incidence of asthma appears to have increased dramatically over the past three decades or so. We were not saying that this is purely caused by pollution, but we thought the extent of the increase was so dramatic that there needed to be further study done to get a better understanding of the strength of the links, if any, between pollution and the incidence of asthma.

The Hon. CHRISTINE ROBERTSON: This issue of asthma as an indicator of pollution—and I do understand that it is accepted norm amongst a lot of groups for it to be—your expression of the incidence of asthma over the past 30 years it is also an accepted norm that it has increased, I am just wondering if you think there could be other influences on that issue, and I am speaking to you as a numbers measuring sort of person? For example, over the past 30 years the diagnosis of asthma and treatment of asthma has most certainly increased phenomenally, and we had some evidence earlier about the huge increase in the 1980s of persons with asthma and diagnoses of asthma. Do you think maybe before this becomes an assumed measure that we should do some more work on other influences that have affected these figures?

Mr SENDT: Certainly. That could be part of any study that we were envisaging. The impact on the health system of the increase in asthma is a fact regardless of what has caused it, whether it is due to pollution, whether it is due to dietary changes, whether it is due to other factors—

The Hon. CHRISTINE ROBERTSON: Diagnosis probably.

Mr SENDT: Whatever. That is something that could be the subject of the study.

The Hon. CHRISTINE ROBERTSON: The issue that you brought up in relation to the M5 East tunnel, I have not read the recent audit report, but you actually spoke in your submission to this

inquiry—and Ms Hale brought this issue up as well—of the difficulties of not being able to measure and that this could be a problem in the future when the initial measurements assured persons and contractors and the RTA, et cetera, that the levels of pollution were not going to be of significance, yet more science appeared and they have become significant. You made that statement that that was an issue. In your report did you present that as an auditing problem or did you present the attempts to try and measure that sort of risk as the auditing problem?

Mr CRUMLIN: What we actually presented as the problem is that at the time the tunnel was built there were certain standards—and that is fine—but the standards changed in the meantime and there was then no effective mechanism to revisit those changed standards and determine an appropriate course of action. At the time we did the audit the only thing that could happen was the proponent could go back to the Department of Planning and ask for a change in the conditions of approval, which no sane proponent would do because it would cost them a fortune. So there was really no way forward to accommodate changes in the standards. That was the primary issue that we identified in the report.

The Hon. CHRISTINE ROBERTSON: So it is an observational issue and the resolution is the difficulty.

The Hon. MELINDA PAVEY: Mr Sendt, given that in your report it was noted that private car use in New South Wales is growing faster than population, have you any views on a congestion tax for Sydney?

Mr SENDT: No. That would be a political decision. I am not going to comment on that one.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I noticed your model of saying you could not say whether an individual asthma case was caused by pollution or not. Would you not use the model that they have got in tobacco where you say how many diseases occur in people not exposed to tobacco smoke versus how many there are and then you subtract the ones that would have occurred anyway and you have got the factor and you do it at a population level?

Mr SENDT: Yes, certainly you could. I am not sure how readily that would work in analysing less severe incidents, such as someone appearing at an emergency department following shortness of breath, being given some Ventolin and going home some three hours later. I am not sure how easily you could capture what that person had been doing—for example, what parts of the city they had been in and reconciling that with levels of pollution at that period of time.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: If there is a big swing in the incidence of admissions to emergency departments and that swing corresponds to periods of pollution—which I understand from the literature they do—you could then extrapolate back for each disease that the admissions go up to the cost per disease and the fraction of those admissions that are related to air pollution and then get a costing. It seems that a lot of the problem of accounting for the cost of the pollution is difficult, because there is no hard number and the benefits of a road or industry is always very difficult and the downsides, or externalities, as the RTA referred to them this morning, are never costed.

Mr SENDT: Certainly the sort of analysis you are doing would be a relatively straightforward statistical analysis where there are clear spikes in the level of pollution. If there are clear spikes in the level of pollution and clear spikes in hospital attendance, statistically you could analyse that fairly readily. What would be more difficult is understanding what ongoing relationship there is between normal levels of pollution, if I can use that term, and the normal level of attendance at hospitals.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Presumably you could extrapolate that back from your knowledge of the spikes. These figures that appear in the medical journals showing that spikes occur—taking that as a fraction of the health budget and then coming up with the number for disease per unit of pollution, if you like, and then putting that into a figure of how much pollution this will produce and how much disease that will produce, and how much that is an offset cost to any benefit of the project. That seems difficult to do from an accounting point of view, or it

never seems to be done. Certainly the submission of Dr Ray Kearney to this inquiry bemoans the lack of such a process.

Mr SENDT: I do not think it is an accounting issue so much as a statistical issue and understanding what other variables you might need to take into account. But again I would make the point that that only deals with spikes in pollution and admissions. I do not think anyone would argue that pollution of a long-term nature may well cause long-term medical problems, some of which we do not even know about yet. How you try to measure that relationship statistically—I do not think I am confident to do that, and I am not sure how well understood those relationships are or whether they are well enough understood to allow that sort of analysis to be undertaken.

CHAIR: Mr Sendt, I know you are leaving in a couple of weeks. The Committee may have further questions we wish to put to the Audit Office once we have reviewed the information. If so, we will provide those questions by close of business next Monday and we would ask that the office reply by 6 September if possible. We thank you both for appearing before us and for your submission. Mr Sendt, I take this opportunity to wish you well in the future. We look forward to seeing your successor before us at appropriate times.

(The witnesses withdrew)

MARK CURRAN, President, Residents against Polluting Stacks, sworn and examined:

CHAIR: In what official capacity are you appearing before the Committee?

Mr CURRAN: I am the representative of two organisations, Groups against Stack Pollution [GASP] and also Residents against Polluting Stacks [RAPS]. GASP is part of the RAPS organisation.

CHAIR: Do you wish to make a brief opening statement?

Mr CURRAN: Yes, if I may. I represent both the groups GASP, which is Groups against Stack Pollution and RAPS, Residents against Polluting Stacks. RAPS is a community organisation that was set up in late 1998 following community concerns about the potential and real impact on local residents following the announcement of modified plans for the construction of the M5 East motorway, especially the change from three stacks to one. We have grave concerns about the standards and frameworks used to approve and regulate the increasing number of public-private road tunnels in our city, an approach, we believe, that fails to deal with the serious health, environmental and safety risks these tales pose to drivers and residents alike. This concern is based mainly on our experience with the RTA, the tunnel operators and the three government instrumentalities involved in the assessment and monitoring of such projects—NSW Health, the Department of Environment and Conservation [EPA], and the Department of Infrastructure and Planning. We believe that these agencies have demonstrably failed to exercise appropriate care, skill and foresight as they have failed to act to provide the appropriate protections and accountabilities to the public. They have also failed to deliver ecologically sustainable infrastructure projects that represent value for money.

In relation to the terms of reference for this inquiry, in our submission, which I hope you have seen, we pointed out that motor vehicles are the major source of harmful pollutants in urban areas and that over the last 30 years we have seen a significant growth in the number of vehicles and the number of kilometres travelled by vehicles. Vehicles, especially diesel vehicles, are the predominant source of fine and ultrafine particles—nitrogen dioxide and, ultimately, ozone. We noted that the total number of tonne kilometres of freight carried, mainly in the diesel trucks, increased by more than 17 per cent between 2000 and 2004, and that now about one-third of all fuel consumed is diesel. We believe that this must represent a significant change in pollution sources. Just to clarify an issue, I do not believe that Sydney is in any way comparable into places like Mexico City, Beijing, Bangkok or even Los Angeles, Paris or London. But we believe there is a significant problem, and it is our concern to look at a significant problem, to look at the localised effects that we believe are being experienced and to stop us from getting like those cities.

In relation to health issues, in 2002 the well-known Arden Pope, who has published a lot on this, reported in the *Journal of the American Medical Association* that each 10 microgram per cubic metre elevation in fine particulate air pollution was associated with approximately a 4 per cent, 6 per cent and 8 per cent increased risk of all cause, cardiopulmonary, lung cancer mortality respectively. That was an American study based on American data. As we pointed out in our written submission, there have been literally hundreds of research reports published in refereed professional journals about the adverse impact of vehicle emissions on health. I know of none that claim them to be harmless. All of these pollutants, especially particulate matter, have no safe level. They are harmful at all concentrations. The dose response for particles is linear from zero up, yet the Government seems to act in ways that increases rather than decrease its motor vehicle use each and especially dependency on trucks for goods transport, even when there are suitable rail routes.

By now most people know that motor vehicle accidents cause only half the number of deaths that are caused by air pollution, and we wonder why Government policy does not seem to reflect it as a fact. It seems a matter of simple good economic management for the Government to act to target vehicle pollution, if only to save money and take the strain off our already overburdened health system. Most discussions about air pollution and its impacts seem to concentrate on pollution as a citywide phenomenon—that is the meaning of ambient air. This is misleading. There is now good evidence that pollution impacts are localised. Maps of the incidence of respiratory illness in cities seem to show strong correlations with high concentrations of vehicle and industrial air pollutants. People get sicker if they live closer to roads or industries. In addition, it is the person's total exposure to pollutants that is the important determinant of how well he or she will be, and that includes the time

spent on choked roads breathing in fumes whether as a driver, a commuter waiting for a bus, a hapless cyclist, a pedestrian or a worker in the workplace. It is the total exposure that seems to be the important determinant. Simple precautionary principles demand that we take every possible step to reduce the exposure of the whole population to vehicle emissions and other harmful aerial pollutants.

Claims by government departments that because ambient air pollution appears to be stable or even falling, the public health impacts of air pollution must be getting smaller are misleading. There seems to be no evidence of this, and the asthma story tends to disprove it. Perhaps this is because the current air quality standards do not reflect the latest insights or take into account short-term impacts, cumulative impacts, additive impacts or synergistic effects. They are particularly inappropriate when it comes to assessing the health risks of road tunnels, yet they continue to be used because, we suspect, this allows projects to be approved. We have discussed the problems with using these inappropriate guidelines in our submission. We now know that road tunnels can significantly increase the pollution exposure of people both living and working around tunnel exits and stacks, as well as tunnel users. Yet it is not taken into account when assessing the risks. Even if tunnels improve traffic, it is not acceptable to seek to achieve this by transferring the small risk to many to a large risk to a few.

When people find a motorway or tunnel close to their houses it is very difficult for them to prove that the health effects they are suffering are due to the tunnel because of the inappropriate way in which any monitoring is done. For drivers, as opposed to local residents, the daily trips to and from work through the M5 East alone can increase total pollution exposure by 10 to 20 per cent per day. This makes their pollution day something like 25 to 26 hours long. You must always remember that particulate matter is unsafe at any concentration, and that levels in parts of the tunnels can be 100 times those outside. We now have five such tunnels encircling Sydney. Hundreds of thousands of drivers travel through them several times a day, yet there is no standard measuring this exposure at all. My organisation feels that there are significant deficiencies in the way in which these major projects are planned, approved and run. It is clear that there is little consideration of the true cost of the motorways and tunnels. Assessments concentrate on superficial aspects, like the number of traffic lights bypassed, and not on a real assessment of the complexly interacting benefits and disadvantages of such a project.

Every new tunnel is a crucial missing link in a non-existent transport plan, and we are continually assured that filtration of the fumes is not necessary despite local and overseas evidence to the contrary. It is not as if we are building these projects on the cheap. With three tunnels—the M5 East, the cross-city tunnel and the Lane Cove Tunnel—well over \$140 million has been wasted in unnecessarily complicated and unsafe tunnel designs that have placed both drivers and residents at serious risk. The ventilation system in the M5 is said to be one of the most expensive in the world, mainly because the design was determined by political needs. It was politically engineered. As a result it costs about \$4 million a year just for the energy to run the fans. The tunnel incurs the production of something like 45,000 tonnes of greenhouse gas per year. It is interesting to note that, through a mathematical error, some of the documents in the EIS showed it as being 35 tonnes. That error was transported four times through four different documents by different departments. However, 45,000 tonnes is as close as I can estimate. The RTA invited experts at the International Workshop on Tunnel Ventilation, which was in 2000, were uniformly critical of the energy usage. A Swiss representative said, "We would not be allowed to waste resources in this way in my country."

The galling thing to us is that it still does not work properly. The RTA is not the only department responsible for this deplorable state of affairs. Planning, DEC and in NSW Health have all played a crucial role. Road and tunnel project are proposed by the RTA, which is required to carry out community consultations and environmental assessment of the impact of its proposed design. In our experience this process is farcical. Many of these issues have been covered in previous parliamentary inquiries dealing with the M5 East, the cross-city tunnel and the Lane Cove Tunnel. My observation is that environmental laws and regulations are useless without the will to enforce them and clear lines of responsibility for this enforcement. I believe that this is what was identified by the Audit Office. In our view, to improve pollution and infrastructure in this city we need a holistic approach to urban planning and development that actively seeks to improve inequality, not just to assess at first impacts. In relation to planning approvals project assessment must be based on true cost and long-term cost to the community, including impact on public transport, health and amenity.

We believe that we need increased power, accountability and resources for the DEC and New South Wales Health with a clear reaffirmation of their responsibility to act at all times to prevent developments with the potential to adversely affect air quality. We believe that it is important that the EPA be restored to its position as an independently regulatory authority with appropriate funding and giving it the responsibility to promote improvements in air quality and regulatory standards for specific activities and environments and using proper standards for both ambient and special environment regulation which reflect the latest science, taking into account short-term impacts, cumulative impacts, additive and synergistic effects.

As a general principle, we should adopt reduction of pollutants at source and maximum and achievable control of all pollutant emitters in line with current world's best practice, and this of course includes filtration and treatment systems in tunnels, which is my particular interest. We need strict control of the location of unavoidable or irreducible pollutant releases and greater efforts to control emissions from mobile sources other than road vehicles and including diesel train engines, earthmoving construction equipment, mobile power generators, airport machinery and things like that. That is basically my introductory statement. I would also like to comment on the comments that were made by New South Wales Health, or perhaps to complete that, this morning about the residents health study, which of course is an important input into this whole argument about public health and the effects. I have prepared a two-page thing which I will be referring to.

Just quickly, we know about the study. In April 2004 New South Wales Health released the results of the phase two study, which was the telephone study. Basically, the finding of the study was, "We found no evidence of an association between the prevalence of reported symptoms of multiple emissions from the M5 stack." So they could not find an association. Then they claimed, "The methodology used represents the best feasible epidemiological approach to determining if there are population health effects from the M5 stack emissions." This non-finding—because it is a non-finding; they just say they are incapable of doing it—was immediately questioned by us and by other members of the community, basically because we saw that there were severe problems with the methodology that was used.

For one easily understandable example, they took as the measure of exposure the map of annual exposure. However, the study was done over successive periods of one month. So each person was questioned about one month prior to the study. To estimate their exposure we used an annual map. That is the same as saying that Sydney gets 1,200 millimetres of rain a year, therefore last month we got 100 millimetres of rain. It is as simple as that. Lane Cove Council commissioned an independent assessment of this by good experts, including a professor of statistics at Melbourne university. As a result of that, New South Wales Health agreed in February 2005—and this is the part that Mr Staff did not get to go into; I believe he may have intended to but just did not have time—to re-examine the findings. They admitted that there were problems but they never withdrew the result of the study or put any caveats on its use.

What had been happening is that the RTA had been doing portal emissions so that the estimates of the emission dispersal were completely wrong. The CSIRO did a re-estimation of these and these are the results that I have presented in these two pages. On the left hand side in each case was the original; on the right hand side is the changed version of the exposure zones. Mr Staff explained the high, medium and low zones. You will see that although there is a superficial resemblance, there are actually very significant changes. People who were originally thought of as being exposed to high levels of pollution were actually exposed to low levels of pollution, and conversely people, especially those around the portals, who were thought to be exposed to low levels of pollution were actually exposed to the highest levels of pollution. As a matter of fact, the author of the study says, "The most significant feature of these figures compared with the results of the earlier study is the high ground level concentrations near the tunnel portals. These are typically 10 times larger than any ground level concentrations due to stack emissions." This is the basis of our concern about that study. The revision of that study, which was promised in February 2005, as yet has not been released. We are concerned about that.

CHAIR: Earlier in your opening statement you indicated what was not taken into account when assessing the risk of tunnels. Can you indicate what is taken into account when assessing risk?

Mr CURRAN: It is difficult for me to enumerate that because what seems to happen is that they look at the predictions or they design the tunnel to fit within what are seen as being world guidelines and then they assume that by doing that and by complying with that they then avoid the health impacts. The RTA is right when it says that it complies with the conditions of approval. They do by and large, 99.9 per cent of the time, almost invariably comply with the actual letter of the law. However, people still get sick, and we say that there must be a flaw in the regulation. As it turns out, some things have emerged which show that the Australian levels of pollution and the way in which you measure them are actually quite different from those in Europe. There is a factor of two difference in the estimation of particulate matter, but that is a complicated issue.

Ms SYLVIA HALE: On page two of the material you have just handed out, at the very end you say that the worst predicted pollution impacts are significantly different between the two studies and the highest impact levels are more than four times higher in the new study. Your last sentence is what concerns me: "Because this area was originally thought to receive low levels of tunnel pollutants, it is underrepresented as part of the health study interviews. This may make any attempt to reallocate subject responses pointless." Is that still the case?

Mr CURRAN: I believe so. I am not an expert statistician. I have worked in the scientific field all my life and taught experimental design and things like that all my life but I am not an expert in epidemiological statistics. However, what happened in the design of the original study, as I understand it, the high zone in the old study, which is this picture here, the size of that was determined so that they got enough people, which was a few over 500 interviewees, to fill that study, and then the other interviewees were sort of scattered around the situation. So in that old high level there was a very high concentration of people being interviewed, whereas to the outside of that level the density was relatively lower. I understand that the actual figures of the people around the western portal, which is the highest level of impact—and I got this by word from Dr Sheppard—there are only eight people who would be in that general area, as opposed to the, I think, nearly 1,600 people in the whole study. So there are possibly not sufficient people in that area to actually show up statistically even though the exposure levels are now known to be much higher. This is my concern but I will leave it to experts to do a final judgement on that but I am trying to put it up as a significant potential problem.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: This morning Dr Michael Staff from the Health Department seemed to imply that pollution levels caused a bit of an exacerbation in asthmatics or in emphysemic people and there might be a bit of a spike in hospital admissions or treatments but there was de novo disease. This seems to be quite different from the submission of Ray Kearney, who says that two-thirds of the disease is caused by pollution within the guidelines. In other words, presumably it is dose response going down to zero. Can you comment about that?

Mr CURRAN: Once again I am not an expert on this. However, I have read that sort of thing and I know what Ray is saying. It is important to distinguish between what causes asthma—in other words, what makes people asthmatics—and what triggers asthma attacks. I think the causes are well and truly unknown—that is my understanding—and there are multiple causes, but the triggering aspects are quite different and vehicle pollution is certainly one trigger. I have also had explained to me the concept of incremental and additional impacts where, say, a pollen pollutant may take you to a subclinical level which is then pushed over into a critical level by additional vehicle pollution or something like that. I do not know if that has actually answered your question but that is my understanding.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Do you think it is necessary to demonstrate a sick population near these portals or near this funnel to work on a principal that you should go to the lowest pollution levels you reasonably can?

Mr CURRAN: I do not believe that is so at all. I believe that in our society and in our community we expect to get the best outcomes that we can. In my submission I contrasted what happened with the cryptosporidium in the water supply, which after all was only going to give people a fairly severe tummy upset, and 2,000 people dying every year from air pollution and the relative importance that is put on those two issues. Of course, the cryptosporidium and the purity of the water supply, history tells us the most significant improvement in public health probably that ever happened was to give clean water. Yet there seemed to be a disproportionate response to those two sorts of observations. My problem is that when I go down to the Bexley North portal, after people were

reporting that they were getting a lot of smells down there, people coming out of their houses to talk to me, and almost every child in that fairly localised area was suffering from asthma or some sort of respiratory thing. Of course, it is not a scientific observation, but it is something that worries me, and it certainly worries the people.

Ms SYLVIA HALE: There has been concern about the reduction in the number of monitoring stations in the metropolitan area and particularly its removal from the CBD. Would you like to comment on the reliability of monitoring as a means of gauging future impacts on health?

Mr CURRAN: I do not believe it has ever been demonstrated that we can rely on that. In the medical literature you will find people look at clusters of illnesses and peaks of hospital admissions, and things like that. They then correlate that or suggest a correlation between that and a particulate or ozone level or something like that. It is a correlation, it is not a demonstration of cause. What has never been demonstrated, so far as I know, is that the opposite occurs: That you can make a measurement of the air quality and project from that the actual health outcomes per individual. I admit that this is a conundrum, but the argument that one thing is caused by another is not necessarily symmetrical. If one thing correlates with another, always remember correlation does not imply causation. Maybe there was something else which is associated with the measurement that is made, which is the actual cause.

During the last big bushfire in Sydney—and you can ask the Department of Health about this, because I would be interested to know its final figure—I was told by someone who should know that there was no corresponding peak in hospital admissions. If you follow Pope and the six city study and things like that, you would say that 10 micrograms per cubic metre, increase in PM₁₀s are a measurable increase in hospital admissions. The PM₁₀s went to over 200 on those days, but there was no increase in hospital admissions. Basically that bears out the point that I am making: You cannot realistically predict the outcomes by the measurements. Yet all of our planning is predicated on that assumption, which I believe is untested.

Ms SYLVIA HALE: Is that because to some extent the effects on say PM₁₀ inhalation might make themselves know for many years?

Mr CURRAN: Yes, all those things interact. The six city studies are short-term effects, such as asthma attacks. The classic one is the Atlanta Olympic Games during which everyone was forced to use public transport and there was a marked decrease in vehicle-based pollution, a marked decrease in hospital admissions for asthma, which correlates. Of course that does not demonstrate the causation. Perhaps people were staying at home and watching the Games on television and did not report; I do not know. But there was that correlation.

The Hon. CHRISTINE ROBERTSON: What is your community group interested in achieving? I understand you have concerns about motor vehicle emissions. Your group came into being after the Turrella stack was put in place.

Mr CURRAN: That is correct.

The Hon. CHRISTINE ROBERTSON: Were members of your group actively protesting against this stack in general when that proposal was put together?

Mr CURRAN: No, the majority of our members are actually in favour of the M5 tunnel: it is magic, so far as traffic goes. It is almost too much magic, because too many vehicles use it at the moment. I look in awe at the engineering excellence of the M5 tunnel, but it has one fundamental flaw: The ventilation system. If we could fix that—

The Hon. CHRISTINE ROBERTSON: Your members were fighting, and perhaps still are, the three-stack proposal?

Mr CURRAN: Not necessarily, no. The initial concern was that people were really upset that they were not consulted about it. It was announced just before Christmas and they were not consulted then, and never have been. That gets people upset. Then they started to look at the actual implications of the thing they became more concerned about the deficiencies in the planning. I have

set out some of those deficiencies in our submission: The convenient changes of the estimates of pollution impacts that occurred during the planning process were one. That was not the smoking gun but it certainly makes people very suspicious.

As we became more involved, people have approached us concerned about in-tunnel effects. We did not expect there to be any in-tunnel effects, we could not believe that there would be problems inside the tunnel, because we believed what the RTA was telling us, that they would fit in with the guidelines. As those guidelines were acceptable overseas they would be okay here. It is this continuous irritation, this re-stimulation of our concerns which has kept us in action. We have never aimed for anything else than a satisfactory outcome, to get a good piece of safe infrastructure that is acceptable to everyone. When we get that we will go away.

The Hon. CHRISTINE ROBERTSON: The outcry from persons who did not want to have a tunnel in their suburb—

Mr CURRAN: Was not us.

The Hon. CHRISTINE ROBERTSON: You had nothing to do with that?

Mr CURRAN: Nothing to do with that. I made a submission to the 1986 EIS, which was not in support of the problem, but I had no problem with the road. I bought a house that would have overlooked the new road; I had no particular problem. The people who I talked to near the portals only a month ago almost invariably said, "We bought in around about the time that the motorway was built. We were aware that the motorway was built. We accepted the problems that we thought would happen. The first couple of years were fine, but lately the problems have started." Of course, this seems to correlate with the portal omissions that occurred and continue to occur. That is our real problem.

The Hon. CHRISTINE ROBERTSON: The resolution to this issue, according to your group, is what?

Mr CURRAN: We have never changed: a suitable ventilation system. Filtration will make a significant difference if properly applied.

The Hon. CHRISTINE ROBERTSON: That is on the Turrella stack filtration?

Mr CURRAN: No, not on the stack. Although that might be best for us, we are realistic enough to say that any solution that is applied to the M5 must solve the problem inside the tunnel as well as outside the tunnel. That seems only fair and responsible, if it can be done. That is what we have pushed for. If you remove the pollution inside the tunnel by solving the problem for the people using the tunnel you also remove the same pollution for the people outside the tunnel.

The Hon. CHRISTINE ROBERTSON: What suburbs do your group members come from?

Mr CURRAN: That part of Earlwood that is called Undercliff, and quite a number from Arncliffe and Turrella.

Ms SYLVIA HALE: You are speaking in your capacity for Residents Against Polluting Stacks, known as RAPS?

Mr CURRAN: Yes. Of course GASP is a group that covers all the tunnel groups. Most of what I am saying is to be taken as for RAPS.

The Hon. TONY CATANZARITI: Do you believe that the RTA regulations were properly abided by?

Mr CURRAN: No. The Department of Planning, the DEC and NSW Health set down the conditions of approval and I believe that the RTA has complied with those conditions of approval. Local engineers were given a performance guideline and they fitted to that guideline. The fault is with the actual conditions of approval, the assumptions that are made in those conditions of approval. I

have said regularly, both to the RTA and publicly, that in effect the RTA was handed a poisoned chalice with the design of this tunnel. If appropriate guidelines had been applied they would have built to those guidelines and everything would have been all right.

They designed three stacks, with short segments, nearly twice the amount of air being moved inside the thing, and the dispersal from the tops of the hills. That would have worked. But when you change the tunnel, you give it one stack of the same thickness the whole length, you have a real engineering problem. I understand that for a tunnel of its size, with the number of vehicles travelling along it, it is the smallest in dimensions of any tunnel in the world.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is the fact that it is so expensive to run the blowers for this tunnel the reason? In order to save costs they want to have leakage out of the portals? Presumably if you suck hard enough, it all goes into the portals, if you do not it all comes out of the portals?

Mr CURRAN: Unfortunately it is not as simple as that. My understanding, which I have had confirmed by the design of the ventilation system, is that you cannot move enough air inside the tunnel to properly ventilate it without blowing people off their motorcycles or sucking loads off the back of trucks. That literally happened because they cannot suck enough air out of the central. To solve the problem they want to blow air, and this is called portal emission. They want to blow extra air out of the tunnel so they can introduce clean air into the tunnel.

Our position is this: Yes, you can do portal emissions, but anything you emit at ground level, next to where people live, has to be properly filtered. That will help solve the problem inside the tunnel, will reduce the total amount of pollution and, hopefully, after proper planning and re-examination—because we are not experts—that will solve the problem. The Minister's recent action is going towards this, but we still have problems with the design. We are actively talking with the RTA. I am meeting RTA engineers on Friday and we will talk in detail about their proposals. This is a positive thing.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: How can you filter something blowing out?

Mr CURRAN: Well, you can.

CHAIR: I ask you to thank your organisation for the submission. I understand you are prepared to take further written questions on notice.

Mr CURRAN: Yes.

(The witness withdrew)

JEFF LESLIE MANN, Air Quality Practice Leader, affirmed and examined:

CHAIR: In what capacity do you appear before the Committee, as a private individual or as a representative of an organisation or business?

Mr MANN: I represent the Clean Air Society of Australia and New Zealand.

CHAIR: Do you wish to make a brief opening statement?

Mr MANN: Yes, I will chop it down. I am here representing the Clean Air Society of Australia and New Zealand. I am a member of the New South Wales branch committee. I have been involved in the field of air pollution since 1981 and for the past 16 years or so I have been consulting in air pollution generally. My particular field of interest is in odour measurement and industrial odour control. However, I am not here in relation to odours today. I am here to talk about another aspect of air pollution that the Clean Air Society believes is of relevance to the Committee.

The Clean Air Society has been in operation since the 1960s. Its members are individuals and organisations with an interest in the environment in general and in air in particular. Members include air quality practitioners, members of the various environmental protection authorities and people and companies from industry whose activities may impact on the air environment. The Society has established a number of special interest groups where particular aspects of air pollution can be discussed in detail. These special interest groups include greenhouse, risk management, odour, air pollution modelling and indoor air. It is the subject of indoor air quality that the Clean Air Society would like to bring to the attention of the Committee.

Over the years air pollution in the ambient environment, or outdoor air, has been addressed through legislation and the activities of the Department of Environment and Conservation, the Environment Protection Authority and the State Pollution Control Commission. These efforts have continued to ensure that pollutants released to the general air shed in Sydney are controlled as required to meet environmental goals. Many air quality goals are based on protecting the health and wellbeing of New South Wales residents. This outdoor air quality sets the baseline air pollution levels to which we are exposed every day. However, these are outdoor air quality goals and most people spend most of their time indoors.

Some estimates are that people spend as much as 90 per cent of their time indoors each day. The activities which occur indoors, and sometimes the materials from which the buildings we inhabit are made, contribute to the quality of air that we breath when indoors. For industrial, and to a lesser extent office-based activities, air pollution levels in terms of permissible worker's exposure to air pollutants are governed by health guidelines established by various government bodies in Australia and overseas.

These guidelines are generally set based on a healthy working aged person working in that environment for a nominal eight-hour working day. However, there is a large percentage of the population, such as the young, the elderly, the infirmed, and those who work at or from home, as well as those who go home after work each day who spend a large part of their day inside the home. For these people there are no specific air quality levels set for their environment. Whatever pollution is generated within their homes is added to the levels of outdoor air drawn into the home.

The assumption that outdoor air quality reflects indoor air quality is not necessarily a correct one. For instance, smoking has been banned in all but a few aspects of public buildings but there is no such limiting of smoking in private residences. Workers have set limits to the type and amount of hydrocarbons they are exposed to each day but hydrocarbons released inside the home from painting or from aerosol cans are not limited.

While we know the pollutants that indoor occupants may be exposed to, we do not have very much information on the levels of air pollution that people are exposed to at home and in other indoor areas. The Federation of Australian Scientific and Technical Societies [FASTS] published a paper in October 2002, which was prepared by the Clean Air Society. I have provided a single copy to the Committee and I can provide further copies.

Document tabled.

The paper is a good overview of the state of knowledge of indoor air quality in Australia and proposes a strategy for action. In summary, it urges the setting of indoor air quality standards, the collection of data which assesses occupant exposure against those standards, dissemination of information for the public and decision makers and, finally, the formulation of strategies to address the problems found. Of particular concern in that paper was the air pollutant nitrogen dioxide. The Committee may be familiar with it already or the grouping, which is called NO_x, which is nitrogen oxide and nitrogen dioxide.

It is a pollutant of concern for ambient air pollution, both in terms of its role in photochemical smog and its effects on human health as an airway irritant, as a potential asthma trigger and links to other medical conditions as well. NO_x is simply a product of combustion. In Australian homes there are two main sources of the products of combustion. These are gas-fired stoves and unflued gas heaters. In winter most people try and ensure that when they warm up the house they close it up or button up their house. This buttoning up of the house means that ventilation is minimised and pollutants which have built up inside the house stay inside the house.

I stress that what I am about to say now is about unflued gas heaters. An unflued gas heater emits, along with heat, its products of combustion into the room. Among these products of combustion is nitrogen dioxide. The Department of Environment and Heritage, through the Natural Heritage Trust, commissioned a study on Unflued Gas Appliances and Air Quality in Australian Homes. I have provided a copy of this already. The study was undertaken between July 2003 and May 2004 and cost in the order of \$300,000.

The study examined the air quality in 116 suburban homes located in Sydney, Canberra, Melbourne and country Victoria. It looked at the concentrations of the products of combustion inside and outside the houses simultaneously and for the purposes of the study the guideline exposure levels for assessment were those published by the World Health Organisation. In summary maximum indoor levels of NO₂ were greater than the World Health Organisation guidelines in the majority of houses tested. The average peak value was sometimes 10 times higher than the equivalent outdoor value. By comparison the outdoor levels of NO₂ rarely if ever exceed the guidelines for ambient air quality in most Australian States. From the data published in 2002 NO₂ levels were never exceeded for 2002 in ambient air quality.

Unflued gas heaters have changed in their emissions over the years, however the newer unflued gas heaters which emit low NO_x levels provided NO₂ levels inside the houses which were not significantly different from the average. The levels measured in this recent study were similar to levels measured in the 1980s. Concentrations of carbon monoxide and carbon dioxide were also higher than ambient levels.

The study was a snapshot of single days at single houses and would not have reflected the total exposure of people within those houses over the winter. The question needs to be asked: How big is the potential problem? The October 2002 FASTS study estimated that some 400,000 people in New South Wales alone could be exposed to levels of NO₂ from unflued gas heaters. That is 400,000 people potentially exposed to multiple occurrences of high NO_x levels inside their home every winter. That does not include the exposure from gas stoves. In comparison, the national environmental protection measure for ambient air quality or the ambient air NEPM set an ambient air quality goal of 120 parts per billion for a one hour average, which can be exceeded only one day per year, and a yearly average which is not to be exceeded at all.

The evidence today is that the use of unflued gas heaters can result in multiple exposures to NO₂ well in excess of national ambient air quality goals and World Health Organisation guidelines. The health impact of these exposures are understood but are unquantified. In terms of the Committee's terms of reference, as to air pollution in the Sydney Basin, many thousands of these unflued gas heaters would be located in the Sydney Basin, and potentially hundreds of thousands of residents of the Sydney Basin could be impacted by this issue. As to hot spots where air pollution is concentrated, each of these locations is a hot spot or a potential hot spot.

As to changes in the emissions of these air pollutants, there is evidence to suggest that between the study in the 1980s and 2004 nothing has changed very much in the last 20 years. Current air pollution laws do not impact on this issue. The causes are known and the health impacts are known but are unquantified. The financial impacts of this are also unquantified. As to the effectiveness of the current laws, there are no current laws and there are no whole-of-problem laws or programs addressing this issue.

As to strategies to address the issue, the FASTS report of 2002 made a series of recommendations to address the issue and the Clean Air Society urges the Committee to take up those recommendations as far as it can. I have also tabled a release by EnHealth, a one-page document, which in April 2005, called for the banning of unflued gas heaters within five years. It also called for management of unflued gas heaters and the impact of unflued gas heaters on the public. Nothing really has been done since that time. There has been a call to co-ordinate between industry and Legislature and a report was to be released in 2005 but nothing has happened.

CHAIR: What discussions has the Clean Air Society had with Health New South Wales or the Department of Environment and Conservation about these issues?

Mr MANN: They are ongoing. A number of the people within the society are ex DEC-SPCC people. They have ongoing discussions at formal and informal levels. The issue is that there is no single point of control or single point of setting standards within the Government. One can talk to 100 people and there is no-one to take responsibility or be responsible for action being taken.

CHAIR: Are the concerns you raise about the health impacts of particularly unflued gas heaters accepted in the discussions that are held with government departments?

Mr MANN: To my mind they cannot help but be accepted. We are talking about the same guidelines that are used for ambient air quality and the same pollutants. We are talking about exactly the same set of criteria and the same set of pollutants. If we accept that they are valid for ambient air quality, one must assume they apply for indoor as well.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Would you say that there should be no unflued gas heaters? Is that your position? You said that some of the newer ones were getting low levels of NOx.

Mr MANN: Yes, that is the position of EnHealth, and that would be our position as well.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Sorry, there were two questions. Your position is that there should be no unflued gas heaters?

Mr MANN: Yes.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You played down the position of smoking as an indoor pollutant, I noted. Would you say it is still insignificant and likely to remain so?

Mr MANN: I did not mean to play it down. I used it as an example of something that is regulated in the work environment that is not regulated in the home environment.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Nor in the social environment to some extent. You did not say anything about building materials, or very little. The literature in the mid 80s was full of tight buildings when there was the first energy crisis for oil and they tried to stop leakage of air. There was more use of plastics, fibreglass, different compounds, glues and paints?

Mr MANN: Yes.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: How important are they in indoor air?

Mr MANN: They are important and the FASTS study recommends action on those as well. We are concentrating on this particular issue because it is easily demonstrable that there is an issue there and it is easily fixed. We are seeing, from my reading, a gradual reduction in emissions from

other materials, changes in glues, changes in paints, those sorts of things, and they will happen over time and they are happening voluntarily, but the use of unflued gas heaters has to result in the emission of products of combustion into a living space.

CHAIR: Have you had a discussion with the Department of Education and Training about the existence still of unflued gas heaters in some schools?

Mr MANN: I am not the author of these reports. They send their apologies. They are in various places. One is doing a fund-raiser across the Nullarbor and could not be here. In both reports there was discussion of the program of removing unflued gas heaters from schools in New South Wales. There was a comment that although it had been committed to, it had proceeded slowly. Studies were done in South Australia about the asthma incidence in children in schoolrooms with and without unflued gas heaters and the study and the critique of the study said that there is a direct relationship between those.

The Hon. CHRISTINE ROBERTSON: Recognising that there is a fair amount of scientific evidence in relation to unflued gas heaters and that it is a major issue, are you trying to work with manufacturers for regulation for new installations or are you trying to work towards the removal of unflued gas heaters in all homes?

Mr MANN: In an ideal world there would be no unflued gas heaters anywhere. The enHealth recommendation is that the sale of new unflued gas heaters be phased out within three to five years and that a management plan be put in place for the gas heaters that are in place at the moment.

The Hon. CHRISTINE ROBERTSON: So we have these recommendations on paper?

Mr MANN: Yes, the enHealth document.

The Hon. CHRISTINE ROBERTSON: It would be an incredible expense for people who do not have a spare coin if it became illegal for them to have an unflued gas heater? Many people in our State earn under \$30,000 and it would be impossible for them to rush and change over.

Mr MANN: I do not have a simple answer. The costs need to be weighed against the health costs.

The Hon. CHRISTINE ROBERTSON: I understand that.

CHAIR: There is a difference between owning one and purchasing a new one.

The Hon. CHRISTINE ROBERTSON: Yes.

Mr MANN: I would see the bigger problem in resolving this is what do we do with the thousands that are out there now for people who cannot afford to change them over, I agree.

CHAIR: Public education of risk might be a start.

Mr MANN: That is one of the recommendations of both reports. In the enHealth, there was supposed to be a consumer brochure to be released in 2005.

CHAIR: Have you identified the names of those reports?

Mr MANN: I have.

Ms SYLVIA HALE: I have purchased two unflued gas systems in the last 12 months and I have found them very expensive. I am concerned at the assurance one is given that it is safe to buy smaller models but the larger models would need to be flued. That engenders in people a false sense of security. You talk about the management of existing systems. How can they be managed?

Mr MANN: I do not have a simple answer for that one. Each one will need to be looked at. Perhaps if an unflued gas heater is near a window then one could duct it out. For people living in apartments with sealed windows, that is not going to be such an easy solution.

Ms SYLVIA HALE: Ducting it out then increases the ambient outdoor air quality level?

Mr MANN: Yes, the warming of a house space will involve energy generation and consumption somewhere. If we could wave a magic wand and suddenly replace every unflued gas heater with airconditioning we would still have to generate the power to run the airconditioners.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Coming back to the issue of paints, if you move into a new house many people, including me, find that it is really quite unpleasant for at least the first two weeks. Surely the levels are quite unacceptable for that period. Do you recommend the use of certain materials and forced ventilation for any period when a new building is commissioned, as it were?

Mr MANN: On a personal level, I would do those sorts of things if I were moving into a new house with those sorts of emissions. But the society has not come up with a position on that.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: There is a new building code, is there not, in terms of energy consumption and so on? Obviously if this new code, which I gather is being promulgated now—

Mr MANN: I cannot tell you, I am sorry.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: It is BASIX. Are there not guidelines for how much of which solvent one can use in the building process and how long it is ventilated or what levels it is likely to reach?

Mr MANN: I really cannot answer that. I do not know the answer, I am sorry.

The Hon. CHRISTINE ROBERTSON: Do you know of a study done by NSW Health on air pollution in the home?

Mr MANN: I do not. I am sorry.

CHAIR: We are obviously looking at issues of air pollution in the Sydney Basin and naturally we have looked at outdoor issues as a starting point. You have challenged us to look indoors as well. If your society were identifying the issue of air pollution would it consider that indoor air pollution had a greater impact on the population than outdoor air pollution? How would you summarise it?

Mr MANN: In this instance and for this application, yes. The studies have measured, and it has been shown, that levels of pollutants that we are regulating outdoors can be many times higher indoors than outdoors. So the statement is that, basically, we do not exceed NO₂ levels measured in the ambient environment. We get multiple times that level indoors. We do not, in this instance, differentiate between the two: a person breathing in NO₂ indoors and breathing in NO₂ outdoors is still breathing NO₂. We believe the issue is controllable. I do not think it will be easy, particularly for retrofitting and rectifying existing installations. But the biggest single thing that we can do on this issue is allocating single-point responsibility and authority to some department so that we can start having discussions, co-ordination and actions. It is too easy to let it slip through the cracks if everyone is saying, "It's not our bailiwick."

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: How significant is tobacco smoke in terms of the total pollution load both indoors and outdoors?

Mr MANN: I am not qualified to talk about that.

The Hon. TONY CATANZARITI: What about wood? Do you regard wood-fired stoves as a problem?

Mr MANN: If they are flued then it is the same as a flued gas heater, except for when you are loading up the stove and then you will get particulates and combustion. You would not have an open fire in the middle of your house. We are talking about combustion at different levels and proportions. It is the logic of it that is the issue.

Ms SYLVIA HALE: Have studies been done of the interaction between nitrous oxides and hydrocarbons and other sources of pollution internally?

Mr MANN: There may have been. I cannot tell you. The Federation of Australian Scientific and Technological Societies study that you will get a copy of reviews all the potential air pollutants inside and references studies that have been undertaken into those.

CHAIR: Thank you, Mr Mann. Please thank your society for the interest that it has shown in our inquiry. If we have any further questions we may put them to you in writing.

Mr MANN: Thank you.

(The witness withdrew)

CHRISTOPHER WINDER, Associate Professor in Toxicology, School of Safety Science, University of New South Wales, Sydney, affirmed and examined:

CHAIR: In what capacity are you appearing before the Committee—as a private individual or as a representative of an organisation or business?

Associate Professor WINDER: I am not a representative of an organisation.

CHAIR: I should have made the same observation to the previous witness, but if you consider at any stage that any aspect of your evidence should be heard in camera or any document you may wish to present should be taken in confidence could you please advise the Committee and we will take the appropriate action? However, at any time the Committee or the Legislative Council can decide subsequently to publish anything. Do you wish to make an opening statement?

Associate Professor WINDER: Thank you. I have provided a document to the secretariat. I am sorry that I brought it today and did not submit it previously. There is a statement at the beginning of the document and I am prepared to work through that statement before we get to the substance of my document if that is useful to the Committee.

CHAIR: Thank you.

Associate Professor WINDER: I believe that environmental impacts on health are a large issue and I believe that environmental contamination is a known source of health problems. I take the point that in looking at these issues we need to consider four things, both from the perspective of what environmental contamination there might be and how it could be managed. They are: hazard, exposure, risk management and risk control. I will walk through those, if I may. First, as to hazard, there is a wealth of contaminants that may find themselves in air. They basically divide themselves into two main types: those that are dissolved in air, such as gases and vapours, which stay in air for long periods of time and have the ability to travel long distances; and those that are suspended in air, such as mists, particulates and aerosols. When we look at the impacts of environmental contaminants on health we need to consider those two things because often we miss the fact that we can perhaps filter out a particulate whereas a gas or vapour would need much more close attention to absorbing and controlling it.

The main sources of atmospheric pollution in New South Wales, and certainly in the Sydney Basin, are road transport; industrial processes, including mining, construction and manufacturing; domestic combustion sources, as we have just heard, which are mainly associated with home heating and cooking; and, lastly, natural sources, such as bushfires. I believe that the inhalation of gas vapours, solid and liquid aerosols and mixtures of these can cause a wide range of adverse health effects, ranging from simple irritation all the way through to systemic diseases.

My second point is about exposure. It would be impossible for me to even document a small amount of the interaction between exposures to hazardous contaminants and health effects, and I do not propose to do that. But it is part of my thesis today to bring to you previous contamination of the Sydney area and how industries dealt with that. It is my feeling that people who have dispersed contaminants into the environment have not really understood their responsibilities, such as the contamination of Lake Macquarie—I am not just focusing here on airborne contamination but I want to show you how it links together—by the Cockle Creek lead smelters, such as contamination of Sydney Harbour fish with dioxins that were put into the Rhodes peninsula by Union Carbide, and by soil contamination from the on-site burying of chlorinated wastes at the ICI site at Botany, which leaked into groundwater and then spread off site.

In each of these cases, Pasminco, Union Carbide and ICI-Orica have argued that they complied with practices and regulatory controls that existed at the time. That might be the case. However, if you think about Union Carbide burying wastes in the Rhodes peninsula, for example, that does not seem likely to have been an acceptable process even when it was done in the 1960s. If you investigate whether or not industry controls or appropriately manages its environmental releases you often find that the practices are dubious—whether they comply with previous regulations or not. I

make that point because we are seeing the same thing today. We are seeing James Hardie taking its liabilities offshore so that they cannot be captured by the New South Wales or Commonwealth governments. We are seeing the Roads and Traffic Authority ignoring evidence from community groups and experts that the tunnels they are building will cause problems to health and in the environment. We are seeing it in a whole range of places. Therefore, my point about exposure is: If you want to control exposure you are going to have to make people understand much more what they have to do, what their responsibilities are and how they will go about carrying them out.

That brings me to my third point, which is: What are the effects? They are that exposure to contaminated air, water, food or soil can cause a whole range or short-term or long-term health problems. They may be simple health conditions, such as asthma, nervous system problems, reproductive problems or endocrine problems, but there is a range of emerging health problems, such as chronic fatigue syndrome, effects on the immune system and chemical sensitivity, that are growing in the number of cases that are occurring, possibly because environmental exposures are such that they are causing these effects.

My last point—which is the point I want to emphasise more than any other of my points—is how we go about controlling these things. It is a commonly held belief, at least among business people, that businesses' only function is to make profits and to create wealth for their shareholders. Such a viewpoint does not acknowledge the principle that an organisation—any organisation—draws its licence to operate from the community and therefore has an obligation to that community. Therefore, the main point that I want to make today is that such organisations must understand that they have a duty of care to their community and that before they can even think about risk managing their environmental contaminants they must acknowledge that they have a duty of care; that they will keep the duty of care for those activities for which they are responsible. I feel this quite strongly because in my own experience in the occupational health and safety area it has taken 20 years for the duty of care established in the Occupational Health and Safety Act to be understood by employers and organisations and for those organisations to respond to the duty of care to their employees in an appropriate way. If you are unable to modify environmental legislation in the same way we are doomed to have that particular duty ignored for the foreseeable future.

My last point is addressing one of the last terms of reference in this inquiry relating to legislation. There is an extensive body of legislation that impacts on the control of chemicals in New South Wales. Some of it, of necessity, must take its lead from other legislation and codes that are enforced by the Commonwealth Government. My experience of this legislation is that it takes a piecemeal approach to chemical control and, to a large measure—having watched it for 20 years—it has failed. The problem is that a person confronted with exposure to a chemical that has caused an effect rings the Department of Health. The Department of Health says, "It's an environmental issue; you've got to ring the Department of the Environment." So they ring the Department of the Environment and they say, "You'd better ring WorkSafe in Canberra." They then ring WorkSafe and they say, "Oh no, you'd better ring WorkCover." Basically, the person gets the run-around because nobody is willing to say, "This is what the effect is, this is its cause and these are the controls that we have to look at to control it." Therefore, I think we now need a chemicals-based approach—not a government-based approach or an agency-based approach but a whole-of-government approach that involves everyone who has a responsibility for controlling chemicals working co-operatively.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Do you think that air quality guidelines are credible or are they set by some sort of political process? Are they from first principles science or have they been worked out as a compromise? How safe is the safety of these guidelines?

Associate Professor WINDER: Most air quality guidelines are set in a scientific context. It is the way they are interpreted and used that, I think, creates problems. Let me give an example. The guideline for particulate matter is 50 micrograms per cubic metre, and that sounds like 49 is okay. That is not the case. To hit 50, because the number of concentrations that can arise everyday. In other words, different measurements, you make to find that 50, the average of those numbers should be about 25. So if you say 50 micrograms per decilitre is an adequate level for particulate matter you would be right because that is the standard, but actually in the operation and in the measurements the actual number you need to get to 50 is about 25. That sort of technical expertise is not available to the community; they just see 49 being okay, 51 being dangerous.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You just quoted me a weight, grams per decilitre?

Associate Professor WINDER: Yes, I did.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is the size of the particles important? We had some evidence, I think from the asthma people, which said that smaller particles are more dangerous because they are more bioavailable. Is that the case? Should the guidelines be set by the surface area of the particles, for example?

Ms SYLVIA HALE: Or the number of particles?

Associate Professor WINDER: It is a good point. When I mentioned 50 micrograms per cubic metre I was talking in gravimetric terms, and we can either have a gravimetric measurement such as that or a proportional measurement such as parts per million. With regard to particulate matter we know that large particles are not a problem; we know that rather than PM_{10} —10 microgram particles—most of the health problems are occurring at exposure to 2.5 or even lower than 2.5, maybe even PM_1 . But what happens is if you have an airborne concentration of particulates containing 2.5 micrometres the actual concentration of particles is very small. So we do tend to use measures such as PM_{10} to get a measure of exactly how much is in the air. But, finally, to answer your question, yes, smaller particles are more dangerous than larger particles.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So is PM_{10} just a proxy for a normal distribution of particles so that if you have got this many PM_{10} s you have probably got that many $PM_{2.5}$ s? Is it an assumption and, if so, does the technology change that curve so that in fact you have got less PM_{10} s but more $PM_{2.5}$ s and doing more harm while your DEC, in our case, tells you that everything is going swimmingly?

Associate Professor WINDER: That would be a fair comment. Remember it is volumetric measurement so it will take sixteen $PM_{2.5}$ s to equal one PM_{10} . Therefore, air that contains a PM_{10} below the 50 micrograms per cubic metre but very few large particles would probably be more dangerous than one that contains high levels of larger particles and small numbers of small particles.

CHAIR: From your work what are the major pollution sources in the Sydney Basin?

Associate Professor WINDER: I mentioned before the two main ones are traffic and industry, but we must not forget natural sources and domestic sources as well. With regard to industry, the industry in Sydney is changing and we are seeing different industries moving out—the lead smelter in Newcastle has closed; there are issues related to industries at Port Kembla that are closing and are subject to more controls; we had an incinerator in Sydney until 1999, that closed—there are a range of industries changing. But, having said that, I am still not sure that the new industry that is being introduced into New South Wales, into Sydney, is actually working to levels that will reduce environmental levels of contaminants in and around those areas where they exist.

CHAIR: Are there other factors as well such as the actual location of specific industries? In other words, does Sydney's geography topography have an overlaying impact?

Associate Professor WINDER: Not so much the topography. I think it does because we do have air inversions here, but Sydney as a place is much more likely to build industrial developments next to residential developments. For example, in the case of ICI, ICI started in the sand dunes in Botany in 1942 and over the years developments have brought houses up to next to the factory. Ideally, it would be appropriate to have buffer zones between sources of industry and residential developments. In New South Wales and in Sydney we are much more likely not to do that; we will put a school or residential development next to a factory.

Ms SYLVIA HALE: In that context you would be aware that under the metropolitan growth strategy the Government proposes a growth centre down in south-west Sydney but there are also proposals to put roughly in that area, or at least in western Sydney AGL—and I think we have had a submission to this effect—wants to build a gas-fired power station there and in another context we know that Snowy Hydro Limited is also interested in building a similar gas-fired power station. Given

that south-west Sydney is the pollution sink, as it were, of Sydney, what would you say about such proposals there?

Associate Professor WINDER: New developments tend to comply with emerging and newer controls; they tend to respond much more to a community's expectations. It is the older ones that tend not to. I was not aware of these developments. Are you suggesting that we are going to build these things next to residential areas, next to community areas?

Ms SYLVIA HALE: In the general vicinity.

The Hon. CHRISTINE ROBERTSON: In the same suburb.

Associate Professor WINDER: It does not sound like a good idea to me, but I am not aware of the case that you are mentioning.

Ms SYLVIA HALE: Plans have yet to be lodged. There was some discussion earlier on about point of origin regulation and the Auditor General, Mr Sendt, was suggesting that this might be a desirable way to go, but the question is who pays for it, whether it is the Government that pays it because it has changed the environmental standards or whether the project builder—or the Government if it is the builder—should pay for it. What is your view about regulation in the context of changing standards? How is that best brought about?

Associate Professor WINDER: I am not sure of your question but I will try and answer as best I can.

The Hon. CHRISTINE ROBERTSON: Who carries the risk?

Associate Professor WINDER: I do not really think that is a difficult question. As I said in my opening remarks, a business proponent for a development has a duty of care to ensure that the merits and the operation of their development do not impact on the community or on the environment and therefore it is up to them to control their risks in such a way that they meet either legislative controls or community expectations, or both. Did that answer your question?

Ms SYLVIA HALE: Yes. In the case of James Hardie Industries, for example, they knew the dangers associated with asbestos but continued to manufacture and sell it. However, the dangers associated with, say, nitrogen dioxide, may in the future be shown to be even worse and more severe and the requirements to regulate them may be even greater. Who picks up the cost subsequently or how do you ensure that those new standards are put into place and observed?

Associate Professor WINDER: I feel that when an activity such as a power plant or a factory produces contaminants sufficient that they may affect the health of their workers or the health of the community or the environment, that the people running that factory, running that development, should be responsible for any adverse consequences of the development. I feel that they are the individuals that are making money out of the development and they should therefore make sure that any impact that it causes they should be paying for that as well.

I make that point and I come back to the examples I gave in my opening remarks: if we had stopped Union Carbide from dumping chlorinated waste along the Rhodes peninsula before they scuttled out of Australia in 1986 we would not be paying for it now. When I say "we", the community, the government, are paying for the remediation of the industrial activities carried out by these people, and maybe they were making a profit in the eighties because they were not having to worry about disposing of waste properly, but now that they are out of here and the waste exists, somebody else has to pay. So if we can possibly make people pay for their own problems—firstly, identify them and then either stop them from occurring or, if they do occur, fixing them, then that would be much better than having problems fixed out of the public purse.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Coming back to the question of what are normal levels of air quality, they are not the levels at which there is no effect from the pollutants, are they?

Associate Professor WINDER: No.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So there is some sort of compromise. Is there a dose response relationship in most of these particulates?

Associate Professor WINDER: Yes, there is. The dose response relationship is a relationship between exposure and effect and it follows general mathematical or statistical principles and that is that at very low levels either no or very few people are affected. As we increase exposure more people are going to get affected until at high exposures, everybody is affected.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is it a linear relationship mostly?

Associate Professor WINDER: No, it is not linear, it is sigmoid in shape. But if you look at the bottom end of the scale where we are arguing about whether a certain exposure is not associated with any effects, there is a great deal of debate about what is or is not a safe level.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: A threshold?

Associate Professor WINDER: A threshold, yes. So what happens under those circumstances is that we set a threshold which we think is okay for most of the community, but we know we are not going to get everybody; it will either be the very sensitive individuals that are probably going to find the threshold too high and therefore from a personal perspective the person has to stop living next to the factory that is generating the fumes or the asthmatic has to move away from the tunnel portal where they are exposed to vehicle emissions all day, or whether we consider the number of cases are sufficient enough that the Department of Health or the Department of the Environment has to intercede.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: We have got evidence from Ray Kearney that \$2 billion to \$3 billion is effectively the cost of vehicle pollution and a total pollution, I think, of \$8 billion for Sydney. That seems very high. He also claims that two-thirds of health care costs due to pollution result when levels are below the Australian standards. Does that mean that the level in dose response terms, even if it is below the standard, is still having a fairly great health effect? Do you accept that proposition? Secondly, what would you say about the audited magnitude he is citing?

Associate Professor WINDER: I would accept his numbers. I do not know what he is quoting from. Going back to the dose response relationship, mostly the numbers that we have for these things are based on healthy workers. Where we have an ambient standard based in the community it would be based on most people but not all people. In the standard-setting literature we talk about nearly all persons, and therefore there will be people outside that. I have forgotten your question.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: We are talking about would two-thirds of the health effects of pollutants be caused by pollutants, if you like, below the acceptable levels?

Associate Professor WINDER: I do not know what the number is but some would. I do not know what the proportion is, I am sorry.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You would not be sure about the two-thirds bit?

Associate Professor WINDER: No.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: What about the total cost of pollution in Sydney of \$8 billion annually, \$2 billion or \$3 billion in vehicle emission?

Associate Professor WINDER: I do not know.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Do you think that is the right order of magnitude or is that grossly over what you might expect, or do you not have an opinion on that?

Associate Professor WINDER: I do not know. Workers compensation bills in New South Wales are of the order of \$8 billion to \$12 billion. We might be considering something similar from the workforce to the community. That is what will happen soon.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Do you think the self-monitoring of licences, as practised in New South Wales with licences and their monitoring by the industry itself, is a reasonable way of doing it? Do you think the results are correlating adequately?

Associate Professor WINDER: I think self-regulation is no regulation.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Do you know about the independent monitoring of pollution, as happens in Victoria where they pay into a fund and then Monash University, I think it is, does that monitoring? Do you think that is a better model?

Associate Professor WINDER: I do not know. It is too early to say. That particular model has not been there that long.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: It has not been going that long?

Associate Professor WINDER: No.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Are there other models around the world involved in independent versus self-regulation versus a bureaucracy regulating?

Associate Professor WINDER: I do not know, I am sorry.

CHAIR: Associate Professor, thank you very much. We realise that your time is valuable but if the Committee has any further questions of you would you be willing to take any on notice?

Associate Professor WINDER: Yes.

(The witness withdrew)

SAM HADDAD, Director General, Department of Planning, and

CHRISTOPHER ALLEN WILSON, Executive Director, Major Projects Assessment, Department of Planning, sworn and examined:

CHAIR: Do either of you wish to make a brief opening statement?

Mr HADDAD: Yes. By way of opening statement I would like to offer some observations on two important roles undertaken by the department that are of relevance to the inquiry. Firstly, the department has key responsibility with regard to providing a strategic framework for land use planning and sustainable growth. Strategies such as the Metropolitan Strategy—City of Cities—in addition to a number of other regional strategies currently being produced in draft or being completed.

The Metropolitan Strategy forecasts that Sydney will become home to an additional 1.1 million people over the next 25 years or so. These people will require almost 640,000 homes, and the strategy targets the creation of around half a million new jobs.

The contribution of the strategy with regard to air quality is to provide measures which will ensure that greenfield release to accommodate this growth is contained within 30 to 40 per cent of the total population area, mostly in the southwest and northwest growth sectors, and the remainder within existing brownfield areas.

Relevant measures include the provision of transport infrastructure ahead of land development. The strategy clearly delineates a whole-of-government approach to the planning of rail corridor services in these areas, that is, the southwest and northwest corridors, and addresses the trend towards increased reliance on motor vehicle usage.

The strategy promotes closer links between where people live and where they work. Subregional planning exercises currently being finalised by the department will much more aggressively push employment opportunities in and around key centres with a view to boosting regional employment self-sufficiency within those centres and, as a consequence, hopefully avoiding or lessening the stress on the environment which results from motor vehicle usage.

This push towards self-sufficiency at the subregional level will run in tandem with policies designed to encourage maximum utilisation of the existing public transport system, by providing appropriate housing densities around public transport nodes. I am happy to provide members with copies of the Metropolitan Strategy and relevant support documentation.

The department also has an important role in setting policies and directions to direct implementation of the planning system. Examples include section 117 directions for councils to consider integrated land use and transport in LEPs and SEPP 53 requiring transport studies as part of the strategies development. As you would be aware, the department is also involved in the environmental impact assessment, particularly with regard to ensuring the development of infrastructure projects.

The department is the lead adviser to the Government and its Minister for Planning in relation to his approval role for major projects of State significance. Such assessment work is, by its very nature, complex and requires specialist input and a whole-of-government approach—we submit, usually beyond the level of expertise and resources available at the local government level.

The system of assessment is comprehensive and one into which is built early consideration of key impacts, particularly air pollution and air quality issues, at the early stage of a project's formulation and project documentation.

The assessment process itself is thorough and exhaustive, and achieves best practice standards. Regulatory requirements are incorporated into development approval recommendations. This system has been recently strengthened by the opportunity, where appropriate, to appoint independent panels of experts to advise on specialist aspects of the assessment process.

I am happy to provide members with relevant background material on the environmental impact assessment process.

CHAIR: From a planning perspective, what are the major challenges for air quality in the Sydney Basin at present and into the future?

Mr HADDAD: I think there are probably three main challenges. Strengthening integrated transport and land use is the key challenge. We are trying to work harder at the strategy of optimising where people live and work through our subregional strategies. That is the big challenge. We want to encourage more use of public transport by readdressing the equilibrium with the motor vehicle. We still want to see a multi-modal use of transport generally, but I think we need to improve our public transport and make it more accessible as a mode of choice.

At the more technical level—my colleague can speak more about this—we need to address some of the cumulative impacts of activities in the assessment and approval process generally. This is something we need to go more into the technical level.

CHAIR: Mr Haddad, at the beginning of the 1990s plans to grow Sydney in the South Creek Valley area stalled because of issues of air quality and water quality. Yet, we are now seeing the growth of Sydney broadly in that region. What has changed between the early 1990s and now?

Mr HADDAD: The challenge we have really is to try to accommodate growth. In doing so, I think past practices and policies have broadly tried to contain growth as much as possible. What we are doing now through some of the release areas in the northwest and southwest is addressing, I think as the minimum, what we can do to address sustainable growth in the future.

I was looking at some figures. For instance, in terms of urban footprint for the next 25 years, if we continue at the same rate of growth as over the last 25 years we will need about 850 square kilometres. What we are releasing now is, I think, much less than that. The policy has not changed in that regard.

The other change that is quite significant in my view is that we are promoting the provision of infrastructure ahead, wherever possible, of release areas. That is the key lesson from the past. We are advising governments to provide for critical infrastructure, particularly in this case transport, ahead of releasing major new release areas.

The Hon. MELINDA PAVEY: Mr Haddad, one of the goals of Action for Air is to integrate air quality goals and urban transport planning. How successful has the Government been in achieving this goal? When your predecessor, Jennifer Westacott, was working under Minister Knowles there was a focus on integrated transport and planning strategies. As I understand it, things have changed again under Premier Iemma. How are your goals going, in terms of involving yourself in transport strategies and ensuring air quality, as proposed in Action for Air?

Mr HADDAD: Basically, we will follow the provisions of the Metropolitan Strategy, which is a whole-of-government strategy adopted in December last year—

The Hon. MELINDA PAVEY: Where will Action for Air sit under the Metropolitan Strategy?

Mr HADDAD: If we take the provisions of Action for Air and look at what the Metropolitan Strategy says, it talks about, for example, people living and working in subregional areas. This is one of the objectives; that is the outcome that will be shown in the air quality—

The Hon. MELINDA PAVEY: What is subregional?

Mr HADDAD: Part of implementing the Metropolitan Strategy is to work at a more detailed level in planning at the subregional centres level—for example, at the Penrith, Liverpool and Chatswood subregional level. That is what we are doing now. Part of this is, in essence, to try to structure new planning strategies that will promote the provision of a mixed-use pattern of lands, both employment and residential, and by doing so providing what we call an increase in self-sufficient

employment opportunities for people in those centres and hence minimising the need for those people to travel and to use public transport, and hopefully addressing air quality issues. By doing so, we are therefore addressing the critical objective of Action for Air. That is one example.

Another example relates to trying to connect centres by way of transport corridors, particularly buses. These are highlighted in the Metropolitan Strategy. The Metropolitan Strategy also refers to environmental targets which are generally consistent with what is in the Action for Air plan.

These are the sorts of measures outlined in the Metropolitan Strategy. I have with me a copy of all the different transport actions outlined in the Metropolitan Strategy, and that is how we interpret what is in Action for Air.

Documents tabled.

Ms SYLVIA HALE: Mr Haddad, you would recognise that southwest of Sydney is the city's pollution sink because the pollution that is generated on the coast goes offshore and then is blown inshore and can settle, by virtue of temperature inversions, on that south-western Sydney area. I think Madam Chair referred to the Greiner Government's 1996 proposals to proceed with development of that area that was scuppered because of inquiries by CSIRO, saying that it was a totally unsuitable area.

What has changed that now makes that area suitable for development, given that at the same time there are considerable moves for natural resource and infrastructure development there? For example, BHP Billiton has for 10 years had an authorisation to prospect and develop coal in the Menangle area, and presumably that poses some sort of threat to the 4,200 homes that were planned for Menangle; there is a coal seam for methane gas out there that is associated with those coal reserves; and AGL has announced plans to build a 600-megawatt gas turbine peaking power plant. As I said earlier, Snowy Hydro was also considering such a plant.

How do you reconcile that development of natural resources, the adverse environmental air conditions, and the proposal to go ahead with intensive residential development in that growth centre?

Mr HADDAD: If I may highlight two things. Residential development and NO_x and other generating activities, as distinct from mining—in other words, the peak generation gas power plants, because of their contribution to NO_x—we will be advising to be very careful in locating new activities there, unless they meet very strict criteria and they are strategically justifiable. That is the first thing.

In terms of comparing, from a strategic point of view, the location of those facilities, they will have to pass a very stringent test: firstly, the justification for them to be there, particularly if they are of a peaking nature, that is, they are needed intermittently, whether they are needed; and secondly, whether they are really from a control source chronology, they can achieve the NO_x emissions well above what the requirements are.

You have referred to a proposal by Snowy Hydro. I am not aware that we have such a proposal, but as a general statement that is what we would do. In terms of mining, I am not sure that in terms of mining there is a contribution to regional or State air quality. Mining impact is mostly of a localised nature. You have dust and you have other factors, which, I would suggest, are different to the regional air sheds impact.

Ms SYLVIA HALE: But they may be cumulative, synergistic or interactive?

Mr HADDAD: They may be at the more localised or subregional level, but in terms of the major contributors to NO_x emissions and all the rest of it I am not sure that that is a critical factor. Having said that, again I am not aware of actual proposals. I am not aware that there are resources there, but from a residential point of view, as I was trying to say, the key lesson for the future is that we will strongly advocate the provision of mainly public transport connections to those residential areas that, mind you, will have to be built using different standards. I have not referred to the BASIX standard, which has been reasonably successful and we look forward to its being more successful in preventing some of the emissions and in energy conservation. Essentially what has changed is that we

will advocate the provision of critical infrastructures ahead of releasing some of these areas and, in general, we will continue to advocate minimising the greenfield opening in many areas.

Ms SYLVIA HALE: On 2 August the *Sydney Morning Herald* quoted John Mant, a former Director General of Planning from South Australia, and someone who was on the Government's Metropolitan Strategy Reference Panel as saying, "When the panel went along with the rezoning of the south and north-west sectors our misgivings about air pollution and the health of the Hawkesbury were tempered to an extent by such open space promises as the regional parks and the proposed green wedges." Since you are saying, "We will go along with this because green zones have been set aside", the Government backtracked and said, "Now we are only going to have reservation zones around flood-prone land." Again, it seems to me that your own reference panel in terms of air pollution has considerable reservations about the path the Government is currently pursuing in relation to those greater centres.

Mr HADDAD: The issue of the so-called green zones is different, in my view, to the question of regional air quality. However, having said that I am not sure that the Government or the department backtracked substantially on the issue. What we have said is that the amount of green space and other will be provided by different mechanisms, such as offsetting. That is part of the strategy we have developed. That is what we have been saying.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I tackled you during the inquiry into the cross-city tunnel about the lack of an overall plan for Sydney's transport, and I suggested that the RTA was the only one who had a vision and that the rail people did not, nor did the Department of Planning. You answered me that the Department of Planning would assess any project that was put to it, but did not have a specific plan as to where the rails would be. Is that still the case, or do you now have a rail strategy network laid out for the whole Sydney area?

Mr HADDAD: I am not sure about what is meant by "strategy". There are proposals that have been publicly stated about rail corridors from the north-west and south-west, then looping across the city. The exact corridor of alignments have not been determined exactly, if that is what you are referring to. There are a number of transitways that are being proposed and considered in different areas. Bus routes are being looked at. There it is the government program for clearways, which is five or six major clearways.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Do you mean no parked cars on the road?

Mr HADDAD: My apologies, not the clearways, the transitways.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: This is bus transitways?

Mr HADDAD: Yes, bus transitways plus the intersections of the rails at different areas. This is basically the broader strategy, if that is what you want to call it. Specific proposals before us as we speak for assessment are a freight line and, possibly, the north-west and south-west railway, which are coming to us soon and will be publicly exhibited as part of the environmental impact assessment process.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: What is the timeframe on that and will it actually happen?

Mr HADDAD: My understanding is that they are due to be submitted.

Mr WILSON: The EA for the north-west rail line will be submitted to the end of the year, and I am uncertain of the timeframe for the south-west rail line.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: EA?

Mr WILSON: Yes, environmental assessment for the north-west rail line.

The Hon. MELINDA PAVEY: What about the freight line?

Mr WILSON: The freight line is currently under consideration by the department.

The Hon. MELINDA PAVEY: For how long has that been under consideration? Can you explain where that freight line under consideration is?

Mr WILSON: It came off exhibition probably six weeks ago, or maybe less than that, four weeks ago. The applicant is currently considering all the submissions that have been received in relation to the exhibition period.

The Hon. MELINDA PAVEY: Is that a line at Enfield?

Mr WILSON: No, that is not Enfield, this is the southern Sydney freight line.

The Hon. MELINDA PAVEY: What about the freight distribution centre at the Enfield site?

Mr WILSON: The Enfield logistics centre?

The Hon. MELINDA PAVEY: Yes.

Mr WILSON: We are still waiting on the panel to make its report to the department before we can proceed to make our recommendations on the logistics centre.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: These are all envisaged as PPPs, are they?

Mr WILSON: I cannot answer that.

Ms SYLVIA HALE: Is the southern Sydney freight line electrified, or will it be operated by diesel locomotive?

Mr WILSON: Diesel locomotive.

The Hon. MELINDA PAVEY: I should think that it would be incredibly expensive to electrify the whole freight network across New South Wales.

Mr WILSON: As you are aware, there are freight movements currently along passenger routes. The access is restricted because of passenger movements. The objective of having an independent and stand-alone freight line is to ensure that we can move more freight during the day and not necessarily at night, and it provides a more efficient movement of freight.

Ms SYLVIA HALE: Do you take into account the emissions by diesel-powered locomotives, which, I believe, are extraordinary?

Mr WILSON: My understanding is, and studies that have been undertaken show, that diesel locomotives, in terms of efficiency in relation to road transport, are about between 30 and 50 per cent for a six-axle truck and about between 40 and 70 for a nine-axle vehicle. They are comparatively very favourable in terms of rail transport.

Ms SYLVIA HALE: We are talking about emissions?

Mr WILSON: Yes.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: This is emission per tonne moved, is it? Is that the unit you are talking about?

Mr HADDAD: It may be emission per tonne or emission per container, so I will take it on notice.

The Hon. CHRISTINE ROBERTSON: Can you outline the process by which the Minister for Planning sets conditions for approval for major projects in New South Wales, or how air quality issues are taken into account in the conditions for approval processes, including any environment or assessments for major projects?

Mr WILSON: I guess it goes to the heart of the whole process in terms of our dealing with major projects. The first port of call of any project is to have a planning focus meeting, particularly in relation to major infrastructure projects, whereby we will engage all the relevant agencies in terms of their requirements that we would like to see considered in the environmental assessment. In other words, if Health and DEC have specific requirements and limits that they want dealt with or addressed in the EA they are therefore put into the director general's requirements. The director general's requirements are issued to the proponent, who then goes away and prepares the environmental assessment. Once the environmental assessment is finalised it is submitted to the department for what we call an adequacy test. We then consult again with key agencies to determine that in fact the EA has addressed the issues they have raised in the director general's requirements. Then it goes forth on to public exhibition.

When it is exhibited everyone has a chance to make submissions again, whether it be an agency or the community. We exhibit for a minimum of 30 days. We then ask the proponent to make a response to all submissions raised during the exhibition period. The proponent is also asked to provide a statement of commitment in terms of what they think they should be required to meet and how they should meet certain standards. Following that we will then consider what type of conditions need to be imposed above and beyond the commitments already made by the proponent in response to submissions made, and response of the proponent to those submissions.

The Hon. CHRISTINE ROBERTSON: The Department of Environment and Conservation and the Department of Health set the questions for air quality in your process, do they?

Mr WILSON: Primarily the DEC and normally they would adopt national standards. They are important in the approval process.

CHAIR: What happens when, as a consequence of new information and better understanding, new environmental risks emerge or, when you get a better understanding, standards that might previously have been accepted are not tight enough? What happens in terms of updating conditions of approval?

Mr WILSON: Generally when we issue an approval, if we issue an approval, it must be consistent with the licence as issued. They must be consistent at the same time of issue. So that we do not fetter any opportunity for improvement in the future we draft conditions that basically say they shall meet up to these limits or as otherwise dictated in the pollution control licence. If the DEC, which has more flexibility in terms of its licensing arrangements and its review processes, if new technology has come on board and certain limits can be met then we do not fetter that as being imposed through the EPA licence. But usually if that is the case, if improvement in technology requires some structural change to the approval we have granted, we would modify our consent to be consistent.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Who approves it? Is it you or the DEC? For example, the Yennora Alcoa plant wants to bring in more aluminium dross.

Mr WILSON: That is a council consent, so the DEC would be responsible in that instance.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: That is a change that would produce air pollution.

Mr WILSON: Yes, but the DEC is the consent authority. We would need that information, but my understanding is that the department has no role, nor has the Minister granted any consent for that site.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So it is entirely a matter for the council even if the amount of pollution increases, or is that only within the licence?

Mr HADDAD: If it is a council approval then the process of an approval granted by a council is different to an approval granted by the Minister of the State. If you are referring to a case where the council has granted an approval, presumably—and I do not know the details—there is a licence granted by DEC. I do not know whether there is a condition or not. DEC would have the capacity and capability to vary that licence. I think it is more appropriate to ask them as to what the details are because there are a number of ways that they can do that. If it is a Minister's approval, we have a very strict policy issue and approval as Mr Wilson is saying. We always provide for the opportunity for the conditions to be varied to reflect what DEC may want to change. But in most cases DEC would initiate what we call a pollution reduction program in response to something. That pollution reduction program is a technical issue, a program with the industry concerned. They will come up with an outcome with conditions and then that will be reflected by way of modification to our approval as a result of what the proponent needs to do. That is mostly what happens.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: It is you above DEC above the council? Is that the hierarchy as it exists, or how does the hierarchy exist?

Mr HADDAD: I do not think there is a hierarchy. I suppose there is us with DEC and there is the council with DEC.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But surely someone must be responsible in the end to say this is or is not.

CHAIR: It depends on who the consent authority is.

Mr WILSON: If we were the consent authority and there was a problem in terms of non-compliance with our conditions of consent, then we would take action.

Ms SYLVIA HALE: When you said the licence conditions "or as otherwise permitted in the EPA licence", that means that you could make the licence more restrictive.

Mr WILSON: That is what I was referring to.

Ms SYLVIA HALE: Have you done that? Are there instances when you have actually made the licence more restrictive?

Mr HADDAD: We cannot do that. The licence is a DEC licence. I was trying to address the question which is basically what happens if there are technological or other improvements to an approval that we have granted or the community is concerned about something.

Ms SYLVIA HALE: Are you saying that it is in DEC's power to make that licence stricter?

Mr HADDAD: And it is for us to make provisions for DEC to do if it is the Minister, but if it is the council probably there is a more direct route on the council.

The Hon. CHRISTINE ROBERTSON: What is the relationship between the Department of Planning and the infrastructure review committee of Cabinet? Does the Department of Planning brief the IRCC on air quality issues?

The Hon. MELINDA PAVEY: Does the Department of Planning and—

The Hon. CHRISTINE ROBERTSON: —the infrastructure review committee of Cabinet. Do you have anything to do with them?

The Hon. MELINDA PAVEY: What is your relationship?

Mr HADDAD: Is it the Cabinet subcommittee or the Premier's Department?

The Hon. CHRISTINE ROBERTSON: The Cabinet.

Mr HADDAD: The Cabinet subcommittee, the infrastructure planning—the IPCC?

The Hon. CHRISTINE ROBERTSON: Yes.

Mr HADDAD: As any subcommittee of Cabinet, we basically go to them where appropriate, where there are issues of a strategic nature or of a policy nature. We go and put it for a whole-of-government approach to that.

The Hon. CHRISTINE ROBERTSON: Advisory.

Mr HADDAD: Yes, advisory. As a planning organisation, the Minister for Planning is responsible for making planning decisions. It is not a Cabinet or a Cabinet subcommittee that is responsible for making planning decisions but the Cabinet decision is rightly so responsible for making the policy. Where there are policies or strategies that impact on a number of government agencies and policies of other Ministers, that is when we go there and we present it for a whole-of-government approach to it.

Ms SYLVIA HALE: The metropolitan strategy, while part of it is premised on increased residential growth down in the south and north-west growth centres, a lot of it is premised on denser residential development along the main arterial thoroughfares but those main thoroughfares are also major generators of air pollution through diesel truck, whatever motor vehicle. What measures would you be putting in place so that residents, say, of Woodville Road, Parramatta Road or any of the other major roads are protected from the impacts of the motor vehicle exhausts?

Mr HADDAD: Could I maybe come back with a more detailed answer to this? The strategy is essential to put residential intensifications in centres rather than on the main roadways. By "centres" I mean around the railway nodes or around public transport nodes.

CHAIR: Are you taking that question on notice?

Mr HADDAD: Yes.

(The witnesses withdrew)

(Short adjournment)

LEONARD MORRICE STEPHENS, Chaplain and Reverend,

ANGELIKA LANGE, Lecturer at the University of Sydney, and

HUGH NGUYEN, Bank Officer, affirmed and examined:

CHAIR: Reverend Stephens, in what official capacity do you appear before the Committee, as a private individual or as a representative of an organisation or business?

Reverend STEPHENS: As a private individual, in relation to an action group against pollution in the Sydney Basin.

CHAIR: Ms Lange, in what capacity do you appear before the Committee, as a private individual or as a representative of an organisation or business?

Ms LANGE: As a member of Concerned Residents of Guildford.

CHAIR: Mr Nguyen, in what official capacity do you appear before the Committee, as a private individual or a representative of an organisation or business?

Mr NGUYEN: I am a concerned resident of Guildford.

CHAIR: Does anyone wish to make an opening statement?

Ms LANGE: I will make an opening statement.

CHAIR: Are you from two different groups working together? Can the Committee expect two opening statements, or are you working together?

Ms LANGE: We work together.

CHAIR: You may proceed.

Ms LANGE: The two groups which you have asked about are the Western Sydney Clean Air and Water Action Group and Concerned Residents of Guildford. This group is very concerned about pollution in the area. Guildford is about five kilometres south of Parramatta. Guildford and Yennora belong to Holroyd council. There is Yennora, Guildford and Fairfield and the Bankstown suburbs which are all included in the area which gets pollution from Alcoa. Alcoa is an aluminium plant with an output of roughly 70,000 tonnes per year. They have been operating since the 1960s. In 1979 one of their furnaces exploded and put debris all over the place. They went 200 metres up the road and rebuilt the factory. Since 1984 they have council approval to reprocess their own dross and their own clean scrap metal.

That went on until 2001 when they started to import dross mainly from Victoria, because Victoria does not like to process dross. Dross is a very dangerous material. We have in our report an appendix which explains it in the words of Alcoa. They are reprocessing imported contaminated scrap metal in enormous amounts. They did not have council approval for that. When it came out that they did not have council approval in 2005 they put in a development application to Holroyd council, in order to allow them to do that in the future and to allow it having done it since 2001 and to increase possibly the amount.

It was not said "double" or something, it said "unlimited increase of the amount". Holroyd council recommended this development application recently, but the case is now in the Land and environment court to be decided. We are very concerned about the pollutions that are coming out of the chimneys of Alcoa. They have three chimneys over the remade furnaces, which do not have any filtration whatsoever. They had a licence from the Department of Environment since 2003, which gives them limits. As residents we are very concerned about the health impact of pollution in our area. The residents are telling us about irritation of eyes and noses, respiratory diseases, skin rashes and

anecdotal evidence that there are certain types of cancer higher in that area than in the other populations, which are brain cancers and blood diseases.

Our report states that carbon monoxide has nearly doubled from 2002 to 2004. Hydrochloric acid has more than doubled in those four years. Chrome (III) has increased more than 380 times. We do not advocate the plant be closed, that is unrealistic with 350 employees, which makes an impact on the community. We are advocating that Alcoa be required to install state-of-the-art dust collectors on all of their chimneys, which would bring their pollution down enormously—and state-of-art is possible nowadays—independently audited EPA monitoring station placed at Yennora Public School; directly beside the thing.

We ask the Department of Health to undertake a health study, whether these rates in our area are higher or equivalent to the average in New South Wales. We want to ask that Alcoa is now allowed to process imported and contaminated aluminium dross and scrap, which is highly more polluting than before, and also that Alcoa's licence be amended so they have to monitor emissions of fluoride, volatile organic compounds and dioxins.

The Hon. KAYEE GRIFFIN: On page 6 of your submission you say that the Yennora factory has a history of explosions and in 1997 there were a further six.

Ms LANGE: No, that is a typo, sorry. It was in 1979.

The Hon. TONY CATANZARITI: You said the emissions are much higher now than before.

Ms LANGE: I relate to my handout, which the Committee members have received. It starts with a letter from Kieran Horkan, EPA, to Holroyd City Council. Over the page is Appendix 1 and Appendix 2. Appendix 2 gives the limits of pollution that is written in their licence. They are the maximum load levels that Alcoa is allowed to pollute. Above that is Appendix 1, which is a list of limits that Alcoa is submitting to the EPA saying what they are polluting. Alcoa has published on 8 May this year a so-called environment improvement plan 196, 197. I have copied in the handout three pages. There are 20 substances monitored, 16 of them have increased levels over the last year.

On the third page, the last thing, volatile organic compounds in 2002/03 I see 120,000 kilograms. When I go back to the list of the EPA, it says 103,826 kilos. These numbers are not consistent. When I go back to Alcoa's plans for fluoride, they say in 2002/03 there were 380 kilograms. In Appendix 1 it is 839 kilos. So more than double the amount they had earlier. The question is: What is going on? When I looked at the maximum load and compared it with the output of 2002/03, by chance—and I do not know whether it is by chance—it is over 70 per cent, which is the limit. Sometimes it is 69.5 per cent and sometimes it is 71 per cent. I had expected if someone is giving pollutants, sometimes 35, 52, 85, but these are all 70 per cent plus or minus 1 per cent to the load limit.

What is going on there? We have a situation that these are exactly 70 per cent of limits and they are not consistent with the numbers in their report. We went on 3 July to the EPA and spoke to Ross Carter. In the conversation he said, "Look, these things are just estimates. They might be even much higher, even two times." He called it "estimates". If these are estimates, why is the EPA telling this one is faxed to Holroyd council. We asked Ross Carter whether he monitored his own thing and he replied, "We are not spending any taxpayers' money on monitoring." So when he knows it is estimates and when I looked at the licence of Alcoa and of Weston Aluminium—and Weston is an aluminium plant very similar to Alcoa in the Hunter Valley—it is not a residential area whereas Alcoa is in the middle of a residential area.

I looked at the maximum loads and that is in my handout. There you see it, and can compare the maximum loads. Alcoa has nearly nine times higher limits than Weston Aluminium. It is 1.3 times higher than Weston. In fluoride they are less. In nitrogen oxides it is 4.7 times higher. In volatile organic compounds Alcoa is 36 times higher limits than Weston. Why is that the case?

Alcoa has to report certain things that are in the first list once a year. You would expect that the EPA would ask Alcoa to monitor that. They do not. If you go into Alcoa's licence, they have four

points of monitoring. Weston Aluminium I think has 16 points. The first three points are monitoring opacity, which means how dark is the smoke coming out of the chimneys. That is of no use as management. The next one, point 6, is not monitoring fluorides, is not monitoring VOCs and it is not monitoring other things which are highly carcinogenic. The EPA is not asking them to monitor, so they are allowed to estimate the numbers. When Ross Carter said estimates, I would say making up the numbers to make sure they are under the limits. Then, of course, Alcoa can go out and say, "We are producing under the limits. What do you want?"

CHAIR: I want to come back to a comment you made in your opening statement about perceived health impacts. You said some of it was anecdotal. Having assembled the information about what you see as health impacts, what have you done with that information? Have you been to NSW Health? Have you made a submission to NSW Health? Have you taken it up with the Department of Environment and Conservation?

Ms LANGE: I will pass that over to Len.

Reverend STEPHENS: Yes, we have written several letters—the Fresh Air Clean Water Action Group—to Westmead Hospital. At this particular stage we have no reply.

CHAIR: Why Westmead Hospital?

Reverend STEPHENS: Because that is the closest hospital in the area.

CHAIR: But they do not have a statutory obligation.

Reverend STEPHENS: No. We have also written to the area health body and once again we have had no reply.

CHAIR: When did you write to them?

Reverend STEPHENS: About five months ago.

Ms SYLVIA HALE: You said that the Alcoa plant was similar to the Weston plant in the Hunter. Is it similar in its capacity or in its production capacity?

Ms LANGE: In production. They are also raw products and they reprocess dross and aluminium scrap. They have an output of roughly 50,000 and Alcoa has 70,000.

Ms SYLVIA HALE: Did you know when Weston's licence was issued?

Ms LANGE: Weston is a new one.

Ms SYLVIA HALE: Was the Weston licence issued after the Alcoa licence?

Reverend STEPHENS: No.

Ms LANGE: Weston was archived 21 February 2006. I do not know what that means. Alcoa was archived 2 August 2005. I think they got these limits in 2003. They were not changed.

Ms SYLVIA HALE: In terms of the limits and maximum load, it was not a question of one licence being issued significantly after another in which time standards have changed?

Ms LANGE: Definitely not.

Ms SYLVIA HALE: They were both at the same time. The Environmental Planning and Assessment Act allowed for the licence for the Alcoa plant to be issued despite there being no council or development approval for the treatment of dross or whatever?

Ms LANGE: Yes.

Ms SYLVIA HALE: Have you written to the appropriate departments about this and what has been the response?

Ms LANGE: We have written to all the councils of Holroyd, all the councils of Bankstown and Fairfield, to the director general of Environment and Conservation, the chief executive of the Sydney West Area Health Service and the Minister for the Environment and the Minister for Transport and the member for Reid.

Ms SYLVIA HALE: And what has been their response?

Ms LANGE: Thank you for your letter.

Ms SYLVIA HALE: Who has initiated the action in the Land and Environment Court, if you say the councils have been indifferent?

Reverend STEPHENS: I might be able to add to that. Through the Land and Environment Court the initiation was, first and foremost, that Alcoa took Holroyd Council to the Land and Environment Court for the length of time of taking for the DA.

Ms SYLVIA HALE: It was a deemed refusal?

Reverend STEPHENS: That is right. It has taken me some four days to be able to come on to the Land and Environment Court because Alcoa wanted me have nothing to do with them as public people, but I have just got on.

Ms LANGE: Their argument was that he has not even got a solicitor.

Reverend STEPHENS: I was acting for myself.

Ms SYLVIA HALE: You say that Alcoa has been allowed to estimate its monitoring results, so there is absolutely no requirement for any independent analysis or monitoring of the pollution generated by the plant?

Ms LANGE: Look at the copy of the Alcoa licence. That is point 3456.

Ms SYLVIA HALE: What page is this?

Ms LANGE: It is called Alcoa licence in your handout. These are the things they are asked by the EPA to monitor. They are not asked to monitor fluorides, for examples, which they had to report. They had to report but they are not required to monitor.

Ms SYLVIA HALE: Alcoa does its own monitoring; there is no independent monitoring. It employs the people to do the monitoring?

Reverend STEPHENS: Yes. I have been going along to the Alcoa meetings for the best part of over 12 months.

CHAIR: What meetings are they?

Reverend STEPHENS: They have a bi-monthly meeting in relation to the community concerns of the area.

CHAIR: So Alcoa takes seriously the issues?

Reverend STEPHENS: Yes.

Ms LANGE: No, they started when the application was in Holroyd. They did not have it before 2005.

Reverend STEPHENS: Okay. First and foremost, I have lived in the area for the past 42 years and the amount of pollution in there, at times you have to shut your windows. At other times you have to wash your mouth out and at other times it is just unbearable, the smell with the pollution. The smell is like varnish burning. In that particular time at probably 12 meetings I was trying to find out who was doing their monitoring and who was doing their testing.

The last bi-monthly meeting, not the last one gone but the one before, they said, "We do our own testing" and I said, "In that case, where are you going? How can you do your own testing and say this is right?" Yes. The conclusion we see is night-time. It is in the late hours of the night, probably from the shift from 11 o'clock to five o'clock in the morning, 60 per cent of the time.

There was one occasion—I have a video camera, which only cost \$1,000, it does not do the job very well—but on this particular night in Loftus Street, where it is located, you could not see the end of the street. You could not see a hundred yards down the road. I videoed that and after coming home, showered, washed my mouth out because you could taste the aluminium, I then called what they call the customer liaison officer and I spoke to her in relation to this. She said, "I'll look into it for you, Len." She came back to me and she said—her words—"Thursday, Friday, Saturday, Sunday and Monday night they were 40 to 60 per cent over production" and since then she gave me a sworn affidavit and she has been dismissed. That is the sort of thing that we have.

CHAIR: I think more particularly the issue for this Committee is the response by regulatory agencies to these sorts of issues when they are brought to their attention. What is actually being done by your committees to inform regulatory agencies about the concerns?

Reverend STEPHENS: First and foremost, we have seen Ross Carter.

CHAIR: What is his position?

Reverend STEPHENS: He is the CO of the EPA, 3rd floor, 79 George Street, Parramatta. As a group we went and visited him. In the group was himself, his aerial manager, his location manager and his New South Wales manager. His exact words when we faced him with this were, "It's the bottom end of the scale." In our handout we have from the EPA's letter themselves based 2003 to 2004, 241 tonnes of pollutants over Guildford, Fairfield, Chester Hill, winding its way up to the Prospect Reservoir, which is Sydney's drinking water. He said to us in his own words—and I was totally gob smacked—"This could be two or three times below the actual pollution area." That is from the EPA, and that is the latest thing, on their own letter, which we had.

CHAIR: Are you tabling that letter or are you just referring to it?

Ms LANGE: That letter is at the beginning of my handout. The EPA first refused to give us the letter. We had the old data from December, which had much lower rates before 2000. Then they said, "But in the meantime we have updated figures" and we said, "Can we have the figures?" and they said, "No, we don't want to give them to you." Hugh emailed them, "How can we get the figures?" They said, "You can go to the Freedom of Information Act. That will cost you money." Then all of a sudden, two days before our community meeting, they sent us the letter. They did not come to our community meeting but they sent us the letter.

The Hon. TONY CATANZARITI: Earlier you said that the community committee was actually put up by Alcoa. Did Alcoa actually run the meeting or did you run the meeting and they came along?

Mr NGUYEN: It was set up by Alcoa and it was only set up in 2005 when there was a court case happening. I would just give you a brief rundown of what happened in our community. They keep telling us that it is only steam coming out of the stacks. I told them how can it be steam when it hurts my eyes? I get eye rashes because I live very close to the plant. I have asked Mr John Cosi, the senior manager at Alcoa, if he knew that the chemicals coming out would harm the environment and the people living around the area, would Alcoa continue to do what they are doing, and his response was, "We will continue to operate within our licence provided by the EPA." He does not hesitate to answer that question. To me it showed that they do not really care about the people. As long as the EPA gives them the licence they will operate at that level.

The Hon. TONY CATANZARITI: I might have misunderstood you earlier, which is why I was trying to clarify it.

Ms SYLVIA HALE: There has been a submission to the inquiry by the managing director of Weston Aluminium. Have you had an opportunity today to look at that submission?

Ms LANGE: We got it this morning and we did not have time to look at it.

Ms SYLVIA HALE: It makes a series of recommendations and I wanted your comments on how appropriate you thought the recommendations were dealing with your situation, but if you have not had a chance to look at it, I will not proceed with that.

Ms LANGE: Comparing Weston Aluminium and their limits to that one, if the EPA—I do not know if they have another office in the Hunter—but if we would impose on Alcoa the same licences as Weston, Alcoa would have to close down immediately and put filters in. They do not put any filters in their chimneys. They are not interested in spending that money and they are allowed by the EPA to have these high licences.

Ms SYLVIA HALE: You would be happy if the same requirements—

Ms LANGE: Very happy.

Ms SYLVIA HALE: —were asked of Alcoa as are expected of Weston Aluminium?

Ms LANGE: Yes, plus the monitoring—the same amount of monitoring that Weston Aluminium has to do and the same amount of fluorides.

The Hon. CHRISTINE ROBERTSON: Have you had contact with Weston Aluminium?

Ms LANGE: No, I read their licence.

The Hon. CHRISTINE ROBERTSON: It is just that a lot of the information you have seems to relate to knowing what is going on at their factory.

Mr NGUYEN: That is because we only knew about what was happening because Weston Aluminium took Alcoa to court and they sent letters out to the community. That is the only way we found out, for the first time, in our area how to make complaints to Alcoa. Alcoa has a duty in its licence to notify the public about the hot line so that we can complain to them.

The Hon. CHRISTINE ROBERTSON: So Weston Aluminium had some sort of legal case against Alcoa in relation to competition or something.

Mr NGUYEN: Alcoa does not have proper development approval.

The Hon. CHRISTINE ROBERTSON: That is interesting. Where in the Hunter is Weston located?

Ms LANGE: Currie.

CHAIR: It is between Currie and Cessnock.

The Hon. CHRISTINE ROBERTSON: It is the one that you can see from the plane.

Ms LANGE: It is an area where horses are grazing.

The Hon. CHRISTINE ROBERTSON: Yes, there are people there.

Ms LANGE: The air is less polluted than in Guildford.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: When you say that you would be happy with the Weston levels, is that because you are looking for a benchmark? Is it not true that you get very bad temperature inversions in the low areas of the Sydney Basin, which is where this is? Also, I think the houses are much closer to Alcoa than to Weston.

Ms LANGE: Even if we would go to Weston's limits, Alcoa would have to close down tomorrow.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Because they obviously cannot meet those levels or they would be meeting them with their existing plan.

Ms LANGE: Yes. That would mean that the pollution would be halved or even only 25 per cent if they would go to the Weston limits.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Of course.

Mr NGUYEN: The other issue is that we have not had a health study done around our areas. At this stage we do not know what is going on in our areas. We are hoping that there is not just a comparison with the Weston licence but also that the monitoring stations are installed in our areas because they are independent. Not even the EPA can monitor 24 hours a day. A monitoring station would be really helpful. We would like to ask that Alcoa go back to their 1984 DA under which they can only process their own aluminium cans and internal scrap and cannot import it from anywhere else. That means that they should not increase any production or enhance any pollution in our area.

The Hon. CHRISTINE ROBERTSON: Have you had anything to do with the area health service's Public Health Unit?

Mr NGUYEN: No, I have not.

Ms LANGE: We wrote to them.

The Hon. CHRISTINE ROBERTSON: Have you had an answer back from the Public Health Unit?

Reverend STEPHENS: No.

CHAIR: I think we might conclude the evidence at that point. If we have some further inquiries—

The Hon. MELINDA PAVEY: I think Reverend Stephens wants to say something.

Reverend STEPHENS: I come here, purely and simply, as a chaplain. I got very involved with this issue two and a half years ago or thereabouts first and foremost because I could not work out in my line of work why so many young people—people in their 30s, 40s and early 50s—were passing on before their time. They had been born in that area, lived in that area and passed over.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You mean they died.

Reverend STEPHENS: Yes. I have found out from local undertakers what has caused these things. We held our first community meeting two weeks ago at the Guildford local hall. We sent out invitations to attend to the EPA, councils—including Holroyd council—the mayor, everybody related to that and to Alcoa. We have gone to their community meetings that they have asked us to attend. At the community meetings there are three or four people. I am one and there are two others. They are always heavily booked by seven or eight of those people.

The Hon. CHRISTINE ROBERTSON: The Alcoa people.

Reverend STEPHENS: Yes.

Ms SYLVIA HALE: Is there a limit on attendance?

Reverend STEPHENS: No, there is nobody else.

The Hon. CHRISTINE ROBERTSON: People just do not turn up.

Reverend STEPHENS: My main concern is how come these people are having these problems. As you know, when you have a community meeting things always come out of it. Several people got up at that meeting. There is a whole street of people whose children have rashes and other skin complaints and the local doctors do not know what they are.

Ms SYLVIA HALE: What is that street?

Mr NGUYEN: It is Guildford Road.

Reverend STEPHENS: Women in their 60s who are younger than me have lost their husbands. Right next door we have a big place called Patricks, which is a major container depot. The Patricks health and safety officer asked me to give a speech to their health people. They cannot sit in their cranes and they cannot even eat in their lunch room because of the pollution. They are right next door. The crane drivers sit up there looking at the chimneys. We have always been told that it was steam coming from the chimneys. That may be so but when we asked Alcoa to give us a copy of their plant and their steam chimneys it was nowhere near that. Alcoa has also told us that they have 14 furnaces. There is only one that has any bag house or clearance of air. These are used all over the plant.

I was there when the place blew up. The furnace at that time was right beside the Yennora railway station and Yennora Public School is right next to the station. It was about 3.30 on a Sunday afternoon—I remember it very well. There were fatalities in the furnace area. It was lucky that no children were at school because half the roof landed in the public school. To give you a short history, we wanted nothing further to do with any smelting in this area. I was President of the Guildford Chamber of Commerce for some 12 years. They said that they were only going to do cans and their own clean scrap. Today they do everything they can find and they have said that they bring it in from all over the place.

I have been a builder all my life. I represent the Master Builders of Australia on the Australian standards board. I can remember some 25 years ago when they first brought this up. Why is there not an Australian standard today? In our case, independent work on monitoring is done by Monash University. There are no solicitors and no spin doctors. We all sit around a table, lock the doors—all professional men are there and everybody else. The way I see it today is that whoever has the deepest pockets will get the best results.

In conclusion, I do a lot of work at Westmead hospital and also in nursing homes. I was nominated for Australian of the Year. In my line of work I see a lot of problems with Agent Orange. I look at my two sons and they look at it through somebody else's eyes. Where do we make it? Villawood. We were told in those days that you could put it in your breakfast. I see that. I was the Reverend Len Stephens who conducted the church service at Thredbo when the crisis arose. I was recognised by Bob Carr. I am asking you, with a prayer, to give this your kindest consideration. Let us get it to a standards board. Let us put it up that we have Australian standards and those standards go from Australia to New Zealand and also South Africa. Then we will have a benchmark to work from. Thank you.

The Hon. MELINDA PAVEY: Who is your local member, Mr Stephens, and what input has he had?

Reverend STEPHENS: Our local member is Kim Yeadon. I know Kim Yeadon very well. When I first went down to see Kim Yeadon he was right with us. The next time I saw Kim Yeadon he said to me, "Be careful, Len, because they could sue the backside off you; hang back." I know Kim and I have had many arguments with Kim. I did not leave it there; I kept on going. Mr Yeadon told me that they are doing the right thing. I said, "If they're doing the right thing how come they're dumping all their stuff on the Barrier Reef." We had a council meeting two weeks ago and the lord mayor—I think he is infected with aluminium—did not know whether he went down there for the launch of the

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DA or not. All he could say when he was cross-examined was, "There was a tent there." I have known him for a long time. It was only May that he went down there with Kim Yeadon, knowing full well that there is no DA.

CHAIR: Thank you, Reverend Stephens. I will wrap it up at this point. I think the focus from our point of view is on broader issues to do with how agencies have responded. That is certainly an area that we will be pursuing. But thank you very much for the time that you have given us and for the submission that you have made to the Committee.

(The witnesses withdrew)

(The Committee adjourned at 4.42 p.m.)