

INQUIRY INTO CROSS CITY TUNNEL

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Theme:

Summary



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**Residents
Against
Polluting
Stacks**

The Director
Joint Select Committee on the Cross City Tunnel
Parliament House
Macquarie Street
Sydney NSW 2000

Dear Ms Simpson

**Submission to the Inquiry by Select Joint Committee of the NSW Legislative Council on
the Cross City Tunnel**

Residents Against Polluting Stacks (RAPS) wishes to make a submission to the Inquiry into the Cross City Tunnel (CCT) in relation particularly to the following terms of reference:

- (d) the public release of contractual and associated documents connected with public private partnerships for large road projects,
- (e) the communication and accountability mechanisms between the RTA and Government, including the Premier, other Ministers or their staff and the former Premier or former Ministers or their staff,
- (f) the role of Government agencies in entering into major public private partnership agreements, including public consultation processes and terms and conditions included in such agreements, and
- (g) any other related matters.

Introduction:

RAPS (Residents Against Polluting Stacks) is a community organisation set up in late 1998 following community concerns about potential and real impacts on local residents following the announcement of modified plans for the construction of the M5 East motorway and especially of the change from three to one exhaust stack.

Based on our experience with the RTA, the tunnel operators and the three main government departments involved in the assessment and monitoring of such projects (NSW Health, Department of Environment and Conservation (or EPA) and the Department of Infrastructure and Planning), 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, and the RTA's and regulatory authorities' approach to dealing with serious health, environmental and safety risks these tunnels pose to drivers and residents alike. We believe that they 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.

As the committee may be aware, there have been three sets of Inquiries into the M5 East Ventilation tunnel and its Stack (December 1999, July 2001 and December 2002), to which RAPS has presented evidence. The concerns raised in these inquiries are highly relevant to the subject of the current inquiry into the Cross City Tunnel (CCT), and many of the issues relating to transparency, accountability, rigour of assessment and protection of the public interest were covered in these three inquiries, and their resulting recommendations. Unfortunately, most of these recommendations were ignored, and this in part has given rise to the deplorable set of circumstances with the CCT, as it has reinforced the status quo of secrecy, 'buck-passing' and incompetence. We have closely watched, and taken part in the public consultations relating to the CCT's approval.

While the focus of this inquiry seems to be on issues relating to the contractual arrangements, financial costs and community consultations, we would urge the committee to also examine the hidden tolls of these projects. Much has been rightly said about the excessive financial toll of the CCT, and the adverse traffic impacts, however there is an even more detrimental and inequitable hidden toll paid by the community as a result of this and similar projects. This toll is in the way of less visible, but nonetheless very real costs in adverse health, environmental, planning and amenity impacts as well as a significant erosion of public confidence in the political and bureaucratic agents and processes charged to protect the public good.

Although it is clear to us that there are significant problems with the contractual arrangements which appear to have led to excessive project costs and inconvenience through the alienation of public access to some roads, ultimately it is the real cost which is of concern to the public.

This real cost is made up of

- the identifiable financial cost to the government,
- the excess of profit over real cost for the operators,
- the additional costs to users, forced to pay a toll which, by any comparison, is excessive in relation to the service provided
- intangible but real additional health and amenity costs due to exposure to exhaust pollutants inside and outside the tunnel.
- Loss of amenity to non-tunnel users through the alienation of surface road usage
- Economic, health and environmental costs due to the shifting of transport modes from public onto private vehicles and increase in overall vehicular traffic
- Excessive energy usage because of inept ventilation system design and the failure to use the latest techniques involving in-tunnel air cleaning.
- Potential deleterious impacts on property values around the stack and tunnel outlets.

These costs are, in no way, balanced by apparent profit or *quid pro quo* payments by the contractor to the RTA.

Although tunnels, by freeing up traffic flow, may have a generally beneficial impact on city-wide pollution, they add other significant and specific risks to those exposed to concentrated exhaust both inside and outside the tunnel. They also tend to increase traffic volumes by inducing extra traffic and reduce patronage of public transport systems. Sydney now has five tunnels operating or under construction and is planning a sixth in the near future. As you may be aware, these tunnels are currently unfiltered, with all the exhaust being emitted unfiltered from one (eg the M5 East, Harbour and Cross City tunnels), or at the most two exhaust stacks (eg the Eastern Distributor and Lane Cove tunnels). With the three (M5 East, CCT and LCT) tunnels, well over \$140 million have been wasted in unnecessarily complicated and unsafe tunnel designs which place both drivers and residents at serious risk.

It is well established that emissions in tunnels, and especially from their exhaust stacks are more concentrated and therefore more toxic than emissions coming from vehicle tail pipes.

In its report released in September 2003, the Australian Bureau of Transport and Regional Economics estimated that in 2000 twice as many people died, in Sydney, from the effects of vehicle exhaust than fatalities on the roads. Total cost of the mortality and morbidity associated with exposure to vehicle pollution was about \$1.5 billion for Sydney alone. Yet, perhaps because these effects are less visible and dramatic than road accidents, very little seems to be done to address this deplorable situation, which many have called the new asbestos.

In relation to the safe administration of road tunnels, we believe the public is entitled to expect that:

- the need for such projects would be rigorously assessed in the context of a wider urban transport plan that examines all viable transport options, and they would only be approved if they represent value for money for the community (rather than for the operator) and delivered overall improvements in transport, planning, health and amenity
- the contractual arrangements and regulatory frameworks are subject to public scrutiny, and that the successful contractor is selected on the basis of merit and ability to deliver a sustainable project

- the design of these tunnels would reflect international best practice, especially in terms of their safety, ventilation systems and value for money
- the regulations for these tunnels would reflect international best practice, especially in terms of standards to protect public health and safety and accepted precautionary principles
- the standards and regulations would be strictly enforced
- mechanisms would be in place to promptly and adequately respond to any foreseen or unforeseen problems, including the emergence of new knowledge, technologies and the development of new guidelines
- all public agencies involved in planning and regulation , and especially those proposing and developing new projects, would be held accountable for their performance and that mistakes made would be rectified in both current and later projects.

It has been our sad experience that none of these criteria have been met. We find it untenable that such projects are allowed to operate and be constructed in the full knowledge that the designs, standards and regulatory frameworks are deficient. Critical negotiations are conducted in secret, with resulting financial and environmental risks being shifted onto the unsuspecting public. The focus of the different departments seems to be more on “strategically managing” the public’s perceptions and reaction to issues rather than on solving the actual problems.

We are dismayed to see the same processes applied to other infrastructure projects such as the proposed desalination plant at Kurnell.

We would request the committee to consider investigating the following issues as part of the inquiry:

- Effectiveness and adequacy of the assessment and regulation of road tunnels, and in particular health and public safety issues, and the suitability of mitigation measures and safeguards
- Adequacy, comprehensiveness and responsiveness of approaches taken to investigate health risks and establish regulatory standards to protect the safety and health of drivers, residents and workers affected by road tunnels
- The fitness of purpose and value for money of the current ventilation design of the Cross City tunnel in the light of international experience
- Air quality and monitoring provisions and enforcement
- Why none of the recommendations of the 2002 Parliamentary Inquiry into the M5 East Ventilation tunnel or the 2005 Auditor General’s report in the management of air quality have been implemented.

Systemic flaws in project assessment, approval, consultation and regulation

Because many of the issues in the specific terms of reference relate to how projects are conceived and approved, our submission examines some of the fundamental systemic flaws in the environmental assessment, consultation and regulation processes rather than referring specifically to the terms of reference.

Our claims are made as a result of our experiences with the M5 East and other tunnel projects and supported by documentary evidence obtained from a number of different calls for papers made by order of the Legislative Council. We would be happy to provide the committee with the relevant supporting documents on request.

Tunnel projects are proposed by the RTA, which is required to carry out community consultations and environmental assessment of the impacts of its proposed design. In our experience this process is farcical because of systemic problems with these processes:

1. Community consultation and expert assessments is controlled by the RTA for the RTA
2. The role of ‘watchdog’ agencies is severely compromised
3. Inappropriate benchmarks are used in assessing impacts to facilitate approval
4. There is no independent scrutiny of changes/modifications made following the EIS process and contracts are negotiated in secret, with changes self-approved

5. The conditions of approval set are often vague, unenforceable, unenforced and yet seemingly set in stone

1. Community consultation and expert assessment is controlled by the RTA (ref f)

- The RTA, and its bevy of consultants (ventilation design, air quality, traffic planning, public relations) promotes its own interests, which may be diametrically opposed to good planning or sustainable development principles. Their aim is to build roads regardless of their merit or impact. They are very selective about the information they present to the public and have, in our experience, repeatedly presented dubious and misleading information which aims to minimise the negative impacts, gloss over the lack of crucial details, and grossly exaggerate the potential benefits of the proposal. Tunnels are promoted as beneficial because of the number of traffic lights motorists can avoid, or because they supposedly relieve local streets of traffic without looking at the impacts of induced traffic or new bottlenecks further down the road system. Every new tunnel is a crucial missing link in a non-existent transport plan and we are continually assured that filtration of fumes is not necessary, despite local and overseas evidence to the contrary!
- The RTA consultants seem to be carefully selected by the RTA to provide the required results, ie favourable assessments and glossy publications. There is little independent scrutiny of the validity of their predictions and even when shown to be inaccurate, or challenged by departments such as the EPA, or independent experts, the falsehoods are rarely corrected.

Examples:

When the air quality measures for the CCT showed exceedences of air quality goals at Harris St, Ultimo, the predictions were instead based on Goat Island, in the middle of Sydney Harbour, where they were found to be under the limit. Likewise, when the EPA objected to such baseless air quality predictions being published by the RTA, it was told it was too late for anything to be done and no retractions were made.

When the urban design model for the M5 East stack was shown to be grossly out of scale, no corrective action was taken, by the RTA or DIPNR the regulator.

In the case of the Lane Cove tunnel, the EPA determined up to a 10-fold increase in cancer risk for most “affected receptors” (individuals) exposed to toxic stack exhaust, but nevertheless allowed a reworking of the data to include discounts for future vehicle technology improvements and average the results over a 70 year lifetime. This massaging produced acceptable health risks.

- Community consultation processes are expertly managed by the RTA and its public relations agencies to ensure the most positive spin is placed on the proposal, and inconvenient issues are either ignored or side-stepped.

Examples:

In the case of the M5 East in 1998, most of the properties directly surrounding the exhaust stack at Turrella did not receive any notification, with pamphlets going instead to suburbs unaffected, where opposition was expected to be less and the RTA did not attend or organise any public meetings to discuss the proposal's impacts.

In the most recent consultation debacle for the proposed M4 East in 2004, the RTA refused to attend several community meetings to answer questions, or provide any details of its wider road project plans, traffic predictions, or possible locations of exhaust stacks. There were no concurrent proposals to improve public transport, and the RTA was quite candid that they did not consider this to be their role, apart from including a picture of a bus on the glossy brochure.

When Paul Willoughby, RTA communications director did attend a community meeting, he repeated the RTA mantra that filtration was not effective, despite the fact he had just undertaken a study trip to Japan which resulted in the release, several months later, of a report that finally acknowledged that in fact filtration of tunnels was cost effective and of significant environmental benefit.

2. The role of 'watchdog' agencies is severely compromised (refs e and f)

We continue to be dismayed by the lack of accountability resulting from current arrangements and the apparent lack of will or capacity by the regulatory authorities to exercise their monitoring and legislative powers for the public good.

Both the NSW Department of the Environment and Conservation (DEC/EPA) and NSW Health have clear charters "*to reduce the risks to human health and prevent the degradation of the environment*" and clear legislative powers to direct the RTA to take action to protect public safety. However, their role in the assessment of impacts is advisory only, and there is abundant evidence of their advice being ignored or over-ridden by the RTA and DIPNR, and of senior bureaucrats in these departments refusing to take a more active role, despite pressure from the community, Parliament, the Auditor General and the EPA Board.

Example:

A briefing paper by a senior EPA manager acknowledges that the EPA could 'increase its role in regulation of motorway tunnel by using the powers of the Protection of the Environment Act either as the appropriate regulatory authority or through licensing the operation of the tunnel under the Act but If the EPA takes on a larger role in regulating the operation of these projects there is the risk that the design assessment and approval process may be compromised by the presumption that the EPA will be able to solve any shortcomings once the motorway is in operation ...and... The EPA playing a more upfront role may risk removing pressure for the RTA to respond to the community in these situations'¹.

As a result, there is no environmental licence for these projects, only imprecisely set conditions administered by DIPNR, based on inappropriate standards.

Neither DIPNR nor the RTA is required to take the advice of other departments or independent experts, such as the CSIRO in the assessment or operation of tunnels.

We are aware of a significant number of cases where DIPNR has required DEC and NSW Health to provide advice on issues within a very narrow scope, without providing full information or appropriate background information. This advice has later been used inappropriately and without an understanding of the implications of these actions, a situation which could have been avoided with greater involvement by DEC and NSW Health and greater accountability for the implementation of advice provided.

The April 2005 Auditor General's Report into the management of air quality clearly showed that the oversight of these tunnels for the public good has generally failed. It established that no one seems responsible for air quality in NSW. The conditions of approval set for tunnels are inconsistent, they do not reflect best practice standards, and can't be changed, except by the RTA itself, or Cabinet. The national air-quality guidelines were designed for background atmosphere but have been incorrectly applied to tunnel pollution and that of their stack exhausts. These findings confirmed the findings of the three Parliamentary Inquiries held into the M5 East.

The EPA has steadfastly refused to license tunnels or take a more active regulatory role, and NSW Health has refused to undertake rigorous health assessments of impacts or use its legislative powers to direct the RTA to carry out basic protective measures.

It is clear from the released documents that some officers within both departments have genuinely attempted to exercise due diligence and have voiced criticisms of departmental roles, practices and the assessment processes. However, the overriding concern of their senior managers seems to be with the political imperatives to have projects approved, to present a unified inter-agency approach, and not to create inconvenient precedents.

Example:

¹ Joe Woodward (Dep Director, EPA), brief to the EPA Board, "*Options to regulate motorway tunnels and ventilation stacks*" - 4.11.02

In a briefing note in July 2002, in relation to the EPA's role and the robustness of its assessment process of tunnels, an EPA officer notes NSW Health concerns that *"the impact assessment methodology used for the M5 East is not robust enough to guarantee that tunnel ventilation stacks can be designed and operated without causing adverse health impacts"*, and Health's hesitation in supporting any further approvals until these issues are satisfactorily resolved. However, instead of embracing the opportunity to improve performance in the light of a demonstrable failure to identify and control risk, the EPA senior manager states that *"if NSW Health formally adopts this position, this would fundamentally question the methodology used by the EPA to assess, approve and license all industrial sources of air pollution."* He then proceeds to justify the status quo through a series of tendentious and inaccurate assertions.

Under the current system DEC and NSW Health are asked to advise, make decisions and effectively approve designs and operating protocols without ensuring that they have the resources and/or expertise to:

- certify the standards and models used reflect best practice,
- independently check the assumptions of an assessment, (or subsequent reassessment by RTA or DIPNR),
- monitor the implementation of the designs and protocols or,
- enforce their eventual recommendations.

Once tunnels are operational, these agencies have a minimal, mostly advisory role. Even, when in the M5 East, under condition 70, the RTA is required to implement any reasonable requirements of the EPA which aim to improve in-tunnel air quality, the department has self-limited this role to letters of clarifications and requests for further information rather than corrective action.

Example:

A briefing note from a senior EPA manager comments that *"there is however growing disquiet that current best practice [in relation to standards and monitoring techniques for tunnels] is not adequate....this disquiet appears to have reasonable basis and warrants an authoritative response"*². Similarly, a memo dated 21 May 2004³, alerting DEC officers to RTA notification of portal emissions, notes that the RTA had not responded to DEC correspondence about portal emissions sent in mid January 2004, but takes no further action.

After considerable public and media pressure NSW Health undertook an investigation into the exposure risk for drivers using the M5 East tunnel which was released at the end of July 2003. The study was based on single journeys through the tunnel, and only looked at single pollutants in isolation rather than their combined, synergistic and long-term effects.

The documents released show that the draft report was carefully vetted and modified by the RTA and other agencies. For example the fact that investigators conducting the study reported feeling ill while driving through the tunnel was omitted as the RTA considered it "too subjective". Yet such observations go to the heart of the issue, namely that the regulations should offer adequate protection, not just provide a technical compliance with an arbitrary standard. The report recommended that:

"NSW government agencies with a role in the management of road tunnels collaborate to investigate international advances in this area and develop appropriate NO2 guidelines for tunnels. Pending these investigations, we would advise motorists in open vehicles and motorcyclists, to avoid using the tunnels when transits are likely to be prolonged, particularly if they suffer from asthma."

The study clearly indicated that the tunnel cannot be used safely by about one sixth of the population (eg those at risk of asthma attacks, with allergy or heart condition, those on motor cycles, in open cars), yet it appears to use the absence of international short term standards as

² POEO review-Road Tunnel Ventilation Systems, G. Reffell 4.12.03

³ Early Alert, 21.5.04 Ref HOF44003, HO7158/04

an excuse to do and say nothing about potential impacts of high level exposure. This is against the precautionary principle and is not reflected in other regulatory measures, e.g. bans on smoking in public places, or overseas practices in regulating tunnel conditions.

The RTA has not yet erected warning signs and continues to trivialise the risk and claim that the tunnel is safe because it "meets the set standards." The then RTA CEO, Paul Forward, is on the public record denying any health risks, while the Deputy Director of NSW Health has confirmed to Parliament at the November 2003 LC Budget estimates that such risks do exist, but seems unable or unwilling to enforce any action, despite having obtained clear legal advice that NSW Health has the mandate to do so.

Following numerous complaints and an independent study funded by the community, NSW Health carried out a preliminary investigation in 2003 into potential health impacts on residents near the M5 East stack. This involved a number of residents being examined by specialists from Royal Prince Alfred Hospital. According to an internal NSW Health report, *"experienced allergy, respiratory medicine and occupational medicine physicians, identified a substantial number of subjects who complained of eye, nose and throat discomfort....sometimes headache. [and] that there was a prima facie evidence of adverse health effects related to the vent stack"*.

However, the public report was much more equivocal.

Stage 2 the study into the effects of the M5 East Stack on residents was released on the 1st April 2004. This involved a random telephone survey asking respondents to comment on their health for the previous 4 weeks, and it found no evidence of health effects due to the stack, and concluded there was no need to do any further investigation of any kind.

There were a number of serious methodological and analytical problems with the study, many of which were drawn to the attention of the study authors in writing, before and after the study was undertaken, but with no effect. The study was independently peer-reviewed through funds provided by a number of local councils, (when NSW Health refused to subject the study to independent peer review, and continued to defend their stance), and found to have significant short-comings. It was also established after the study, that the RTA had overseen significant and regular portal emissions from the tunnel during the period surveyed, which invalidated many of the assumptions and measurements made. We are still awaiting NSW Health's response to this review, more than a year later. Meanwhile, NSW Health refused to carry out a health survey of residents in the Darling Harbour area, on the grounds that it does not deem it necessary.

Following the 2003 health study, an Inter Agency Working Group set up to develop signage and communications for drivers in the M5 East and examine the need for better air quality standards. However, this group was effectively sabotaged by the RTA, who ignored the recommendations of the agencies and withheld crucial air quality data. Despite intervention at the most senior levels by the DEC and NSW Health, the group failed to achieve its aims due to the lack of cooperation by the RTA and the lack of willingness of the other members to enforce changes.

Likewise, we are not aware of any action taken to implement the recommendations of the NSW Auditor General's Report into the management of air quality, and in particular the adequacy of current frameworks for the assessment and regulation of tunnels.

The lack of clear accountability among these government departments is a scandalous situation that results in poor outcomes. It appears clear that those departments and Authorities which have power under legislation (eg DIPNR, the EPA and Departments of Health) to compel specific actions and the regulate to protect public health, public amenity or the environment are loath to do so in the case of other government departments or authorities.

This abnegation of responsibility appears to result for the increasing politicisation of what should be bodies independent of such influence.

3. Inappropriate benchmarks are used in assessing impacts to facilitate approval (ref f)

Both the EPA and NSW Health are generally proactive approaches in relation to issues such as smoking, litter, energy and water campaigns, where individuals are continually told that “every bit counts”.

In relation to air quality, our experience and departmental documents different approaches are used with the RTA and tunnel operators, perhaps to facilitate the approval of a project. The environmental impacts are often assessed on the basis of inadequate or outdated standards, which seems to suit the proponent advocating for the proposed project, and the regulatory or advisory agencies who seem to find such a situation more palatable than having to ‘take on’ the RTA. For example:

- They continue to assert the appropriateness of using *National Environment Protection Measurement* NEPM goals, intended only for the assessment of regional ambient air quality, to regulate the local impacts of point sources of vehicle exhaust pollution, such as unfiltered stacks, despite the Executive Director of the *National Environment Protection Council*, Dr. Bruce Kennedy, warning that *"The NEPM PM10 standard....is a legislative entity and applies only to the ambient background, and a population of 25,000 people. It does not and should not, be applied to a point source such as a tunnel stack from which an entirely different composition of pollutant arises."*
- They have approved the use of a short-term standard for one pollutant, (carbon monoxide) to regulate in-tunnel pollution levels. This is despite the 2000 guidelines from the PIARC International Committee on Road Tunnels which indicate that carbon monoxide levels alone are no longer sufficient for such regulation⁴, and compelling scientific evidence pointing to the inadequacy of this approach in dealing with cumulative, synergistic and long term effects of tunnel exhaust pollution⁵. An emerging cumulative health risk, particularly in relation to carbon monoxide to motorists travelling through two or more tunnels in sequence, has deliberately not been addressed, yet this is already a routine daily occurrence for thousands of motorists, and will be even more so in 2-3 years time.
- They trivialise the impact of fine particles in tunnels and the need to regulate their levels. Despite wide acceptance of the harmful impacts of ultrafine particles, these are not regulated in tunnel projects, either inside tunnels or outside their outlets. In the case of the M5 East, particles inside the tunnel have been documented at 50 times the levels of ambient air limits.⁶ The 2003 Department of Health study of in-tunnel exposure in the M5 East showed particles above levels known to be harmful, especially in combination with nitrogen dioxide. Rather than impose stricter conditions in relation to particles, the conditions for the Cross City and Lane Cove tunnels allow the RTA to maintain higher in - tunnel levels of pollutants by setting inappropriately high in-stack limits for particles (up to 1600 µg/m³ PM10), greater than those currently experienced in the M5 East. NSW Health has refused to undertake rigorous health risk analyses as part of the assessment process for these tunnels.
- In an area where knowledge is rapidly growing, there are few mandatory international standards relating to ultra-fine particles and short term exposure limits in tunnels. Local regulatory authorities use this lack as an excuse to “wait and see”, while at the same time acknowledging that *“once constructed, it is usually not feasible to make changes to the project that were not allowed for in the original design”*⁷ and that any new standards cannot be applied retrospectively. Such a stance seems to be directly contrary to the 'precautionary principle', and regulation frameworks and methodologies applied elsewhere.

⁴ Pollution by Nitrogen Dioxide in tunnels, 2000. PIARC Committee on Road Tunnels Working Group #2. Environment and Health Protection Administration, Stockholm Sweden.

⁵ See for example a study carried out by the Swedish National Road Administration "Air quality in road tunnels: Health effects of nitrogen dioxide and aspects on co-pollutants (2003)"

⁶ General Purpose Standing Committee No. 5 Inquiry into the M5 East Tunnel 2002, p67

⁷ J. Woodward, Submission for Board Meeting-EPA 10/02 11 November 2002, p3

- The RTA has actively resisted any treatment of tunnel air, despite the availability of technologies for more than 20 years, to substantially address this problem and so improve public health and safety. Neither the EPA nor NSW Health has formally recommended treatment systems, despite internal documents showing support for the viability of tunnel filtration.
- The EPA has not required the energy costs and greenhouse emission implications of the ventilation systems used for tunnels to be assessed as part of the EIS process, despite (or may be because of?) they are known to be exorbitant due to the complicated design as a result of lack of filtration. The energy costs for the M5 East alone are seven to eight times those of comparable overseas tunnels, and were strongly condemned by international experts in 2000. Documents attached to the EIS for the M5East Tunnel underestimated the greenhouse gas implications of the M5 tunnel ventilation system by a factor of 1000, due to an uncorrected editing error.

4. Lack of independent scrutiny of changes/modifications made following the EIS process (refs d and f)

As a result of community consultations and environmental assessments, proposals are often changed. However, the new impact of these changes is not independently assessed, and often the changes are only made public once the approval has been made, ie when it is too late to comment or have any influence.

The most spectacular example of this was the change of the M5 East design from three stacks high on hills, to one stack in a sheltered valley, 800m away from the actual tunnel, at an additional cost of \$30 million in capital costs and over \$3 million p.a in operating costs. There was no public knowledge, let alone independent assessment of this change. Unfortunately, a legal challenge by the community failed, as the RTA argued this was a modification, not a significant change, and an improvement in response to community concerns to the same, 'unchanged' road project, and there were adequate protective measures should any adverse impacts arise. The adverse impacts have been well documented, especially by three Parliamentary inquiries, but the protective measures have not been implemented. The 1999 Parliamentary Inquiry recommended (recommendation 5) the EPA & A Act be amended to prevent such a situation re-occurring, and repeated this recommendation in both the 2001 and 2002 inquiry reports, but this has been ignored.

As a result, the RTA, with DIPNR's tacit consent, has been able to make a mockery of the EIS process and self-determine whether or not a change to the approval is significant or not, and make changes without public knowledge, consultation or independent scrutiny. Examples of such changes include:

- the addition of a third (ventilation) shaft for the CCT (to act only as a 'sump' to draw off the polluted tunnel air-stream before exhausting it untreated through the stack) at a cost of \$40 million. Yet, installing comprehensive filtration and treatment systems would have achieved much more beneficial health and environmental outcomes at a fraction of the cost.
- Similarly, after the Minister for Planning approved the Lane Cove tunnel, the RTA self-approved a \$60 million change to the ventilation design with no scrutiny of the health or environmental effects of the change, no consultation with DEC or DIPNR, let alone the public, by claiming the change was 'minor', despite significant increases to pollution impacts! These changes included extending the tunnel length by 145 metres, deleting about 1600m of exhaust air tunnel and reduction of fan capacities by more than 20%. A weak protest letter from DEC seven months later was the only reaction, without even a demand for independent reassessment of the new impacts.
- The collapse of the Lane Cove block of flats was another, more recent example of a self-approved change made in secret.

Contract negotiations are made in secret, not only from the public but also from the regulatory

agencies who are not privy to the concessions and compromises made to seal a deal. In these deals, it seems the public good is the frequent casualty as the RTA attempts to secure the most beneficial arrangements for its department and minister rather than its customers.

It is only through Parliamentary calls for papers, and the occasional insider leak to the media that the public has been made aware of the existence and extent of problems.

5. The conditions of approval set are often vague, unenforceable, unenforced and yet seemingly set in stone (f and g)

In the absence of licensing arrangements, conditions of approval are used to regulate the construction and operation of tunnels. The M5 East has over 150 conditions, and the number of ineffectual conditions has exponentially increased with each new project. The public is repeatedly told these are strict conditions which are stringently enforced. Our experience with the M5 East has been in stark contrast:

- Many of the conditions are quite vague, or grossly inadequate. For example

Condition 78, which relates to community consultation, requires that such a mechanism exist, not that it operate effectively. The case study example in the following section illustrates the point.

Condition 70 requires Carbon monoxide levels inside the tunnel not to exceed set limits over a 15 minute period, but the RTA has argued that this should be interpreted to mean that a person should not be exposed to these limits, as measured by a stationary monitor for a rolling 15 minutes, thus allowing for much higher pollution levels inside the tunnel.

Condition 71 prohibits portal emissions, but does not require the RTA to publicly report on air quality monitoring at the portals, so there is no way of independently verifying compliance.

Conditions 72 and 74 require filtration systems to be installed if exceedences of external air quality are established to be due to the stack. In January 2005, an exceedence was detected, and the RTA denied it was due to the stack. A subsequent investigation by the CSIRO found it was difficult to establish the cause because of serious systemic problems with the way monitoring is done, leading to little confidence in the reliability of the figures. The CSIRO made 7 recommendations, yet when DIPNR released the report on 21.9.05, it declared that the report clears up the issue BUT did not require the RTA to implement the recommendations. So with DIPNR's tacit permission, the RTA is able to claim it meets the standards, by making sure their equipment and monitoring regimes remain faulty and unreliable!

- Regardless of their acknowledged deficiencies or inadequacies, conditions of approval cannot be changed, except by the RTA itself! This means that if there are unintended problems, unless the RTA is agreeable, nothing can be done. Examples of such inadequacies include outdated air quality standards, the fact that the traffic volumes are almost double the original design specifications, that the tunnel was not designed to cope with speeds of less than 20kms per hour. As the EPA acknowledged: *"once constructed (tunnel) it is usually not feasible to make changes to the project that were not allowed for in the original design"*⁸. This is a disastrous situation if the original assessments or designs are in anyway inaccurate, and in the case of the M5 East they have been demonstrably so. It is appalling that these immutable conditions do not allow for any continuous improvement due to new insights, technological advances or changes to road networks, for a project that has a life span of several decades.
- The enforcement of the conditions seems to depend on the RTA's willingness to comply. While DIPNR is supposedly responsible for regulating the tunnel, we have found that there is no government body with the expertise, resources, responsibility or willingness to monitor and enforce compliance. Breaches of conditions were evident to the community within days

⁸ Woodward, Ibid.

of tunnel opening, but the RTA refused to address complaints, denied (and continues to deny) problems and DIPNR, EPA and NSW Health have engaged in an endless round of buck-passing. It is only through Parliamentary calls for papers that documentary evidence of breaches was able to be obtained, and brought to the attention of the regulator and the public.

As a result of these documents and highly critical Parliamentary Inquiries, DIPNR decided in 2003 to audit RTA compliance with the air quality conditions. A draft report, dated September 2004 (released through Parliament) showed repeated and systematic breaches of several key conditions, such as the tunnel operating for months without an approved environmental management plan, illegally pumping pollution from the tunnel exits, and failing to accurately monitor, measure or control pollution levels, due to inadequate monitoring and quality assurance management systems, as well as flagrant disregard for established protocols and agreed timelines. One of these breaches, relating to the investigations of international developments in tunnel emission treatment systems (condition 79) had serious consequences as the failure to complete the report in the specified time frame resulted in the approval of two more unfiltered tunnels.

The DIPNR audit report has been suppressed since last September, after being challenged by the RTA's legal advisers. The RTA has strongly challenged the legality of the conditions, their interpretation, as well as the findings, the requested corrective actions and observations made. Whether these challenges have any merit or not, the process clearly shows the ineffective nature of such a regulatory framework, when there is no transparency, clarity, or compliance with minimal requirements. Repeated assurances by DIPNR that it takes its regulatory role seriously ring very hollow when it has taken over 3 years to have some of the basic safety problems investigated, let alone addressed. Many of its letters to the RTA requesting modest improvements have been ignored or challenged, with immunity.

The following account summarises the frustrating attempts of one community representative to engage with the RTA's consultative committee and their response to being audited.

Community consultation and accountability, RTA style

Community consultation for the M5 operational stage is carried out under condition 78:

A Community Consultative Committee must be established by the Proponent. This Committee must include representatives from the Turrella and Undercliffe areas and relevant Council(s), and must be established prior to the commencement of construction. The Committee's role includes: input into defining/formulating air quality monitoring requirements; accessing and disseminating monitoring results and other information on air quality issues; and associated potential impacts.

Elsewhere the conditions make it clear that the functions of the committee include overview of all monitoring results, examination of international developments in emission treatment technologies and supervision of real time monitoring of PM10, NOx and CO and its reporting.

The community representatives consist mainly of people who have been involved in the process since before the start of construction, with the majority of community members of the Air Quality Community Liaison Group (AQCLG) having no association with RAPS. Few, if any, of the non-community members (RTA or BHBB JV) were involved with the committee before the opening of the tunnel so there is a lack of continuity and knowledge of the history of many of the continuing issues of concern to the community.

All members of the committee, including the RTA and operator representatives are required to act openly and honestly with each other, according to a 'Participation Protocol' to which all are required to give assent and observe. The RTA and its contractors are specifically enjoined to "Provide fair, accurate and unbiased advice" and "Provide advice that is based on an accurate representation of facts". In addition "When it later becomes known that this advice, given in good faith, is no longer factually correct, this must be brought to the attention of the members at the earliest possible time."

The long term community members of the committee have made and continue to make a significant contribution to the operation of the committee and have developed significant expertise and knowledge of the issues. They have attended the parliamentary inquiries and the taken part in the RTA sponsored 'International Workshop on Tunnel Ventilation' in June 2000.

This long commitment is made, without thanks or recognition, in what is often a difficult and sometimes acrimonious atmosphere.

The RTA has regularly attempted to limit the scope of discussions, claiming them to be beyond the ambit of the committee.

They have refused to provide information or regular reports to the committee about:

- air quality inside the tunnel
- incidents affecting air quality inside the tunnel
- numbers and nature of complaints about in-tunnel or external air quality
- frequency of portal emissions
- monitoring of emissions outside of portals
- traffic volumes, vehicle mixes and usage patterns

Specific example

As a result of documents released through Parliament, RAPS became aware of what appeared to have been significant breaches of the minister's conditions relating to air quality. When the 2002 inquiry's recommendations were all ignored, we, through the Environmental Defenders Office, contacted the RTA drawing attention to the serious nature of the apparent breaches and requested prompt action. This letter, dated 16th October 2003 made no mention of any form of legal action.

On the 3rd November, RAPS, again through the Environmental Defenders Office, forwarded the latter which had been sent to the RTA to Ms Jennifer Westacott, Director-General of DIPNR with a covering letter expressing their concerns and requesting that she take appropriate regulatory action to remedy and restrain the identified breaches.

RAPS received a response from Sam Haddad, Deputy Director General of DIPNR dated 25th January 2004, informing RAPS that his department would be carrying out an audit of compliance with the conditions of approval relating to air quality and undertaking to keep us informed. The suggestion by DIPNR of a strategic audit had already been noted by the 2002 inquiry.

At the AQCLG meeting for the 17th November 2003 the RTA, as represented by Mr P Gallagher refused to discuss any issues relating to air quality, even those which had been listed in the meeting agenda, "in the light of potential legal action", in spite of the fact that the letter had made no mention of such action.

At the next meeting, three months later, on the 9th February 2004 Mr Gallagher announced:

"The Department of Infrastructure, Planning and Natural Resources (DIPNR) has advised the Environmental Defender's Office (EDO) that, as a result of EDO representations on behalf of the Residents Against Polluting Stacks (RAPS), DIPNR will be conducting a preliminary audit on the M5 East's compliance with the Conditions of Approval for air quality.

As a result of that advice, the RTA representatives and RTA Contractors at this meeting, and at subsequent meetings of AQCLG, are not in a position to comment in any way, until the audit has been completed, upon issues relating to the following Conditions of Approval:

- Condition 70 - In-tunnel CO
- Condition 71 - Portal emissions
- Condition 72 - Stack emissions. and
- Condition 73/5 - Complaints mechanism, Monitoring and Mitigation Measures.

The RTA will be defending its compliance with the Conditions of Approval during the audit and regrets that it took this action at AQCLG to ensure that the integrity and effectiveness of the audit are not undermined in any way.

The RTA also regrets that this action may undermine the ability of the AQCLG to provide a forum for the frank and open discussion of matters of community concern during the audit process."

Community representatives found this response by the RTA incomprehensible.

- The RTA was admitting that it was deliberately undermining the work of the AQCLG
- The issues being raised by the audit process were likely to be similar to those being raised by the AQCLG members.
- DIPNR had both the right and the responsibility to examine the RTA's compliance with the conditions of approval
- Members of the AQCLG intended to raise issues of concern with the DIPNR auditors and indeed did so

The true nature of the RTA's concern and the extent of its commitment to openness became obvious with the release of papers under parliamentary order in May 2004 and the announcement on the 21st May 2004 (triggered by the call for papers) that there had been extensive portal emissions from the M5 tunnel portals occurring over many months.

These emissions were extensive, repeated and part of an improperly modified and unapproved operational management plan. They were well known to the RTA tunnel management.

Although numerous questions and discussions relating to portal emissions and their possible occurrence had occurred at AQCLG meetings during the period between August 2003 and the announcement in May 2004, absolutely no information had been given to the AQCLG about the emissions.

In December 2003, a number of families living close to the Bexley Road portal reported, at a meeting with NSW Health about the residents health study, that they had recently been experiencing heavy pollution resulting in chest irritation and sore eyes. Because the occurrence of portal emissions had been concealed by the RTA, the medical experts present were unable to identify the likely cause, mainly because of the repeated assurances by the RTA that such major emissions did not occur.

These unreported emissions, which occurred during the course of the residents' health study, caused the estimates of pollution exposure used in the study to be wildly inaccurate, and affected the conclusions made.

The findings of the DIPNR audit have still not been made publicly available, nor have the findings been reported to the AQCLG. An undertaking was given that it would be discussed at a meeting scheduled for the 23th January, however this meeting has now been postponed until the 6th February.

Community involvement and planning – examples from overseas

It is sometimes difficult to penetrate the actual policies applied in other countries and the considerations which drive them, especially in relation to the use of filtration technologies in tunnels.

Our experience and extensive contacts in other countries, often in situations very similar to those existing in Sydney (particularly in the case of Madrid) lead us to the following conclusions.

Japan

Tunnel filtration is widely used in Japan and has been in use for over 30 years. It is installed both for the control of pollution inside tunnels and also to prevent pollution impacts outside the tunnels. The Japanese are adamant that the appropriate use of in-tunnel cleaning technologies can lead to ventilation cost savings in the order of 30% over the life of the tunnel.

The RTA report following their delegation's visit to Japan in 2003 contains the following:

“Regulatory/approval process for motorways in Japan

Plans for Japanese motorways, including tunnels, are developed to coordinate with the improvement plans of local government. The views of local residents are considered before the local government makes planning decisions.

Environmental assessment of tunnels is conducted in accordance with the Environmental Impact Assessment Law and the regulations of local government. Approval for construction is provided by the Minister of Land, Infrastructure and Transport. The Minister is required to confer with the Minister of Finance and relevant local road authorities, and obtain the approval from the local assembly, before giving approval to a project.”

The hand written notes taken by Mr G Humphrey, the RTA tunnel expert on the delegation, further show that discussions and consultations are held with the local community about specific plans for stack locations and portal emissions, rather than just vague concept proposals. Decisions are then made, in ways that are directly responsive to community attitudes and views.

Norway

In Europe, Norway has placed itself as a leader in tunnel technologies with almost 1000km of tunnels building at a rate close to 25 km per year. Most of these tunnels are outside of cities in rural or remote areas. Some more heavily trafficked or long tunnels are filtered to assist ventilation, rather than for external environmental reasons

In urban areas many longer tunnels have filtration fitted. These installations are mainly to protect the external environment. Not all of these filtration systems are currently being used. The reason for this is not clear but may be related to changes in vehicle emissions since the tunnels opened. The most recently opened filtered tunnels in Norway are the Laerdal, Bragernes and Strømsås, all of which opened between November 2000 and June 2002.

What is clear is that the initial impetus which brought about the use of the technology was the demand by the public that it be used to protect local residences and in one case a hospital and school from emissions. There appears to be growing community pressure on the Norwegian Government to rehabilitate and use the filtration installed in several city tunnels.

Madrid

The emerging situation in Madrid is probably of more interest to the situation in Sydney. The City of Madrid is currently constructing an major ring route, the Calle 30, which will be about 100 km in length, 50 to 55 km of which will be in tunnels.

The major motivation for the construction appears to be an attempt to alleviate a relatively serious ambient air quality problem.

Local residents and environmental groups opposed the plan which envisaged unfiltered stacks in urban areas, close to high rise residences.

RAPS was initially contacted in March 2005 by a member of a community group (who is also an aeronautical engineer) in the mistaken belief that Sydney's new stacks and tunnels were filtered. We had to inform her that was not the case.

In April she contacted us telling us that the Mayor of Madrid had just announced that the tunnel stacks would be filtered and passed on the following information:

Information provided during a meeting of the community with tunnel engineers:

- The design of the cleaning system was prepared by the Escuela Tecnica Superior de Ingenieros Industriales, Universidad Politecnica de Madrid.
- The original design of the ventilation system did not include filtration but was changed because of concerns by the Mayor of Madrid about health impacts on the community.
- The filtration of a large part of the ring route is expected to have a significant beneficial effect on external air quality.
- It is not yet announced exactly what technology will be used but Siemens Filtrontec, CTA (Norway) and Matsushita have all given them presentations recently.

An outline of the requirements for the filtration systems was issued with a response date of 26th July 2005. Companies tendering for this first stage of the ring route construction included Matsushita (Japan), Siemens Filtrontec (Germany), CTA (Norway) and Aigner (Austria).

Contracts were expected to be signed in the New Year. The filtration systems specified will remove in excess of 90% of fine and ultra-fine particles, over 80% of nitrogen dioxide and 30% of total oxides of nitrogen from the stack exhaust. When completed they will represent the most advanced and efficient tunnel exhaust purification systems in the world.

This rapid action is clearly a response to community wishes and concerns and stands in clear

contrast with the farcical filtration trial, announced and re-announced since just before the 2003 state election. Despite promises by the then Min Scully to “crack the whip” on the RTA, the announcement in August 2004, of three companies short-listed for the pilot, and apparently \$500,000 of public money, there has been no trial, or even commitment to any type of filtration for any tunnel.

Conclusion

We welcome this inquiry for the opportunity it provides for public scrutiny and debate about how major infrastructure projects are assessed, approved and regulated. As a community group, we are exasperated by the complacency of the agencies charged to protect the public good, and the way in which they have ceded their responsibilities to do so, with apparent impunity. The systemic subversion of key safeguards and public accountability mechanisms were identified in the three earlier inquiries, which warned that the resulting problems would be compounded in tunnels then in the planning stages.

We hope that the Committee, and in particular, its Government members, will not allow this inquiry's findings and recommendations to also be ignored, but instead will put a stop to the escalating economic, environmental and political costs of such poor processes and outcomes.

On behalf of RAPS (Residents Against Polluting Stacks)

Mark Curran

Wednesday 18th January 2006