TEC Action for Air Review 2004 table 1
Objective 1. Integrate air quality goals and urban transport planning

Review	Key Agencies	Stated goals	Timelines/ $$$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
Actions						
Strategy A. Integrate urban infrastructure and transport planning	Ministry of Urban Infrastructure Management. Urban Infrastructure Management Committee. DUAP. Public Trasnport Authority Public Transport Advisory Council	Long-term transport plan for the Greater Metropolitan Region (GMR)		Urban Infrastructure Management Plans (yearly)		Metro Strategy intended to address these issues and ensure that transport planning is integrated with land use planning. Department of Infrastructure, Planning and Natural Resources created to better integrate transport and planning. Minister for Infrastructure, Planning and Natural Resources has a key role in transport infrastructure decisions. These arrangements are relatively new and as yet untested.
1.1 Develop a transport plan to reduce vehicle VKT growth	Minister for Transport & Roads. RTA DUAP DoT	Stopping VKT per/cap growth Stopping total VKT growth	By 2011 By 2021	Integrated transport plan *Action for Transport 2010*.	Integrated transport plan released in 1998 as *Action for Transport 2010*. Latest figures show Per Cap VKT increased 15.3% 1991-97 Total VKT increased 23.5% 1991-97. Private cars used for 70% of all trips in Sydney. Car journeys have increased by 18% since 1991. Train and bus travel have increased by only 11% and 5% respectively in the same period.	From 2000 to 2001 there has been a slight decline in total kilometres travelled, kilometres travelled per person, average trip length, total vehicle kilometres travelled (VKT) and VKT per person. Latest figures show that in 2001, there was a 0.1% decrease in total vehicle kms travelled (VKT) on an average day. Strong population growth in Sydney likely to result in sharp VKT increases unless major improvements are made to public transport. However, private cars still accounted for 70% of trips on the average weekday. There was also an overall decrease in train and bus travel on weekdays, with trains down from 5.0% to 4.9% and buses from 5.9% to 5.6% The Transport & Population Data Centre (TPDC) http://www.planning.nsw.gov.au/tpdc/indicators.html – Key Transport Indicators, Household Travel Survey data set 2001
1.2 Make the reduction of VKT a planning priority across government		Stopping VKT per/cap growth Stopping total VKT growth Reduction of 9 % in per/cap VKT	By 2011 By 2021 2011-2021	Urban infrastructure management plan (yearly for 5yrs)	Per Cap VKT increased 15.3% 1991-97 Total VKT increased 23.5% 1991-97. Private cars used for 70% of all trips in Sydney. Car journeys have increased by 18% since 1991. Train and bus travel have increased by only 11% and 5% respectively in the same period. Environmental Impact Statement (EIS) for Parramatta rail link estimates 180 million km/yr	Private cars continue to account for 70% of trips on the average weekday. This is only likely to increase with the further extension of motorways and construction of tunnels, which will encourage new and induced traffic growth. Construction of the Western Orbital is yet another example of continued road building. Proposal to extend the M4 East with either a short or a long tunnel under Parramatta Road. Whilst intended to reduce freight traffic

		Reduce projected VKT growth by 43 % Increase public transport journeys to work (JTW) to 30%	1991-2021 By 2021		reduction in VKT and peak hour traffic volume reduction of 3-4%. EIS for Liverpool-Parramatta Transitway estimates 13, 825, 000 km reduction in VKT by 2016, against base case. New roads such as the Western Orbital, Windsor Road upgrade and associated urban/commercial growth are likely to counter VKT reductions in Western Sydney.	along Parramatta Road, the preferred long tunnel option would encourage more private vehicles to commute into the CBD and nearby areas, and would require a minimum of two ventilation stacks. Director General of DIPNR has specified, however, that it should be part of broader transport solutions. In October 2004, the RTA also announced it is considering an additional westbound lane on the Anzac Bridge 'to improve traffic flow'. The Anzac Bridge already has four city- bound and three west-bound traffic lanes. The addition of another is only likely to increase traffic in the area, without improving traffic flow in the long term. Parramatta to Epping section of Parramatta Rail link slashed. VKT targets lack enforceability. http://www.rta.nsw.gov.au/newsevents/2004_10_anzacbridge.html?hhid=2
Review	**Key Agencies**	**Stated goals**	**Timelines/ $$$ (where stated)**	**Related plans/ strategies**	**TEC Review 2001**	**Change since 2001?**
1.3 Integrate transport issues in regional and local planning	DoT RTA DUAP Local councils	Higher-density development close to transport nodes Concentrate retail, commercial, entertainment, community services into centres		Urban consolidation policies Centres policies	1999 RTA Environment Report states "RTA working with DOT, DUAP and local government to improve decision making on transport issues through the statutory planning process. A high level Travel Management Task Force is to investigate options for reducing car dependency." No specifics or reports on progress so far provided RTA advise (1/3/01) that further information not currently available. TEC wrote to DoT 7/2/01 seeking further information on progress of multi-agency taskforce to promote best practice in road planning, design and maintenance as well as co-operation with local councils to improve decision making. Reply dated 20/3/01 provided no information. Reply via EPA July 2001 simply reiterates information from 1999 RTA Environment report. Provides example of the Parramatta Regional Environmental Plan. SEPP 63 introduced to protect corridors for public transport from development. Policy makes transitway zonings to protect corridors possible.	A *Metropolitan Strategy Discussion Paper* was released by DIPNR in September 2004. It is the basis for developing a *Metropolitan Strategy* for Sydney over the next 30 years. Nine directions for Sydney are outlined: 1. Plan for balanced growth within natural resource constraints 2. Strengthen the regions 3. Manage growth and value non-urban areas 4. Build liveable new communities 5. Renew existing areas 6. Strengthen employment centres and precincts 7. Connect centres with the transport network 8. Target infrastructure 9. Use appropriate funding and governance arrangement The Discussion Paper is based on the feedback received at the Sydney Futures Forum in May and the Local Government Forum in June 2004, and will also be considered at discussion groups in October and November, with submissions closing on 30 November. The move to strengthen employment centres and precincts is a positive move towards reducing car dependence and integrating transport planning. The 'Centres Policy' encourages jobs to locate in centres such as Sydney, Parramatta, St Leonards, Hurstville, Hornsby, Penrith and Liverpool, with centres connected by the transport network. Parramatta Road Committee established to advise on urban redevelopment along Parramatta Road corridor.

1.4 Implement accessibility criteria for new residential development	DoT DUAP	Maximise accessibility to public transport for new residential areas		Metropolitan urban development program (UDP)	Accessibility criteria for new residential development prepared by DOT included in accessibility criteria for additions to the Government's Urban Development Program (UDP) in October 1997. These were updated by an inter-agency land and housing supply forum held in February 2000. The new criteria consider *Action for Air* goals and require that decision makers address the capacity of the land use/transport patterns of the site make a positive contribution to the achievement of travel and vehicle use goals. These criteria have been applied to all assessments of potential UDP additions since their initial adoption. SEPP 5 amendments effective 1/12/00 require consent authority to refuse a DA for SEPP 5 Housing unless it is within 400 metres of certain services or a transport service will take residents to those services. The service must operate Mon-Fri in daylight hours.	Direction 4 of the *Metro Strategy Discussion Paper* to 'build liveable new communities' is further recognition of the need to maximise accessibility in new residential development. It states new greenfield communities will be planned to incorporate local jobs, schools, shops and parks, and with access to safe and reliable public transport.
1.5 Set targets for JTW by public transport at key centres	Parramatta City Council	Increase pub transport JTW from 25% to 40-60%		Parramatta Regional Environmental Plan (REP)	REP sets target to increase JTW by public transport from 25% to 40-60% by improving public transport and increasing density and providing mixed use zones around transport nodes. More detail and specific timelines needed on strategies to improve pedestrian access and cycling. REP largely restricted to statements of intent. REP lacks specific details of parking policies needed to support transport initiatives if JTW targets are to be achieved. Need firm commitments and timelines. REP contains only statements of intent and possible strategies. Integrated approach to Parramatta REP, including growth target for public transport in line with growth in the workforce, to be used as model for planning development of other centres.	Statistics could not be found on Parramatta City Council or Transport and Population Data Centre websites to indicate they have met their targets, or any increase in JTW by public transport. The Parramatta City Community Profile states 64% of JTW was by car, but this is based on 1996 statistics. However, a $110 million transport interchange is currently under construction in Parramatta, incorporating: > a new bus/rail interchange on Argyle Street > upgraded western concourse and station facilities > a new bus underpass linking Argyle & Hassall Streets > improved safety and amenity at Parramatta Station Transport Precinct **A Draft Transport Management and Accessibility Plan (TMAP) was written in 2002 to integrate the Parramatta REP Access Strategy, together with more recent planning for the introduction of a rapid transit bus network, pedestrian and bicycle network implementation programs and the Civic Place master planning study.**

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
S.B Improve management of freight transportation		Improve efficiency of urban freight movements Reduce the impact of heavy vehicles in built up areas		More integrated planning for the management of freight		
1.6 Design and implement an integrated freight strategy	Minister for Transport & Roads	Develop integrated strategy	end of 1998		*Freight 2010* not yet finalised. Legislative Council General Purpose Standing Committee No 4, examining Freight Rail privatisation recommended that it be published by 30 June 2001. Committee also recommended that 50% of proceeds from any FreightCorp sale be used to improve rail freight infrastructure. 1997 Rail Summit of the Australian Transport Council saw ministerial agreement on formation of Australian Rail Track Council (ARTC). Major goal to harmonise standards and lift poor speed-weight performance to average 80km/h at 23 tonnes axle load. NSW Government yet to reach agreement with ARTC on how to proceed in NSW. Interstate rail freight speed-weight performance poor by United States Class 1 standards due to poor alignment, light rail and antiquated signalling. Worst sections are Sydney-Brisbane (60kph) and Sydney-Melbourne (70kph). Newcastle-Brisbane average speed is 47kph. Pacific Hwy being upgraded to allow B-Double operations over its length in 2002. Unless tracks are improved an irretrievable loss of freight to roads may occur. More than 80% of Sydney-Melbourne freight carried by trucks. Journey takes approx 10hrs by road and 14 by rail. Reliance on road transport adds 500,000 tonnes per annum to CO_2 emissions nationally. Contracts for M2 restrict development of competing rail freight transport. Western Orbital will compete with public transport and rail freight. No equivalent federal funding for rail freight in this region.	*Freight 2010* does not appear to be finalised yet. However, on a federal level, The *Australian Logistics Industry Strategy* was released in July 2002 as part of the Commonwealth Government's *Freight Transport Logistics Industry Action Agenda* – to form a united logistics industry. The Strategy is the responsibility of the newly formed industry group, the Australian Logistics Council. http://www.ministers.dotars.gov.au/ja/releases/2002/July/a89_2002.htm DIPNR now doing freight strategy considering Port Botany expansion and Chullora freight hub proposals.

Objective 2. Provide more and better transport choices

"Objective: To improve transport choices and encourage reduction in vehicle trips and kilometres travelled by both passenger and commercial vehicles".

TEC Action for Air Review table 2

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
Actions						
Strategy A. Provide better public transport		Improve public transport - road and rail.		'Greater Western Sydney (GWS) Public transport Strategy' extend heavy rail, integrate light rail, improve public transport on roads, improve public transport management, upgrade regional transport strategies		The Rail Clearways plan aims to improve capacity on CityRail's Sydney suburban network, and is due for completion in 2010. The plan comprises 15 projects to separate the network's 14 metropolitan rail routes into 5 independent clearways. The aim is to remove bottlenecks and junctions, reduce congestion and delays, and allow for simpler timetables. It will mean delays on one train line will not affect the timetable of another line, as is currently the case. http://www.cityrail.info/news/clearways.jsp *Accessible Transport Action Plan for NSW Transport Agencies* released in December 2002 to guide the following agencies: Ministry of Transport Rail Infrastructure Corporation Roads and Traffic Authority State Rail Authority State Transit Authority Waterways Authority in the provision of access to transport services for all sections of the community including people with a disability, older persons, children, students and commuters. http://www.transport.nsw.gov.au/using_trans/access-trans-action-plan.pdf
A.1 Greater Western Sydney Public Transport Strategy		Improve public transport in GWS		'GWS Public Transport Strategy'		

2.1 Consider funding for public transport		Promote growth in public transport. Allow medium & long-term public transport infrastructure planning		'Integrated Transport Plan'	Integrated transport plan *Action for Transport 2010* released 1998.	*Action for Transport 2010* appears not to have been implemented. *Action for Transport 2010* documents are no longer available from the Ministry for Transport website. http://www.transport.nsw.gov.au/pubs_legal/act2010.html *Action for Transport 2010* is not mentioned on the DIPNR website except an acknowledgement that informs *Shaping our Cities – The Planning Strategy for Western Sydney*. Metro Strategy examining public transport levies in new urban release areas.

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
2.2 Enhance the Parramatta rail link		Improve rail access to Parramatta, South West, North West and Western Sydney. 5 new railway stations and 7 existing stations upgraded. Rosehill-Camelia station to incorporate interchange with Parramatta to Strathfield Rapid Bus Only Transitway. 3-4% Peak hour traffic volume reduction. Reduce passenger VKT by 180M km/yr.	Train services to commence 2006	Environmental Impact Statement (EIS) & summary	EIS was released early 2000. Planning and environmental assessment taking longer than scheduled. Parramatta-Chatswood link cost blown out from $1.4b to $2b. Project has now been split in two with public funding announced for first stage between Epping and Chatswood and an underground bus exchange at Parramatta. No funding for second stage between Epping and Parramatta. Completion of 15.5 km Chatswood-Epping link scheduled for 2008. Cabinet sub-committee to examine funding options. Decision to delay rail link announced at same time as additional $123m to upgrade Windsor Road to 4 lanes. Minister for Planning assumed planning authority Jan 01 Debate as to whether heavy rail is best option. Some arguments suggest that light rail may be cheaper and more suitable.	Plans for the Parramatta to Epping rail link have been cancelled, setback for public transport infrastructure in Parramatta. In June 2002, the Thiess Hochtief Joint Venture was awarded the $880 million contract for tunnelling and track works on the Epping to Chatswood component of the Parramatta Rail Link. The Epping to Chatswood link is a priority in the *Metropolitan Strategy* and is expected to open in 2008. http://www.thiess.com.au/index.cfm/opr_civil.proj.PRL/

2.3 Consider fast-tracked public transport for the Hoxton Park to Parramatta corridor	DoT	Government to identify most appropriate services for a rapid public transport route on reserved corridor from Hoxton Park to Parramatta.			1999 RTA Environment Report states "The RTA, in conjunction with the DoT, is developing a rapid bus-only transitway to serve this corridor. The first stage of construction of the transitway and bus station in Bonnyrigg Plaza has commenced." No other details on progress provided. TEC wrote to DoT 7/2/01 seeking further information. Reply dated 20/3/01 provided no information. Reply via EPA dated 14/7/01 states that "fast-tracked public transport is being implemented as part of the Western Sydney Transitway network committed in Action for Transport 2010. On target for completion in 2003".	The Liverpool to Parramatta Transitway (T-Way), incorporating Hoxton Park Road, was completed in 2003 as part of the new transitway for Western Sydney. It is dedicated exclusively to buses travelling between Liverpool and Parramatta. http://www.t-way.nsw.gov.au/default.htm
2.4 Plan for public transport in north-west Sydney	DoT	Work at Mungerie Park begins Richmond line upgrade	By Feb. 2000 During 1998	To link Rouse Hill, Mungerie Park, Blacktown & Parramatta	TEC wrote to DoT 7/2/01 seeking information on Richmond Line upgrade, strategic plan to link Rouse Hill release area with the Mungerie Park sub-regional centre and other centres as well as feasibility study of light rail service on Sunnyholt Road transport corridor. Reply dated 20/3/01 provided no information. Reply via EPA dated 14/7/01 simply states "Comprehensive package of measures for NW Sydney outlined in *Action for Transport 2010*". Western Suburbs Regional Organisation of Councils (WSROC) advise that Castle Hill to Epping rail line is likely to have a long time frame. This makes completion of Blacktown to Castle Hill and Parramatta to Rouse Hill transport routes more important.	The North-West T-way is a priority under the *Metro Strategy*, and approval was granted in Feb 2004. The T-way consists of two interconnected transitways: 1) Parramatta to Rouse Hill; and 2) Blacktown to Castle Hill Stage One involves the Parramatta to Rouse Hill and Blacktown to Parklea sections, and is expected to start in early 2005. As at July 2004 tenders for design, construction and maintenance had been sought. Completion of Stage One is forecast for the end of 2007. Bus services will start at the end of 2007, with a service of the new Rouse Hill Town Centre when it opens for business.

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
2.5 Improve bus services in western Sydney	DoT			GWS public transport strategy Transitway policy Upgrading public transport information Road upgrades for bus priority Interchange upgrades Develop cross-regional services	Interchange improvements at Merrylands & Railway Square. Wentworthville commuter car park. Interchanges also completed at Liverpool, Campbelltown, Epping, Mascot, Cabarita, Kissing Point and Yurulbin in 1999-2000 and construction began on interchange improvements at Springwood, Bondi Junction and Manly. 7 new cross regional bus services introduced: Parramatta to Sydney City via Gladesville, Castle Hill to Liverpool via Parramatta, Castle Hill to Liverpool via Blacktown, Mt Druitt to Castle Hill via Quakers Hill, Mt Druitt to Parramatta via Quakers Hill. Mona Vale to Macquarie University and Parramatta to Gladesville via Victoria Road. Draft EIS for Liverpool-Parramatta Transitway released August 2000. Only 2.4km completed on government owned land. Consent of councils and other agencies needed for the rest of the route. A major problem with the project is the large number of traffic lights at crossings with major roads which will slow bus travel. Final approval now being sought. Draft Overview Report on Western Sydney Transitways Network being completed (DoT 2000 Annual Report) Performance Assessment Regime (PAR) to ensure best practice standards and service benchmarks are achieved before renewal of private bus contracts still being finalised. PAR to be introduced "once industry and community consultation has been completed" (DoT 2000 Annual Report) Discussion paper on PAR released late 2000. TEC wrote to DoT 7/2/01 seeking further information on bus only transitways and improvements to quality of private bus services. Reply dated 20/3/01 provided no information.	Barrie Unsworth's *Review of Bus Services in NSW*, published in February 2004 was a positive step towards integrating the NSW bus system. In particular, simplifying the Sydney bus system, from 87 contract zones down to 15. It also removes the current pricing inequity by raising public bus fares over a 5 year period to match private bus company fares. Pensioner Excursion Tickets will rise from $1.10 to $2.50, but will be valid on a wider range of services including private buses and the outer boundaries of the CityRail network. Concern has been expressed that the increase in public bus fares may impact on patronage. On balance, however, the equity between public and private fares and integration of services is likely to have a beneficial effect. Implementation of the Review's recommendations are planned to commence in January 2005

2.6 Provide public transport to new suburbs	DoT	Introduce public transport at the outset of new development			Release of Urban Greenfield Policy to Commercial Contract Holders completed in May 2000. First competitive tender process commenced in area of Blackbutt, Flinders and Shellcove in the Illawarra in June 2000. North Western Sydney has a history of mass releases of land with very poor access to public transport. TEC wrote to DoT 7/2/01 seeking further information on requirements for awarding bus contracts in greenfield areas. Reply dated 20/3/01 provided no information. Reply via EPA 14/7/01 states only that DoT is working with transport agencies, DUAP and local councils to improve public transport to new urban development examples provided of Transport Management Plans for ADI site, Rhodes Peninsula and SEPP 59 (Greystanes).	In November 2002, Andrew Refshauge, the Minister for Planning, introduced an interim transport levy of $15,000 per lot on new land releases at Elderslie, Spring Farm, Balmoral Road and Second Ponds Creek to help fund essential transport infrastructure upgrade. This is a major step forward for clean air and better public transport. http://www.parliament.nsw.gov.au/prod/lc/lcpaper.nsf/0/6E0C5A0C0A665E0FCA256CCB0004A05B http://www.tec.org.au/member/tec/news/media/20021120_levy.html The *Metro Strategy Discussion Paper* also recognises the need for 'developer levies in greenfield areas' (p.13)

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
A.2 Extend the heavy rail network						
2.7 Complete construction on the new southern railway		Open the New Southern Railway	May 2000 $600m allocated		Opened but patronage poor. Airport Link in receivership, Government forced to take over line. Problems due to high cost of tickets to Airport Link stations, reliability problems, lack of baggage facilities on trains and at airport. Major shortcoming is that the service does not begin operating early enough to suit airport workers. More than half of trains from Cronulla and Waterfall lines do not stop at connecting Wolli Creek Station. Airport Link Stations have insufficient seating. Off-peak services to inner west stations such as Newtown and Stanmore cut back when airport line opened.	No figures are available regarding patronage on the Airport Link. However, the price of a train ticket from the city to airport is currently not competitive with the cost and convenience of a cab.
2.8 Extend the Eastern suburbs railway line		Link Bondi beach, high density residential & tourist precinct, to CityRail network			Project abandoned due to rising costs, expected poor patronage levels and environmental issues. Funding announced for constructing a turnaround loop at Bondi Junction to speed up turnaround and increase services on Illawarra line instead. This would increase number of trains on Illawarra line from 14 to 18 an hour. This equals an increase in capacity of 6,000 passengers per hour. Turnaround loop expected to be completed 2005. Annual passenger growth rates at Illawarra line stations since 1996 have been three times network wide growth. Annual growth for Sutherland has been 6 times the network-wide growth.	Bondi Junction turnaround loop is currently under construction, to be operational in 2005 http://www.cityrail.info/news/clearways_routes.jsp

2.9 Construct the Homebush Bay rail loop		Make public transport the dominant form of transport to events at Homebush		New rail link Cross-regional bus services Limited car parking Integrated ticketing to events	Line completed. Very successful during Olympics and other major events. Restrictions on parking and vehicle access important factor in encouraging public transport use and need to be retained. 2001 Easter Show, provided discounting parking, however, with parking costing as little as $10 per day. A family of four travelling from the suburbs would save $7 by driving rather than purchasing a Showlink ticket (SMH 6/4/01).	SOPA still promoting car parking and appears to be becoming dependent on revenue form parking. SOPA has conflicting revenue and public transport requirements with redevelopment.

Review	**Key Agencies**	**Stated goals**	**Timelines/$ $$ (where stated)**	**Related plans/ strategies**	**TEC Review 2001**	**Change since 2001?**
A.3 Integrate light rail						

2.10 Integrate light rail		Integrating light rail into transport network		EIS re extension of central-Pyrmont route	Inner West Light Rail extended 3.1km in August 2000 linking Wentworth Park to Lilyfield. Feasibility study of further extension to Ashfield Railway Station to be conducted. CBD extension to Circular Quay is needed to ensure financial viability. It should be developed before Cross-City Tunnel is built. Extension shelved in 1998 due to opposition from retailers and building owners to route along Pitt St and Castlereagh St. State Government has stipulated that extension should not be built until after completion of Cross City Tunnel. Proposed sale of University of NSW land would create major obstacle to development of Eastern Suburbs light rail. Patronage on western extension to Lilyfield exceeded target of a million passengers in only the first year of operation. Patronage for entire system expected to be 4 million in 2001. Western extension has generated an additional 20,000 passenger trips per week.	Metro Transport Sydney submitted its proposal to extend the current light rail network from Central Station to Circular Quay to the Department of Infrastructure, Planning and Natural Resources (DIPNR) in May 2004. As at Nov 2004 the proposal was still to be considered by cabinet. However, former Transport Minister Carl Scully stated in Oct 2004 he and Transport Services Minister Michael Costa supported buses more than rail. He claimed bus transitways are more cost-effective, and that light rail was a 'marginal prospect in the inner-city.' The proposal includes two options for the extension route – one on George Street and one on Castlereagh Street, with Metro Transport Sydney preferring the George Street route. It is also includes an interchange between buses and trams at Central Station, as well integrated ticketing with buses and trains. Construction will take 18 months and cost approximately $180 million, a combination of private and public investment. Construction would begin immediately after the opening of the Cross City Tunnel, as it is thought the resultant reduction in traffic across the city will mean minimal inconvenience. DIPNR and Sydney City Council investigating CBD light rail options. http://www.metrolightrail.com.au/news.asp#news130904 EcoTransit Sydney proposes further extensions of the light rail network. Their 'Baylight West' proposal incorporates more inner western suburbs, including Broadway, Newtown, St Peters, the International Airport Terminal, Rockdale and Caringbah. Their 'Light Rail West' proposal includes Star City Casino, Balmain, Lilyfield, Leichhardt, Ashfield, Abbotsford, Drummoyne and Parramatta. EcoTransit's 'Baylight East' proposal for the Eastern suburbs would reduce the heavy reliance on cars and buses in Darlinghurst, Kensington and Randwick, La Perouse, Botany Bay, Kurnell and Cronulla, with an extension to Coogee Beach. http://www.ecotransit.org.au/

A.4 Improve public transport on roads						
2.11 Fund road-based public transport	RTA	To support greater modal share of road trips by public transport	1995-96 to 1998-99 $170m from RTA budget	'Public transport infrastructure improvement program' (PTIIP)	RTA advise 1/3/01 that information on funding for PTIIP to support greater modal share of road trips by public transport not currently available. Will be compiled over next 6 months as part of RTA submission to Air Quality Forum. EPA advise 14/7/01 that funding has been allocated in the RTA's Road-Based Public Transport Priority Program, plus a 10 year funding program for the Western Sydney Transport Network. No specifics provided.	No information on Public Transport Infrastructure Improvement Program (PTIIP) available. However, in 2002-03, the RTA investigated and trialled a 'Public Transport Information and Priority System (PTIPS)', a system allowing real-time traffic signal priority for buses. http://www.rta.nsw.gov.au/publicationsstatisticsforms/downloads/rta_annual_report_2003.pdf The system uses roadside antennas (which read electronic tags on board buses) or Global Positioning Systems and radio data communications to detect the location of buses. It can then alter traffic signal timing to give buses priority. Trial underway on STA's Route 400 services (Bondi Junction to Burwood). The same system may in future be linked to inform passengers at bus stops of the estimated time of arrival of a scheduled bus. This has been trialled on Sydney's Northern Beaches. http://www.rta.nsw.gov.au/trafficinformation/buses/ptips2.html

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
2.12 Implement the M2 public transport management plan	RTA DoT				M2 Public Transport Management Plan completed 1997. Included $1.6m upgrade of interchange at Epping station completed in January 2000. Following review of plan after opening of M2 addition works were completed including: Upgrading of bus stops and shelters. Additional car parking at Barclay Road bus stop. Bus only lanes run along over half of the length of the M2 from Winter Road in Seven Hills to Epping Railway Station.	No change

2.13 Implement the M5-East sub-regional air quality plan	RTA DUAP EPA Dept of Health	Reduce 70% of vehicles from residential roads	$0.5m/yr for 5 yrs (RTA)	Transport plan for M5 east	1999 RTA Environment Report states that development of plan will commence 1999/2000. NSW Parliament General Purpose Standing Committee No 5 Inquiry into M5 East Ventilation Stack recommended that development of the draft plan be completed by 30/6/00. Sinclair Knight Merz engaged to develop plan. Work began March 2001 with air pollution survey distributed to 3000 randomly selected households re car use, heating, lawn mowing etc. Completion of final plan now expected in July 2001. RTA deleted consideration of modifications to the current stack that would allow heightening of the plume during worst case conditions and options for treatment of stack emissions from scope of plan. Development of plan, with objectives of identifying major contributor of particulate matter and NO_2 a condition of approval for the M5 East motorway.	The M5 East tunnel stack remains unfiltered. The *M5-East Sub-regional Air Quality Plan* was published by Sinclair Knight Merz in April 2002. It provided an inventory of air pollutants and found mobile sources (ie mostly vehicles) contributed 89% of air pollution within 2km of the M5 East stack in summer and 63% in winter (due to higher no. of pollutants in winter). Mobile sources accounted for 17% of total particulate emissions in summer, and 12% in winter in the area. Solid fuel heaters were also found to be significant contributors. In June 2004, internal RTA documents tabled in NSW Parliament revealed carbon monoxide has been regularly pumped from the portals of the M5 East tunnel instead of its exhaust stack. This is despite approval conditions that vehicle emissions only be emitted from the tunnel's entrances and exits in extreme circumstances – eg. emergencies and major maintenance. Also in June 2004, a NSW Health Department study claimed there was no evidence of short-term health impacts of particulate matter on residents living near the M5 stack. This is despite evidence a large number of residents are suffering health impacts from air pollution in the area, and recent studies demonstrating a link between particulate matter and heart attack. The study in the *New England Journal of Medicine* (Oct 2004) showed an association "between exposure to traffic and the onset of a myocardial infarction within one hour afterward... In addition to these extremely short-term effects of particulate air pollution, its deleterious longer term effects on the entire gamut of atherosclerotic triggers cannot be overemphasized. Decades of epidemiologic evidence underscore the cardiovascular morbidity and mortality related to air pollution." A *Review of Emission Treatment Technologies* for the M5 East freeway by Noel Child was commissioned by the RTA and released in November 2004. The report was promised in Jan 2004 by Minister Scully, and the delay has significant implications for both the M5 East and other new tunnels to be constructed without filtration. The report confirms technological solutions to the M5 East's worsening air pollution already exist. "Appropriately designed and installed electrostatic precipitation equipment is considered to have the potential to deliver improved ventilation and environmental performance". Likewise, "denitrification technology has been under development and trial in Japan during recent years. Two Japanese denitrification systems, provided by Matsushita and Kawasaki respectively, have been considered as part of this review."

The RTA recently announced a 'trial' to filter both particulate matter and NO_2 in the M5 East tunnel. There are concerns that this trial will only cause further delays, and will be costly,

2.14 Implement an extensive bus priority scheme		Develop a CBD bus priority scheme and establish transit lanes		PTIIP Sydney CBD bus priority scheme	Extension of transit lane on Victoria Road in progress. Bus priority works completed in 98/99 along Warringah Freeway/Falcon St, Crows Nest. Annual package to give priority to buses and other high occupancy vehicles as part of RTA's Road-Based Public Transport Priority Program.	In May 2002 the NSW govt announced $45M funding over 3 years through RTA's Road-Based Public Transport Priority program to improve commuter bus access and encourage more use of public transport: - RTA working with STA to support their Better Buses services strategies in Sydney and Newcastle. - Bus priority lanes introduced in both directions for Parramatta Road from Balmain Road in Leichhardt, to Broadway. - Investigating a new bus station on the Warringah Expressway approach to the Harbour Bridge. - All bus lanes (excluding M2 Motorway bus lanes) have been coloured red to improve visibility and reduce illegal usage. - Development of the Public Transport Information and Priority System (PTIPS) for traffic signal priority for buses with a trial underway on STA's Route 400 services (Bondi Junction to Burwood). - Advertising undertaken to increase driver awareness of bus lanes. http://www.rta.nsw.gov.au/trafficinformation/buses/ The 75km network of bus lanes currently includes: - Parramatta Road from Leichhardt to Broadway - Warringah Freeway, North Sydney - Military Road, Neutral Bay - Oxford Street, Darlinghurst - Moore Park - M2 Motorway - Sunnyholt Road, Blacktown - Holker Street, Homebush Bay. - Elizabeth, George and York Streets, Sydney - Burnt Bridge Creek Deviation & Manly Road, Balgowlah http://www.rta.nsw.gov.au/trafficinformation/buses/buslanes.html

2.15 Improve services to the Eastern Suburbs		Implement bus priority plan		Eastern Distributor bus priority plan	Package of works for improved public transport associated with the Eastern Distributor including bus priority plan completed July 2000. Moore Park Bus Station in Operation 1999. In July 2001 a $9 million bus and rail interchange was opened at Bondi Junction railway station. 50,000 bus passengers and 42,000 rail patrons use the terminal each weekday. Each bus arrives at a separate air-conditioned area where sliding doors, triggered by a transponder on the bus, allow passengers access.	Bondi Junction bus and rail interchange completed and working effectively.

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
2.16 Upgrade the Warringah Peninsula bus system	RTA	Develop a strategy to upgrade the existing bus system on the Warringah Peninsula	5yr period		Trial bus passenger information system, to display advice of bus arrival times at key locations, initially between Manly Vale and Mona Vale commissioned Nov 99. Completed works include bus bays on Spit Road. Warringah 'Park and Ride' pilot trail at Mona Vale, Collary and Newport has resulted in increased patronage and services. To be assessed by Shore Regional Organisation of Councils.	'Park and Rides' running successfully.
A.5 Improve transport management		Make public transport more attractive to consumers				
2.17 Better integrated ticketing, especially in GWS	CityRail State Transit DoT	Improve integrated ticketing		Bus Plus	DoT 2000 Annual Report states only that they are overseeing development and implementation of an integrated ticketing system to provide a single smartcard based fare system for public transport in the greater Sydney area. TEC wrote to DoT 7/2/01 seeking information on progress of implementing integrated ticketing system, investigations into making integrated ticketing available on a casual basis, results of Bus Plus" trial and other ticketing initiatives. Reply dated 20/3/01 provided no information. Reply via EPA 14/7/01 states that integrated ticketing across the public transport network planned to be phased in over 2003 and 2004. No details of proposed system provided. Need to improve equity in ticket prices between Western and Inner Sydney. Private buses should be subsidised at the same rate as Government buses. Private buses currently subsidised only for school transport. Pensioner concessions for government buses should be extended to private buses.	As mentioned above in 2.5, The Unsworth *Review of Bus Services in NSW*, helps to integrate the bus system in the GMR. Implementation is due to begin in Jan 2005. The Review removes the current pricing inequity by raising public bus fares over a 5 year period to match private bus company fares. Pensioner Excursion Tickets will be rise from $1.10 to $2.50, but will be valid on a wider range of services including private buses and the outer boundaries of the CityRail network. Introduction of a Smartcard to most of Sydney's transport systems is planned for 2005, with system to be fully operational by 2006. This will integrate ticketing on rail, light rail, monorail, private and public buses and ferries. The system will operate in the Sydney, Hunter and Illawarra regions, including Lithgow and Goulburn. The Smartcard system was to be implemented in 2002, but was delayed by court action by Cubic, the smartcard company currently running the NSW ticketing system. Court action was resolved in favour of Integrated Transit Solutions (ITS) - a joint venture between smartcard manufacturer ERG and Motorola – for a 10 year contract worth $320 million. http://www.zdnet.com.au/news/business/0,39023166,20272246,00.htm

2.18 Improve transport information services	Public Transport Authority	Establish a comprehensive centralised phone information system covering all public transport modes, all providers & all Sydney regions			Service commenced 28/11/99. Service includes a call centre and internet site for all public transport services, including private bus operators, within the CityRail network (North to Scone and Port Stephens, west to Bathurst and South to Nowra). There are problems with the website which is difficult to use. As of March 2001 it is not expected that these problems will be fixed for six months. *Public Transport Directory* launched Nov 98, with route information on every bus, train, light rail and ferry service operating in Sydney. Information 3 years old but no funding from Treasury for new edition.	The *Public Transport Directory* only published once, due to lack of funding. The *Transport Infoline* (phone 131 500) or website http://www.131500.com.au/ is informative and useful.

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
2.19 Develop a metropolitan parking policy	Local governme nt & other agencies	Produce a comprehensive parking policy			Little progress since launch of strategy. While RTA has made some progress in the review of preferential parking schemes, there has been little progress on an overall metropolitan parking strategy. Budgetary constraints provide little incentive for councils to adopt a coordinated approach, so emphasis tends to be on servicing needs of local residents. Short term time restraints are being used in preference to increasing pricing of parking in many residential locations. Parking Space Levy Amendment Act 2000 extended to $400 per space Parking Space Levy for CBD and North Sydney to Chatswood, St Leonards, Parramatta, and Bondi Junction. Levy designed to increase the cost of parking in areas well serviced by public transport and make private vehicle use less attractive. Exemptions for retail shops, etc weaken effectiveness, however. CBD levee increased to $800 per space. Parramatta Council endorsed draft plan to install parking meters in city centre 19/3/01.	Still no overall strategy. From 1 July 2004, the Parking Space Levy has increased for both categories: - Category 1: Owners of non-residential parking spaces in Sydney, North Sydney and Milsons Point business districts Annual levy of $860 for each parking space that is not exempt. - Category 2: Owners of non-residential parking spaces in Bondi Junction, Chatswood, Parramatta and St Leonards Annual levy of $430 for each parking space that is not exempt. Exemptions for residents, disabled drivers, bicycles, motorcycles, charitable organisations etc. However, exemption still applies for retail shops in business districts, which weakens the effectiveness of the levy. Levy collected by Office of State Revenue to finance public transport infrastructure. http://www.osr.nsw.gov.au/portal/page?_pageid=33,63594&_dad=portal&_schema=OSRPTLT
2.20 Promote teleworking in government and the business sector	RTA NRMA clean air 2000 taskforce	Investigate options for the implementation of teleworking			RTA conducted telecentre trial at West Gosford in 1998/99. Following success of trial, West Gosford Telecentre became on-going operation. Penrith Telecentre opened Sept 2000 and accommodated RTA and ORTA staff during Olympics. Will be monitored for 12 months to evaluate effectiveness. Telecentre for NSW public servants also established in Wollongong. RTA has produced two editions of *How to set up a Teleworking Program*. Also available on internet. ABS figures show 6% of Australians teleworked regularly prior to Olympics. This increased to 10% in Sydney for the two weeks of Olympic competition NRMA Clean Air 2000 Taskforce defunct. 1993/94 RTA Teleworking pilot project monitored travel	Telecentres at West Gosford and Penrith continue. RTA staff are also supported in teleworking from home or at telecentres. An ongoing teleworking survey is conducted on the RTA website to collect data about the link between teleworking and vehicle kilometres saved. Responses provide feedback for improving service and information to customers. http://www.rta.nsw.gov.au/cgi-bin/index.cgi?action=teleworking.form

					behaviour of staff and other household members. Total number of trips by teleworkers on teleworking days by all transport modes fell 53%. Number of trips to work locations fell 86%. Work related trips fell 61% and number of trips for shopping fell 37%. Average number of car trips fell 25% (37% on teleworking days). Number of trips by public transport fell 93% Average total daily travel distances fell 79%, duration fell 75% and average trip length fell 55% for teleworkers on teleworking days. No significant change in travel distances and duration for other household members	

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
A.6 Implement regional transport planning						
2.21 Develop a settlement strategy for the Central Coast	DUAP Local councils	Develop a settlement strategy for the Central Coast integrating land use and transport planning			*Shaping the Central Coast* released by DUAP in May 2000. Strategy proposes increased reliance on medium density in established centres, particularly in areas with good access to public transport.	Planning for Central Coast to be incorporated in the *Metropolitan Strategy* As part of development of the *Metropolitan Strategy*, DIPNR, STA and the Australian Greenhouse Office funded a TravelSmart Pilot Project for Sydney and the Central Coast from July to October 2004. Households in Ermington and Woy Woy were contacted during the pilot and offered personalised public transport, walking or bike journey plans, and information on local activities and services such as car pooling to reduce reliance on private cars. The Pilot will be evaluated and results will be published in 2005.
2.22 Develop a long–term strategy for improving transport in the Illawarra	Illawarra sub-committee of the metropolitan strategy committee	Evaluate options for improving transport in the region			Illawarra Subcommittee of the Metropolitan Strategy Committee launched *Illawarra's Action for Transport* March 99. Illawarra Regional Organisation of Councils has employed a Regional Transport Coordination and Development Officer based in Shoalhaven City Council and RTA to assist implementation. The plan contains 6 priority goals with 26 strategies and 130 actions. Goals and strategies aimed at increasing public transport use for journeys to work, school, shops, recreational destinations and through journeys as well as improving freight transport. Plan does not provide figures on funding of actions or timeframes. Performance indicators not completed for all strategies. Some strategies include road widening. A long-term target of public transport mode split for journey to work to be included in *Shaping Illawarra*, regional planning strategy that is currently being prepared.	A Regional Strategy for the Illawarra is a priority and is to be locally developed under the *Metropolitan Strategy*

2.23 Prepare a Newcastle-Sydney corridor study	Dot RTA DUAP	Develop an integrated package of land use and employment measures			Sinclair Knight Merz Pty Ltd engaged to conduct study and develop a Central Coast Transport Action Plan. Draft plan to be released in 2001. Feasibility study for stage 1 of the Sydney - Newcastle High Speed Rail Link Upgrade has been completed. Stage 1 to Warnervale due to be completed 2007. Stage 2 to Newcastle due to be completed 2010.	Regional Strategies for the Lower Hunter and Central Coast are priorities to be locally developed under the *Metropolitan Strategy*
2.24 Prepare a Penrith to Orange corridor integrated road and rail strategy	Penrith to Orange transport corridor taskforce				Strategy mostly focussed on road upgrading. *Action for Transport* includes commitments for funding of road widening and overtaking lanes. Rail Access Corporation to improve reliability and on-time running of rail services across the Blue Mountains through track maintenance and enhancements.	

Review	Key Agencies	Stated goals	Timelines/$ $$ (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
Strategy B Provide for cycling and walking						
2.25 Improve government support for safer and more convenient bicycle use	RTA Local councils DoT SRA NSW police	Threefold increase in bicycle use 5% reduction in accidents	By 2001 $5.5 m for cycleways 3m within Sydney $8m allocated for programs $12m/yr for design and maintenance of existing & new roads	Cycleways program, Bicycle facilities program, Bicycle user support program Bikeplan 2010	BikePlan 2010 lacks targets for increasing cycling. Some major cycleways of the Sydney Bike Network are due to be completed in 2001 such as the Anzac Bridge Cycleway, Parramatta-Liverpool Trail, Concord to CBD Cycleway and development of the Homebush Bay-Fairfield Cycleway. Local Government cycleways are being funded on a 50/50 basis and cycleways facilities are bring included as part of road constructions such as Bexley to Mascot, Elizabeth drive, mimosa Road and the Parramatta-Liverpool Transitway. Cycleway maps for Sydney, Illawarra, Central Coast and Newcastle regions. Work done to increase cycleways is undermined by continuing loss of cycling access and safety through roadworks unsympathetic to cycling. Requirements are needed that roadwork designs are to be sympathetic to cycling and increase opportunities for safe cycling. Transport Data Centre figures show that bicycle travel on weekdays decreased between 1991 and 1997 from just under 100,000 trips to 90,000. Weekend trips increased from just over 80,000 to 93,000 in same period. Bicycles account for 0.5% of all trips on weekdays and 0.6% on weekends. 0.7% of trips to work are by bicycle. RTA has recently initiated a bicycle planning and implementation survey of all NSW councils, including surveying the Mayor, General Manager and Transport Planner. The survey, coordinated by the Australian Road Research Board (ARRB) will provide a clear picture of councils' achievement's and plans.	Action for Bikes (BikePlan 2010) still being implemented by RTA, with some delays in meeting targets recently. http://www.rta.nsw.gov.au/trafficinformation/downloads/bp2010.pdf Plans for the Sydney Bike Network have been delayed again, due to the merging of South Sydney council with City of Sydney. Until then, South Sydney council had secured Federal funding through the 'Roads to Recovery' program and was effective at implementing and maintaining cycling infrastructure. In Oct 2004, City of Sydney announced the Bike Network plan is to be re-drafted by an external consultant, for release in 2005. There are some concerns this will lead to further delays on a plan that is already long overdue, but also hope it may mean a significant improvement on a plan previously released by City of Sydney. http://www.smh.com.au/articles/2004/10/14/1097607373178.html?from=storylhs Major road projects continue without provisions for cyclists. Still waiting on construction of cycleways promised for M5 East motorway and Cross-city Tunnel. Lane Cove tunnel proceeding without cycleway. Concern that plans to add an another lane to the Anzac Bridge will compromise the existing cycleway. Dual travel-modes not encouraged – eg. cyclists still required to purchase a half price ticket for their bike in peak hour. This includes compact folding bikes. There is no space for bikes on the new Millenium trains, and Countrylink has a limit of 3 bikes per train. The 2 year position of Cycle Strategist at DIPNR (jointly funded by RTA and DIPNR) was very effective at engaging with councils and in the development of Bicycle Guidelines. However, the position has recently lapsed and no move has been made to renew the position.

						Research published in the *Health Promotion Journal of Australia* in 2004 found walking and cycling commuters "had significantly lower levels of exposure to benzene compared with car commuters and significantly lower levels of NO_2 than bus commuters." (Chertok et al) It is important that findings such as these are used by the government to address misconceptions about air pollutant exposure. There is a perception that travelling in an air-conditioned car means less exposure to pollutants, when in fact walking and cycling have been shown to cause the least exposure. Other research in the *Health Promotion Journal of Australia* in Dec 2003 indicates a 53% increase in the proportion of Sydney resident commuters cycling for all or part of their journey to work. There was also an 18% rise in JTW by bike in the greater Sydney basin (incorporating Newcastle, Blue Mountains and Illawarra). The research compares 1996 and 2001 journey-to-work data from the ABS. No recent cycling figures are available from the Transport and Population Data Centre. *Cycling in Sydney*, dated March 2003, cites data from 1991-2000. In the *2002 Household Travel Survey*, cycling was not listed as a transport mode in its own right, but was delegated to the 'other modes' category. 10.3% of trips were made by 'other' transport modes in 2001-02, a drop from 13.3% in 2000-01. While these figures do not include trips by 'walking only', it cannot be seen as an accurate representation of cycling figures either. http://www.planning.nsw.gov.au/tpdc/pdfs/executive_summary.pdf

2.26 Facilitate walking as a mode of transport	Shaping up Streets & Roads Taskforce Local councils RTA	Develop a pedestrian policy Recognising walking as a legitimate form of transport	Pedestrian strategy to be released 1999		Pedestrian strategy not completed. Expected to be released late 2001. Pedestrian Access & Mobility Plans trialed with local councils on a dollar for dollar basis. PAMPS undertaken at North Sydney, Burwood, Marrickville & Bankstown. Twenty six further plans being developed including Shoalhaven, Coffs Harbour and Hastings Councils. Continued implementation of kerb ramps & audio tactile push buttons Continued implementation of School zones Extra 18 supervisor sites for the School Crossing Supervisor Scheme. RTA local urban amenity fund for pedestrian refuges etc cut prior to Olympics. Little attention given to walking in *Action for Transport 2010*. Leichhardt Council trialing "walking bus" program from March 01. Groups of children walking to and from school along set route are supervised. Aim of program is to reduce short trips by car to take children to school. Council audits routes to identify any safety improvements needed.	Both *Road Safety 2010* and the *Pedestrian Safety Action Plan for 2002-2004* prepared by RTA, require whole-of-government implementation. Both have strong objectives and activities for improving pedestrian safety, but neither include dates for meeting targets. http://www.rta.nsw.gov.au/trafficinformation/downloads/pedestriansafety.pdf There are concerns that pedestrian crossings are being widely replaced with pedestrian refuges. This increases confusion and risk for pedestrians as there is no established norm for their use, and pedestrians no longer have the right of way where they once did. Refuges are often used in place of crossings to speed up traffic flow, especially at roundabouts. This is a big safety risk, particularly for elderly pedestrians and shows that vehicles still take precedence over pedestrian safety. Leichhardt 'Walk to School' program: - Award-winning Forest Lodge pilot program completed. - Balmain Public School, the Montessori School, Fr John Therry Catholic School and the Annandale Cluster have since joined the program. http://leichhardt.socialchange.net.au/environment/09/
Review	**Key Agencies**	**Stated goals**	**Timelines/$ $$ (where stated)**	**Related plans/ strategies**	**TEC Review 2001**	**Change since 2001?**
Strategy C Change travel behaviour through education		Bring about a shift in community understanding of the health and environmental consequences of individual travel choices				
2.27 Continue to promote school and community education programs	NRMA Clean Air 2000 Taskforce Nature Conservation Council			Airwatch for schools City Savers resource kit Smogbusters Travel Smart Day	Airwatch kit for schools not available as of 1/3/01. Should be completed soon Public Transport Day held in 2000 Some government support for Smogbusters day in March 2001. Travel Smart Day held annually. Clean Air 2000 defunct.	SmogBusters is now defunct due to a withdrawal of Federal government funding

Objective 3. Make, cars, trucks and buses cleaner

"Objective: To reduce exhaust and evaporative emissions from new and in-service cars, trucks and busses".

TEC Action for Air Review table 3

Review	Key Agencies	Stated goals	Timelines/$$$ (where stated)	Related plans/ strategies		Change since 2001?
Actions						
Strategy A. Reduce car emissions						
3.1 Advocate tighter national emission standards for new cars	National working group reviewing Australian Design Rule (ADR) 37/01 EPA	Further reductions in CO, ROCs, NOx & greenhouse gases (GGs) Implementation of California Low Emission Vehicle Standards	New standards to come into effect from 2003, if agreed to nationally.		New standards not in place. Commonwealth began review of Australian design standards for new vehicles. NSW sought Australian standards similar to overseas standards. New standards as set by Commonwealth: Petrol vehicles 2003/04 Adopt Euro 2 standard 2005/06 Adopt Euro 3 standard. Final decision will mean that standards for petrol vehicles will come into effect up to seven years behind the adoption of those standards in Europe. New standards and cleaner fuels (for petrol and diesel vehicles) are expected to reduce emissions of hydrocarbons by 26-27%, CO by 75- 77%, NO_x by 71% and PM_{10} between 2000 and 2020. Lead and sulfur emissions are forecast to fall by 93% and 84% respectively in the same period. Emissions of air toxics (eg benzene) are expected to fall by 50-70%. Fuel efficiency of Australian vehicle fleet at bottom of the list for OECD countries with national average fuel consumption of 8.9L/100km. According to NRMA there has been virtually no improvement in vehicle fuel efficiency over the past 7 years. Fuel efficiency of Australian made vehicles has improved only 7% since 1983.	Good progress has been made with the Commonwealth government's implementation of national emissions standards under the *Motor Vehicle Standards Act*: ADR 30/01 Smoke Emission Control for Diesel Vehicles Applied to all new diesel vehicles from 1 Jan 2002 and all models from 2003. ADR 79/00 Emission Control for Light Vehicles (3.5 tonnes or less) Implements the 'Euro 2' exhaust and evaporative emissions standards for light vehicles. Applied to all new diesel models from 1 Jan 2002 and all models from 2003. Applied to all new petrol, LPG and natural gas vehicles from 2003 and all vehicles from 2004. ADR 79/01 Emission Control for Light Vehicles (3.5 tonnes or less) Implements the 'Euro 3' and 'Euro 4' exhaust and evaporative emissions standards for light vehicles. Will apply 'Euro 4' standards to all new diesel models on 1 Jan 2006 and all models from 2007. Will apply the 'Euro 3' standard to all new petrol, LPG and natural gas vehicles from 2005 and all vehicles from 2006.

						http://www.dotars.gov.au/mve/new_adrs.htm However, the turnover of vehicles in Australia is traditionally slow, and has limited the realisation of benefits from cleaner vehicle technology. To encourage the sale and purchase of cleaner vehicles, the NSW government introduced the Cleaner Vehicles Action Plan in 2002, a five-point plan which includes: ***Clean Car Benchmarks*** Environmental performance standards for new light vehicles to identify the cleanest cars available – released in May 2003 ***Stamp duty as an environmental incentive*** New vehicles to be assessed on their environmental performance and pay stamp duty accordingly. However, this has not occurred. Greener NSW Government fleet program Government agencies to establish fleet improvement plans with targets for reductions in greenhouse gas emissions and fuel consumption. Voluntary clean fleet program Encourages voluntary maintenance programs and the purchase of cleaner vehicles for large fleets. ***Consumer Green Guide*** Development of a green vehicle guide, covering cars and light trucks. DOTARS provides information on purchasing cleaner vehicles with the *Green Vehicle Guide*. It rates the environmental performance of new vehicles sold in Australia, including comparisons of greenhouse and air pollution emissions. It is made available at http://www.greenvehicleguide.gov.au, as

						well as on the Dept of Environment and Conservation (NSW) website: http://www.epa.nsw.gov.au/air/gvgscores.htm With regard to cleaner fuels, the Commonwealth government enacted the *Fuel Quality Standards Act 2000* and established environmental standards for petrol and diesel (see also 3.5 below). Significant emission reductions are expected as a result. In Sydney from 2002 to 2020, emissions of VOCs from motor vehicles are expected to decrease by 46%, NOx by 67%, CO by 75% and PM_{10} by 40%. http://www.ephc.gov.au/pdf/Air_Quality_NEPM/Monitoring2002/nsw_2002_air_nepm_report.pdf
3.2 Augment the smoky vehicle enforcement program	EPA RTA	Identify smoky vehicles as a priority target for Inspection Maintenance Program (I/M)		Smoky Vehicle Enforcement Program	Over 1000 reports from the public on smoky vehicles received by EPA pollution line each month. EPA issued 2,916 warning letters to private vehicle owners and 2,838 infringement notices to private and commercial vehicle owners in1998-99. Drop in complaints resulted in 20% decrease in warning letters issued during 1998-99. EPA survey work confirms a drop in number of smoky vehicles. RTA vehicle inspectors trained in 1997-98 to observe and report smoky vehicles.	In 2001–02, the EPA received 7,171 notifications about smoky vehicles from the public and over 2,050 penalty infringement notices (PINs) and 2,940 warning letters were issued. Therefore the number of complaints has roughly halved compared to 1998-99, yet it is not possible to determine whether the number of smoky vehicles actually declined, or reporting itself has declined (or both). Diesel vehicles made up a large proportion of smoky vehicles reported in 2001-02, with 1,896 of the infringement notices issued to diesel vehicle owners. http://www.environment.nsw.gov.au/soe/soe2003/chapter2/print_chp_2.4.htm http://www.ephc.gov.au/pdf/Air_Quality_NEPM/Monitoring2002/nsw_2002_air_nepm_report.pdf
Review	**Key Agencies**	**Stated goals**	**Timelines/$$$ (where stated)**	**Related plans/strategies**		**Change since 2001?**

3.3 Implement an inspection and maintenance program for in-service vehicles	RTA	Implement I/M program to reduce emissions from high polluting vehicles	Begin 1998 Phase 1 (target high polluting vehicles eg modified and smoky vehicles in Sydney region by expanding 2 RTA testing facilities and random inspections) to begin mid-1998 Phase 2 (testing of passenger and light commercial vehicles in Sydney region through network of 20 privately operated testing facilities) during 2000 Phase 3 (extend testing program to lower Hunter and Wollongong) in 2004		Phase 1 (target high polluting vehicles eg modified and smoky vehicles in Sydney region by expanding 2 RTA testing facilities and random inspections) launched in 1998 with facilities at Botany and Penrith. Phase 2 well behind schedule. No sites selected or tenders called for inspection stations. Only a few mobile testing stations have been introduced. Failure to undertake program allows 371 tonnes of pollution to enter Sydney's air every day.	Phase 2 never happened.

3.4 Reduce petrol volatility in summer		Lower emissions from vehicles, lawn mowers, fuel storage facilities & service stations by reducing Reid Vapour Pressure (RVP)	Between 15th November & 15th March from 1997-98 to 2003 Reduce volatility to 70 kPa 98-99, 67 kPa 99-00 and 62kPa 00-01	Phased reductions in RVP Annual review program Memo of Understanding (MoU) with oil industry	Reductions in volatility reduced hydrocarbon emissions by 35 tonnes per day in 1998-99 (due to reduction in RVP from 75.5 kPa to 67.5 kPa) and a further 7 tonnes per day in 1999-00. 98% of Petrol sold in GMR complying with agreed lower volatility limits. Unannounced audits of petrol stations showed all stations examined complied with requirements for fuel vapour recovery.	During the summers of 2002-03, the EPA analysed petrol sampled at Sydney service stations. Of the samples taken in Dec 2002, 60% met the target agreed in the previous year's MoU. In February 2003, over 70% of samples met that limit. http://www.environment.nsw.gov.au/resources/ar03review1.pdf However, oil industry support for the introduction of legislation meant the MoU was replaced in June 2004 by the *Protection of the Environment Operations (Clean Air) Amendment Regulation 2004*, aimed at reducing petrol volatility over the summer period (15th November to 15th March). The regulation requires specified petrol suppliers to report on, and keep records of, the benzene content of petrol supplied in NSW from 1 July 2004. It also requires these petrol suppliers to comply with limits on the volatility of petrol supplied in the Sydney, Lower Hunter and Illawarra regions during the summer period, and to keep records and make reports to the EPA regarding petrol volatility.

						Limits on volatility are: ***Prescribed blended petrol*** - 72 kPa for petrol supplied in summer 2004; or - 71 kPa for petrol supplied in any subsequent summer ***Any other petrol*** - 65 kPa for petrol supplied in summer 2004; or - 64 kPa for petrol supplied in any subsequent summer http://www.environment.nsw.gov.au/legal/whatsnew.htm These reductions in volatility are an important improvement yet are behind the scheduled outlined in *Action for Air* – ie to reduce volatility to 70 kPa by 1998-99, 67 kPa in 1999-00 and 62kPa in 2000-01
Review	**Key Agencies**	**Stated goals**	**Timelines/$$$ (where stated)**	**Related plans/strategies**		**Change since 2001?**
3.5 Investigate merits of reducing sulfur content in petrol	EPA/ Oil Industry Technical Committee	Evaluate environmental benefits compared to economic impacts & feasibility for Australian Oil refineries			Mechanisms for implementation of new fuel standards being established at the national level under the Fuel Quality Standards Act 2000 (commences Dec 01). Adoption of Euro 2,3 and 4 standards will establish a diesel standard for road transport fuel with a sulfur content limit of 500ppm by end 2002 and 50ppm by 2006. Petrol standards equivalent to Euro 3 due 2005 and will limit sulfur in petrol to 150ppm	The *Fuel Quality Standards Act 2000* commenced in December 2001, with the first standards made under the Act in force on 1 Jan 2002. The standards regulate the quality of petrol and diesel fuels sold in Australia to control vehicle emissions. Under the Act, the Fuel Standard (Diesel) Determination 2001 commenced on 1 Jan 2002 and limits sulfur content to: 500 mg/kg by 31 Dec 2002 50 mg/kg by 1 Jan 2006 10 mg/kg by 1 Jan 2009 http://www.deh.gov.au/atmosphere/cleaner-fuels/petrol-diesel/index.html

Strategy B. Reduce diesel vehicle emissions		Reduce emissions from diesel vehicles especially small commercial vehicles and vans				
3.6 Advocate tighter national emission standards for heavy-duty diesel vehicles	National Environment Protection Council (NEPC) EPA/ Oil Industry Technical Committee	Support national review through Australian Design Rule (ADR) 70 of the Euro II standards EPA/Oil Industry Technical Committee to investigate feasibility, cost and effectiveness of low-sulphur diesel fuel	Euro 2 standards to be phased in from 2000, if agreed to nationally.		Euro 2 standards not yet in place. Commonwealth began review of Australian design standards for new vehicles. NSW sought Australian standards similar to overseas standards. New diesel vehicle standards as set by Commonwealth: 2002/3 Adoption of Euro 2 for light duty diesels and Euro 3 for medium and heavy duty diesels. 2006/07 Euro 4 for all diesels. Final decision will mean that standards for Diesel vehicles will be introduced one to two years after adoption of those standards in Europe. New standards and cleaner fuels (for petrol and diesel vehicles) are expected to reduce emissions of hydrocarbons by 26-27%, CO by 75- 77%, NO_x by 71% and PM_{10} between 2000 and 2020. Lead and sulfur emissions are forecast to fall by 93% and 84% respectively in the same period. Emissions of air toxics are expected to fall by 50-70%. Prior to being supplied to Australian market new diesel vehicles are certified as complying with Australian Design Rule (ADR) 70/00. Tests used to determine emission performance in accordance with ADR 70/00 are unsuitable for measuring performance in real world conditions. Australia is lagging behind international standards in regulating heavy-duty diesel vehicles. Current standards are equivalent to 1991 USA standards, 1992 European Standards and 1993 Japanese standards. Slow turnover of diesel fleet in Australia means that there will be a considerable time lag before new standards deliver air quality benefits	The National Environment Protection Council (NEPC) introduced the *National Environment Protection (Diesel Vehicle Emissions) Measure* on 29 June 2001. The Measure aims to manage emissions from in-service diesel vehicles and provides guidance for jurisdictions in developing programs for inspection and maintenance, retrofits and the problems of smoky vehicles. Diesel vehicle emission standards are also addressed in ADR 30/01 - Smoke Emission Control for Diesel Vehicles, which applied to all new diesel vehicles from 1 Jan 2002 and all models from 2003. However, analysis indicates diesel vehicles are increasing as a proportion of the total Australian vehicle fleet, with older vehicles (up to 16years) significantly contributing to total VKT in metropolitan areas. In March 2003, diesel vehicles accounted for 8.86% of the fleet and this is expected to increase to 15% by 2015. Over this time diesel vehicle travel in metropolitan areas is also expected to increase by 146%. http://www.ephc.gov.au/nepms/diesel/diesel_intro.html

Review	Key Agencies	Stated goals	Timelines/$$$ (where stated)	Related plans/strategies		Change since 2001?
3.7 Develop a national diesel environment protection measure	NEPC	Develop a comprehen-sive national diesel measure			NEPC decided in 19/9/00 to initiate drafting of National Environment Protection Measure (NEPM) for diesel vehicle emissions. Discussion paper scope and content of proposed measure released November 2000. Proposed measure to include In-service Standards and In-service Strategies to meet standards. May also include I/M program NEPC decided in Dec 2000 to exclude fuel standards from the proposed NEPM. This will reduce effectiveness of NEPM as changes to composition of diesel fuel are needed to ensure effectiveness of control technology. NEPC agreed to make measure 29 June 2001. Diesel vehicles are making an increasing contribution to overall vehicle emissions. Diesel vehicles comprised 8.3% of total national vehicle fleet in 1995. This is predicted to grow to at least 15% by 2015. Distance travelled by the Aust diesel fleet expected to increase by at least 134% nationally and by at least 146% in metropolitan areas by 2015 when it will constitute 22% of the distance travelled by all vehicles. Older Vehicles up to 16 years of age continue to contribute significantly to the total distance travelled in metropolitan areas. Diesel vehicles make a disproportionate contribution to emissions of fine particles and NOx. In Sydney diesels produce up to 80% of Total Suspended Particulates (TSP) emissions but account for only 15% of VKT.	NEPC introduced the *National Environment Protection (Diesel Vehicle Emissions) Measure* on 29 June 2001. Still in place as described above.
Review	**Key Agencies**	**Stated goals**	**Timelines/$$$ (where stated)**	**Related plans/strategies**		**Change since 2001?**
3.8 Design an inspection and maintenance program for diesels		Develop an I/M program for diesel vehicles		Smoky Vehicle Enforcemen t Program	No program in place. EPA advises that NEPC (including NSW) has conducted a research program relating to aspects of in-service diesel emissions over the last two years as part of development of Diesel Vehicles Emission NEPM. Test method identified and trialed to determine cost benefit of repairs to high polluting vehicles. National Road Transport Commission developing in-service diesel standard to which NEPM relates. Australian Transport Council to make decision on standards for in-service diesels by mid August.	In 2002 the RTA developed an *Audited Maintenance Program* for diesel vehicles. The DT80 test was developed to test opacity, particulate matter and oxides of nitrogen in diesel emissions. RTA tested emissions from 2,000 trucks and buses in a voluntary program with private and government fleets. Vehicles with the worst performance were repaired and retested showing an average exhaust emission reduction of 25%. This identified maintenance practices for reducing emissions, showing regular vehicle maintenance to be the most cost-effective. Maintenance guidelines were developed and are now

					State in-service management initiatives to be reviewed once NEPM is in place.	being tested on volunteer fleets. The RTA also worked with TAFE NSW to develop a diesel emissions training course, to be made available electronically during 2004. http://www.rta.nsw.gov.au/environment/airquality/vehicleemissions/reducingdieselemissions.html
3.9 Ensure cutting edge emission technology for the state bus fleet	STA	Ensure the State bus fleet is as clean as possible	Phase 1 from 1997 Phase 2 over the next 5 yrs	Phase 1. New diesel buses meet the Euro II standards Phase 2. Purchase an additional 300 natural-gas-fuelled buses	104 compressed natural gas (CNG) buses in STA in early 2000. 150 more added prior to Olympics Diesel buses are no longer purchased Replacing diesel buses with CNG buses reduces emissions of particulates and other smog precursors as well as CO_2. CNG buses are also quieter and cheaper to operate.	**In June 2004 NSW State Transit ended its commitment to purchase CNG buses, The STA will return to purchasing diesel engines as they are now marginally cheaper to run due to federal changes in fuel excise.** **This is a significant step backwards which - in the first stage of its implementation - is likely to cost the community at least $4.4 million in health costs from particulate matter alone, with oxides of nitrogen costing an additional $1.3 million.**
Review	**Key Agencies**	**Stated goals**	**Timelines/$$$ (where stated)**	**Related plans/strategies**		**Change since 2001?**
3.10 Support research to identify effective emission control strategies	EPA RTA Sydney Buses Local councils Fleet owners	Reduce emissions from existing buses & other heavy-duty diesel vehicles			EPA, RTA and STA contributed funding and resources to investigate options to reduce emissions from buses and heavy-duty vehicles. Study considered engine servicing, catalytic converters, Euro 2 design, low sulfur diesel, and CNG. Report released June 1999 and available from EPA library.	No information available

Strategy C. Promote cleaner fuels						
3.11 Participate in western Sydney natural gas vehicle project	Western Sydney Natural Gas Vehicle Taskforce consisting of: Liverpool Council NRMA Clean Air 2000 Planet Ark Australian Natural Gas Vehicles Council	Promote the benefits of a regional compressed natural gas infrastructure			Liverpool City Council first Australian fleet to commit to 100% use of CNG. Currently has 27 CNG cars and 2 CNG trucks. Will convert to 100% CNG by 2002. Also requires CNG to be used as fuel by major contractors eg garbage collection. RTA contributed total of $75,000 over 3 years to assist Liverpool Council. Also provided project manager for the Western Sydney	Liverpool Council is committed to implementing CNG in its fleet but has run into difficulties. A stakeholder group was formed to analyse and overcome the barriers faced in the use of CNG from 1998 to 2003. Stakeholders include: Liverpool, Blacktown and Waverley Councils, AGL, a consultant, 2 compression equipment suppliers, STA and RTA. Barriers to CNG use were identified as: - Difficulty in getting CNG on-site and lack of public

	WSROC University of Western Sydney Australian Greenhouse Office				Natural Gas Vehicle Project. Western Sydney Natural Gas Vehicle Taskforce working to build network of CNG vehicle in Western Sydney. Seeking assistance of AGO to establish infrastructure. CNG service station opened in Moorebank in 1998. Further refuelling stations being developed at Arndell Park and Granville. It is proposed to establish new station in Blacktown. WSROC has established Local Government CNG group to expand CNG trial beyond Liverpool Council. Blacktown and Parramatta Councils have begun trial. Blacktown Council acquiring 9 CNG garbage trucks. Main barrier to increased CNG vehicle use is lack of supporting infrastructure i.e. refuelling. However there is resistance to developing infrastructure without greater commitment to expand CNG fleets. Government has role in promoting infrastructure.	refuelling infrastructure. - Lack of public refuelling infrastructure means vehicles have no re-sale value at the end of their life in council. - Lack of interest from vehicle manufacturers. - Only 16 trucks currently in Australia – of which 6 are undergoing controlled trials with the manufacturer (Isuzu) - Car manufactures do not show any interest in CNG here in Australia - Use of CNG in trucks is feasible with dedicated engines, but duel fuel cars are overloaded when carrying 4 passengers and fitted with a second fuel tank so are not practical. - Limited fuel excise and government grants are crucial to getting CNG and the appropriate infrastructure off the ground. Progress has been made in trying to overcome these barriers, with the aim to convert the fleet by 2010 wherever possible. Manufacturers are now interested in using the methodology developed by the stakeholder group. Plans are underway for importing/delivering more vehicles for trial in Gosford and Waverley Council.
Review	**Key Agencies**	**Stated goals**	**Timelines/$$$ (where stated)**	**Related plans/strategies**		**Change since 2001?**
3.12 Develop a cleaner transport fuels and technology strategy	Premier's Dept AGL Australian Natural Gas Vehicles Council NRMA CSIRO	Develop a strategic framework for the adoption of cleaner fuels & technologies	By July 1998	Southern Sydney Regional Organisation of Councils Greenhouse Strategy	Government response on cleaner fuels is still being developed. No information available for public release.	No information on a strategy is available. However, the EPA provided Local Air Improvement Program grants to the value of $190,000 to Camden and Newcastle councils to trial biodiesel in heavy vehicles. http://www.environment.nsw.gov.au/resources/ar03review1.pdf Nevertheless, as discussed above, other leadership opportunities for the government to support cleaner fuel technology and infrastructure development (eg refuelling) have been missed. The return to diesel buses for the Sydney bus fleet, for example, means a lost opportunity to continue investing in CNG technology.

Objective 4. Promote cleaner business
"Objective: To improve the regulation of industrial emissions that contribute to air pollution".
TEC Action for Air Review table 4

Review	Key Agencies	Stated goals	Timelines/$$$ (where stated)	Related plans/ strategies		Change since 2001?
Actions						
Strategy A. Reduce industrial emissions		Control of NOx emissions from industry				
4.1 Implement revised clean air regulation 1997	National Health and Medical Research Council EPA	Implement performance based (load based (LBL)) licensing system	During 1998	Trading schemes	Applies to emitters of scheduled pollutants. Same regulations throughout all regions of NSW. Self-monitoring by industry plus EPA auditors.	
4.2 Implement load-based licensing (LBL)	EPA	LBL system	Mid-1998 begins phased implementation		Came into effect July 1999. Licence specific limit; fee is deterrent, cannot increase load through extra payment Assessment from July 1999 to June 2000. Fees commence middle of 2001 Fees in two parts a) Administration and is dependent on size of operation b) load calculation protocol Program of offsets; fee can be reduced through reuse of emissions or improved practices.	

Review	Key Agencies	Stated goals	Timelines/SSS (where stated)	Related plans/ strategies		Change since 2001?
4.3 Establish a cleaner industry unit in the EPA	EPA	Industry to put in place environmental management systems		State Cleaner Production Strategy	Cleaner Industry Unit established 1997, consolidated 1998. Unit produced State Cleaner Production Strategy called *Future with Cleaner Production*. Guide for industry on how to adopt cleaner production. Between November 1998 and March 2001, partnership projects with industry and local councils have generated a series of 13 information packages for small business. CIU facilitated project with Printing Industries Association of Australia to research products containing reduced or no ROCs. Also worked with Furnishing Industry Association of Australia to reduce solvent use. Government has recently announced $5M extra funding to Cleaner Production Program to strengthen compliance programs, Promote waste and pollution reduction, fund research and provide grants to individual companies.	The Cleaner Production Industry Partnership Program provided $5 million for businesses and industry associations to develop cleaner production initiatives which: - minimise waste and pollution; and - minimise the use of raw materials, water and energy. http://www.environment.nsw.gov.au/cleaner_production/ippintro.htm
4.4 Implement the protection of the environment operations legislation	EPA Local councils	Protection of the Environment Operations Act 1997	July 1998		Act came into effect 1 July 1999. Prosecutions to be listed in EPA annual report. EPA conducted survey of 177 Councils and 200 Industry licenses to determine effectiveness of communicating requirements to stakeholders. 40% of Councils and 60% of licenses responded. Industry and Councils generally understand new requirements.	*Protection of the Environment Operations Act 1997* still in effect
4.5 Develop a framework to control NOx emissions in the GMR	EPA	Progressively reduce emissions to achieve a long-term cap at 1998 licensing levels	Begins 1999-2000 financial year	Capping total NOx emissions and setting up a trading scheme within a cap National Greenhouse Strategy	Assessing NOx levels & movement within the air-shed during 1998. Devise cap level for implementation in 2003. Reference group examining policy options for NOx trading. EPA still developing options. Public consultation scheduled for 2001	No further development
4.6 Enhance leak-detection and repair programs at petrochemical facilities	EPA	A program to reduce emissions of ROCs by improving leak-detection and repair.			Some progress. Pollution reductions Programs in EPA license conditions for Basell, Shell, Caltex and Qenos require them to report to EPA on mechanisms put in place to recapture fugitive emissions. EPA advise 10/4/01: Caltex currently assessing components (eg valves & flanges) and emissions to prioritise sources and a program for each leakage source. Shell has identified most sources of fugitive emissions within refinery and commenced studies to reduce	No information available

					them. Qenos has identified emissions and implemented specific programs. Since 1998, fugitive emissions from Botany Industrial Park were reduced by approx 11%, while production increased 7%.	
Review	**Key Agencies**	**Stated goals**	**Timelines/SSS (where stated)**	**Related plans/ strategies**		**Change since 2001?**
4.7 Negotiate reductions in ROCs emissions from major industry sources through licence conditions	EPA			Improved storage tank operations Improved waste water treatment Technical process modifications Improved transfer efficiency and use of waterborne coatings	EPA advise 10/4/01 that 78 industries identified, where programs may result in gains in ROC emissions reductions. EPA developed survey to assess industries' baseline performance and establish priorities. "Subsequent negotiations with individual premises may result in the introduction of pollution reduction programs to encourage cleaner product design". No figures of any negotiated reductions provided.	No information available
Strategy B. Develop cost-effective approaches for small business		Reduce emissions of ROC's in the most cost effective manner				
4.8 Implement staged code of practice for commercial printing premises	EPA Printing Assoc of Australia Australian Flexographic Technical Association of Local councils	Code of practice adopting low ROC's or ROC free coatings for premises emitting 35 t/yr of ROC's	Phase 1 begins 2000 Phase 2 begins 2003 Phase 3 Begins 2006	Small Business Solutions to Pollution Program Phase 1. Improved housekeeping measures Phase 2. Installation of incineration devices and some conversion to water based adhesives Phase 3. Installation of control equipment	Code of practice not developed. Printing Industry promoting VOC reduction scheme embodied in European Commission directive of 11 Mar1999 to apply nationally. National code being developed by Environment Australia. EPA considers EC model adequate in principle and is participating in the development of the national code of practice. Cleaner Industries Unit (CIU) of the EPA facilitated project with Printing Industries Assoc of Australia to research products containing reduced or no ROCs. Environmental guideline developed with *Reducing Solvent use in the Printing Industry* released in 1999.	No information on code of practice available. However, examples of the EPA's Small Business Solutions to Pollution Program funding included $18,500 to Focus Press for development and implementation of an Environmentl Management System (EMS) to address VOC emissions, water and energy usage and waste to landfill. http://www.environment.nsw.gov.au/cleaner_production/projectlist.htm

4.9 Improve housekeeping practices in auto repair shops and surface-coating premises	EPA Local council	Implement guidelines & information campaign to improve practices	In 1998	Small Business Solutions to Pollution Program	Small business solutions to pollution program has resulted in guidelines for individual business areas e.g. Auto repair, released in 1998. Available by phone or from the internet (pdf). Information campaign by peak industry bodies in each sector. No figures provided by EPA on likely reductions achieved so far.	Information on principles for minimising air pollution from spray painting and surface coating available from DEC website: http://www.environment.nsw.gov.au/mao/spraypaintingsurfacecoating.htm No figures on reductions available.
Review	**Key Agencies**	**Stated goals**	**Timelines/SSS (where stated)**	**Related plans/ strategies**		**Change since 2001?**
4.10 Install petrol vapour recovery units at rail-loading gantries		Install activated carbon vapour recovery unit on the Parramatta Rail Gantry	In 1998		Vapour recovery unit has been installed but no extension to other areas.	No information available.

Objective 5. Promote cleaner homes

"Objective: To maximise home energy efficiency and reduce emissions of fine particles and ROCs from domestic fuel consumption.

TEC Action for Air Review table 5

Review	Key Agencies	Stated goals	Timelines/SSS (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
Actions						
Strategy A. Reduce emissions from solid-fuel heaters	EPA	Reducing emissions from solid fuel heaters		Air pollution from solid fuel heaters		
5.1 Ensure compliance with the clean air regulations	EPA	Ensure new solid fuel heaters comply with emission standards			EPA not responsible for prosecution of home users, councils have power to serve notice. Amendments to the Clean Air (Domestic Solid Fuel Heaters) Regulation 1997 require that new wood heaters sold from July 2001 meet emission standards that are 25% more stringent than previous standards. EPA has one person to conduct spot checks on retailers to verify certification of heaters. Australian Home Heating Association (AHHA) supplies certified heaters to approximately 80% of the market.	The Clean Air (Domestic Solid Fuel Heaters) Regulation 1997 was replaced by Part 2 of the *Protection of the Environment Operations (Clean Air) Regulation 2002*, stipulating as before that slow combustion domestic solid fuel heaters sold in NSW must meet 'Australian Standard AS/NZS 4013:1999: Domestic solid fuel burning appliances - method for determination of flue gas emission.' Each heater must have a certificate of compliance certifying that the heater model has been tested in accordance with the Australian Standard and each heater must be marked accordingly. http://www.environment.nsw.gov.au/woodsmoke/poeoca.htm This emission standard remains 25% more efficient than previous standards. (ie maximum emissions allowed from new woodheaters is 4.0 grams of particulate matter for each kilogram of wood burnt.) http://www.deh.gov.au/atmosphere/airquality/woodsmoke/standards.html
5.2 Develop a code of practice for installation of heaters	EPA Local councils Australian Home Heating Assoc (AHHA)	Development of a comprehensive industry code of practice	Early 98	*Environmental Guidelines: Selecting, Installing and Operating Domestic Solid Fuel Heaters*	EPA released *Environmental Guidelines: Selecting, installing and Operating Domestic Solid Fuel Heaters* in August 1999 but AHHA advises code of practice not finalised. AHHA to release as a national handbook on environmental issues. Currently in late draft stage with funding needed to finalise and release. AHHA seeking funding from Environment Australia to complete handbook. All state EPA's contributed as well as New Zealand.	No information on code of practice available

Review	Key Agencies	Stated goals	Timelines/SSS (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
5.3 Conduct a community education program on using wood heaters	EPA Local councils	Guidelines for wood suppliers Regulatory action by councils Incentives to upgrade to certified wood heaters, gas or electricity		Guideline *Selecting, Installing and Operating Solid Fuel Heaters* *Is your wood going up in smoke?* brochure	EPA published Environmental Guideline *Selecting, Installing and Operating Solid Fuel Heaters*, in August 1999 and brochure *Is your wood going up in smoke?* Brochure explains ways of minimising smoke emissions. AHHA advises that there are no NSW guidelines for wood suppliers to ensure wood for sale is properly seasoned, hard wood. Environment Australia has produced discussion paper *A National Approach to Firewood Collection and Use in Australia*. No incentive scheme for owners of old heaters to upgrade has been introduced in NSW, however the government has recently announced a three year $6M Clean Air Fund. The fund will be used to assist householders replace outdated wood heaters. The program will commence in Albury, Armidale, Cooma, Orange and Lithgow. For a short period Armidale Council offered low interest loans to a maximum of $3000 (including installation) for people wishing to upgrade old wood heaters to certified wood heaters or to gas or electricity. The offer was so popular that Council was eventually unable to finance the project and chose to discontinue it.	The *Clean Air Fund* was a 3 year program established in 2001 to reduce air pollution from small commercial/industrial and domestic sources. The *Woodsmoke Reduction Program* introduced in 2002, was extended in 2003 to include three extra regional councils. The program incorporated education, enforcement and cash incentives for residents of nine regional towns to replace old wood heaters and open fireplaces with cleaner alternatives. Councils involved were: Armidale, Orange, Cooma, Tumut, Lithgow, Blue Mountains, Goulburn, Wagga Wagga and Wingecarribee. 1,209 woodheaters were removed and/or replaced by June 2003. Local councils have power under the *Protection of the Environment Operations Act* to take action against excessive smoke from wood heaters. They can also limit or ban the installation of wood heaters in new homes under NSW planning legislation. http://www.ephc.gov.au/pdf/annrep_02_03/127_133_App_6_AAQ_NSW.pdf
5.4 Continue voluntary don't light tonight campaign	EPA Local council AHHA	Reduce wood smoke emissions on cold and still nights			Voluntary *Don't Light Tonight* Campaign continuing with education warning of poor weather conditions for solid fuel heaters eg temperature inversions.	*No Burn* notices and *Don't Light Tonight Unless Your Heaters Right* alerts are still issued from time to time during the winter months, as part of the Regional Pollution Index on the DEC NSW website: http://www.epa.nsw.gov.au/airqual/aqupd.asp. Notices are also made on the Air Pollution Telephone Information Line, and the Public Notices section of the Sydney Morning Herald

Review	Key Agencies	Stated goals	Timelines/SSS (where stated)	Related plans/ strategies	TEC Review 2001	Change since 2001?
Strategy B. Improve energy efficiency of homes	Local council SEDA Dept of energy	Reduce emissions from pollutants Minimise burning of fossil fuels Encourage renewable sources of energy Reduce GG emissions		Minimum energy performance standards (MEPS) conducted by DoE post 1999		
5.5 Implement the energy smart homes program (ESHP)	Sustainable Energy Development Authority (SEDA) Local council	60% building approvals (BA's) granted for new homes to have 'minimum' Energy Performance Rating (EPR) 90% of new homes & 70% of retrofits with a BA will have an 'improved' EPR Introduce an energy efficiency housing policy into 50 local councils covering 80% of new homes & alterations	Mid-1997 to 2002 6m over 3 yrs	Energy Smart Homes program Green Power Scheme Energy Smart Homes Make-Over	65 councils have signed MoUs with SEDA to implement ESHP, this amounts to 76% of residential development approvals (DAs). 31 have fully implemented ESHP and meet all minimum requirements. This amounts to 42% of residential DAs. DUAP has introduced SEPP 60 for Exempt and Complying Development (Gazetted 3 March 2000). SEPP 60 requires 3.5 Star NatHERS rating for complying residential development. SEPP 60 currently applies to 63 Councils who do not have provision for exempt and complying development in their LEPs. As of May 2001 there were 18,144 residential and 1,796 business GreenPower customers. This represents approximately 0.3% of the customer base in NSW. SEDA sponsors 7 major industry associations under the Energy Smart Industry Partnerships. SEDA sponsors an Energy Efficiency Category at these associations' awards to recognise best practice in each association. From 2001 sponsorship criteria will stipulate all award entries to have a minimum 3.5 star NatHERS rating. SEDA has MoUs with Development Corporations (Landcom, South Sydney Development Corporation) to encourage energy smart development (minimum 3.5 star building envelope, minimum 3.5 star hot water system). SEDA also has MoUs with individual builders and architects to encourage energy efficient design and building. Proposed Sustainability Advisory Council will focus on buildings.	As of March 2003, there were around 75,000 residential, and almost 3,000 commercial Green Power customers across Australia. Evidence of declining growth. http://www.greenpower.com.au/GPFaq.shtml#GP7 SEDA no longer exists, and has been absorbed into the Department of Energy and Utilities. Energy efficiency programs have been supplemented by the introduction in July 2004 of *BASIX - the Building Sustainability Index*. BASIX is a web-based planning tool for assessing the performance of new homes against a range of sustainability indices: Landscape, Stormwater, Water, Thermal Comfort and Energy The first stage of BASIX is focussed on reducing Water and Energy use. New residential development in nominated local government areas must be designed and built to use 40% less drinking-quality water and produce 25% less greenhouse gas emissions (40% by 2006) than average NSW homes of the same type. http://www.basix.nsw.gov.au/information/about.jsp#lga This is positive step forward in designing sustainable, energy-efficient homes. Investigation of a Demand Management Fund just completed.

Objective 6. Manage the impact of open burning

"Objective: To implement effective smoke management programs, recognising the importance of hazard reduction burning in controlling bushfire".

TEC Action for Air Review table 6

Review	Key Agencies	Stated goals	Timelines/$$$ (where stated)	Related plans/ strategies	Comments pg 56	Change since 2001?
Actions						
Strategy A. Manage the impact of open burning	NSW Rural Fire Service			Bushfire risk management plans & operational plans Rural Fires Act 1997		
6.1 Release a users' guide to open burning restrictions (March 1998)	EPA Dept of Rural Fire Services (RFS) Councils NSW Fire Brigade State Forests NPWS	Those responsible for hazard reduction and other open burning understand the statutory requirements concerning clean air & open burning management	March 1998	Clean Air & Rural Fires Act	*Regulation of Open Burning* guide released explaining restrictions on open burning. Available from EPA Goulburn St Office or phoning EPA pollution line 131 555. General availability in the community i.e from Councils unclear. Rural Fire Service provided copy 9/2/01 but unable to advise if still widely available. Advised 18/7/01 that the EPA is in the process of producing an updated version.	*Regulation of Open Burning in NSW* guide now available on DEC NSW website: http://www.epa.nsw.gov.au/air/roob/index.htm The guide was jointly prepared by EPA and RFS and gives local councils and fire management authorities an outline of burning requirements under the Protection of the Environment Operations Act 1997 and the Rural Fires Act 1997. The Protection of the Environment Operations (Control of Burning) Regulation 2000 and the Rural Fires Regulation 2002 now build on these measures also and are covered in the guide.
6.2 Develop smoke management guidelines for open burning (June 1998)	EPA NPWS RFS State Forests Bushfire Coordination Committee	Develop smoke management guidelines Integrated into bushfire risk management and prescribed burning training programs	Early 1998 Following 2 years		18/7/01 RFS advise that guidelines are currently in draft form. Currently being reviewed by NPWS.	Policy No. 3/01 *Bushfire Smoke Management* was adopted by the Bushfire Coordinating Committee of the Rural Fire Service on 18 October 2001. It states that the monitoring requirements of bushfire risk management plans will include smoke management performance measures. The policy is available on the RFS website: http://www.rfs.nsw.gov.au/index.cfm?cid=97&CFID=2461139&CFTOKEN=3510601#

Review	Key Agencies	Stated goals	Timelines/$$$ (where stated)	Related plans/ strategies	Comments pg 57	
6.3 Educate the community on open burning restrictions	EPA Local councils Dept of Bush Fire Services Fire Brigades NPWS	Make available community info packages regarding burning restrictions	Early 1998		Information package released 4 May 1998. Publications available from EPA pollution line 131 500 or internet. New *Protection of the Environment Operations (Control of Burning) Regulation 2000* commenced 1 Sept 2000, replacing *Clean Air (Control of Burning) Regulation 1995*. 93 Councils now listed in Schedule 1 in which some or all burning is restricted. Under new regulation high-rise domestic incinerators to be phased out by September 2001.	Policy No. 3/01 *Bushfire Smoke Management* states that smoke management principles, policies and procedures will be incorporated within fire management training curriculum adopted by fire fighting authorities. The policy also states the Bush Fire Coordinating Committee member agencies and organisations will advise the EPA (DEC) on smoke management for incorporation in appropriate air quality educational materials. EPA NSW's SoE Report 2003 states the Bush Fire Coordinating Committee released *Managing Smoke During Prescribed Burning* guidelines, but these could not be found on the internet.

Objective 7. Monitor, report and review air quality

"Objective: to provide for the ongoing monitoring and future development of the NSW Air Quality management Plan, based on new scientific, economic and social information, wide collaboration and open consultation".

TEC Action for Air Review table 7

Review	Key Agencies	Stated Goals	Timelines/$$$ (where stated)	Related Plans/Strategies	Comments pg 59	Change since 2001?
Actions						
7.1 Provide internet access to air quality data by mid-1998	EPA	Provide internet access to daily & quarterly reports	mid-1998		Daily reports of Regional Pollution Index (RPI) available on internet. Breakdown of individual pollutants available only in quarterly reports (not on internet).	In Oct 2004 it was revealed DEC monitoring stations at Earlwood and George Street in the CBD have been closed. The station at Earlwood was crucial for monitoring pollution from the M5 East tunnel stack. Pollutant monitoring has also stopped at Rozelle, St Marys, Newcastle and Illawarra. In 2004, the metropolitan air quality network dropped its sampling levels from 1500 to 450. Closure of stations and cutbacks on monitoring significantly compromises the collection of long-term scientific data sets, and the capacity of the DEC to monitor and improve air quality. It may also limit their capacity to bring about a successful prosecution due to limited evidence. Daily reports of Regional Pollution Index (RPI) are still available on the DEC NSW website. The RPI is issued twice daily. The morning report at 9:30am covers the period from 3pm the previous afternoon to 6am that morning. The afternoon report at 4pm covers the period 6am to 3pm. The report is also sent to electronic media and published in newspapers serving Sydney, the lower Hunter and Illawarra. DEC NSW also provides a 24-hour recorded telephone message information service. The RPI is categorised as LOW, MEDIUM or HIGH, with HIGH indicating the determining pollutant levels have reached or exceeded the relevant standard or goal. Breakdown of individual pollutants available only in quarterly reports, which are now available on the internet. However, only reports up to end of 2003 are currently available.

7.2 Set up an air quality monitoring interest/ advisory group	EPA	Provide a forum to identify priorities for future modelling		Metropolitan Air Quality Study (MAQS)	Group not as defined in *Action for Air*; no community, industry or university input; more narrowly defined. EPA involved with other jurisdictions in Peer Review Committee to ensure its air quality monitoring network meets requirements of Ambient Air NEPM. Committee consists of technical specialists from each jurisdiction and representatives of Australian Conservation Foundation, Environment Victoria, Holmes Air Science and GHD. EPA/CSIRO group established to develop air quality forecasting system based on emissions and meteorological information.	Still no broad based monitoring group
7.3 Report on the results of the air toxics study	EPA	Results of pilot study investigating levels of air toxics in the GMR	Early-1998		Pilot Study released May 1998. Report of comprehensive data from Air Toxics Research Project due June 2001. As of 20/7/01 report was still in press but expected to be released soon. This project extends work conducted in the Pilot Air Toxics Project. Monitoring conducted in Sydney, Illawarra and lower Hunter regions.	Report released
Review	***Key Agencies***	**Stated Goals**	***Timelines/$$$ (where stated)***	**Related Plans/ Strategies**	**Comments pg 60**	**Change since 2001?**
7.4 Reconvene key technical committees with industry groups	EPA/ Industry Technical Committee	Investigate responses to unresolved issues			EPA/Industry Technical Committee meets irregularly. Convenes when an issue or problem arises and a technical solution is required. Discussions with oil industry on engine design and fuel quality now occurring at national rather than state level.	
7.5 Metropolitan Strategy Committee to review environmental matters	Metropolitan Strategy Committee	Review achievement of air quality goals	Annually		Metropolitan Strategy Committee formed under DUAP but disbanded. Some sub-committees for more specific issues (eg land and housing supply) have survived. No other information available.	A Metropolitan Strategy Discussion Paper was released by DIPNR in September 2004. It is the basis for developing a Metropolitan Strategy for Sydney over the next 30 years. The Discussion Paper is based on the feedback received at the Sydney Futures Forum in May and the Local Government Forum in June 2004, and will also be considered at discussion groups in October and November, with submissions closing on 30

						November.
7.6 Convene a public forum to report regularly to government	EPA	Convene a public forum to review air quality status and strategies	6 months after release of each State of the Environment Report SOE)	Action Plan NSW SoE reports	SoE Report released Feb 2001. Forum to be held September 2001.	Clean Air Forum to be held 17 November 2004. In addition to its current Action for Air commitments, DEC NSW recently formed a Small Engines Working Group to encourage the uptake of cleaner small engines (two and four stroke cycle) in NSW. Two discussion papers have been released for comment regarding: - lawn mowers and garden 'tractors' - hand held equipment eg string trimmers, leaf blowers and chainsaws - outboard engines and jet skis