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HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON ENVIRONMENT AND HERITAGE

Reference: Sustainable cities

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CANBERRA

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HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON ENVIRONMENT AND HERITAGE

Thursday, 17 June 2004

Members: Mr Billson *(Chair)*, Ms George *(Deputy Chair)*, Mr Barresi, Mr John Cobb, Mr Hunt, Mr Jenkins, Mr Kerr, Mr Lindsay, Ms Livermore and Mr McArthur.

Members in attendance: Mr Billson, Mr John Cobb, Ms George, Mr Jenkins, Mr Kerr and Mr McArthur

Terms of reference for the inquiry:

To inquire into and report on:

Issues and policies related to the development of sustainable cities to the year 2025, particularly:

- The environmental and social impacts of sprawling urban development;
- The major determinants of urban settlement patterns and desirable patterns of development for the growth of Australian cities;
- A 'blueprint' for ecologically sustainable patterns of settlement, with particular reference to eco-efficiency and equity in the provision of services and infrastructure;
- Measures to reduce the environmental, social and economic costs of continuing urban expansion; and
- Mechanisms for the Commonwealth to bring about urban development reform and promote ecologically sustainable patterns of settlement.

WITNESSES

Committee met at 11.09 a.m.

PALMER, Mr Malcolm, Research Officer, Engineers Australia

PIKE, Mr Matthew, Member, Canberra Division Environmental Engineering Society, Engineers Australia

TAYLOR, Mr Peter, Chief Executive, Engineers Australia

CHAIR—I declare open the public hearing of the House of Representatives Standing Committee on Environment and Heritage for our inquiry into sustainable cities 2025. This is the lucky 13th hearing of the inquiry. We are joined by representatives from Engineers Australia. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently, they warrant the same respect as proceedings of the House itself. It is customary to remind you that giving false or misleading evidence is a serious matter and may be regarded as contempt of the parliament. So, on that cheery, welcoming 'love to hear all you have to say' note, are there any introductory remarks or opening statements you would like to make?

Mr Taylor—Thank you, Mr Chairman. I would like to make a brief opening statement. I preface it by saying that I have a particular personal interest in this inquiry as well, having been in local government for the last 27 years prior to taking up this appointment and more recently as Chief Executive of Toowoomba City Council. Increasing population, the movement of people from the bush to the coast and the recent property boom in Australia have all had major impacts on urban expansion. Australian cities are experiencing significant new urban development and redevelopment in established suburbs, often without complementary provision of critical infrastructure. Without changes to future planning and development, pressure will be placed on existing water, waste disposal, transport and building infrastructure. As a result, our people and our environment will be exposed to increasing pollution and health risks. As our population continues to increase and scarce water resources are stressed even more than they are now, we will need to transform our communities and our industries. We will need to create a vital economy that conserves natural resources and energy and embraces the principle of ecologically sustainable development.

Engineers Australia has over 76,000 members Australia-wide, many of whom work in areas relating to urban development. Sustainability is a major tenet of Engineers Australia's code of ethics, and our members view sustainable development as fundamental to the growth of our cities. Sustainability represents the greatest challenge to all engineers in their quest to provide engineering solutions that will ultimately improve the quality of life of our communities. Engineers, more than any other group, have the knowledge, skills and capacity to bring about sustainability in civic works, building, transport and power—indeed, all activity involving utilisation of resources. Sustainability will likely prove to be one of the greatest challenges facing us in the 21st century.

Our submission, which you have received, considers options for sustainable urban development in the areas of transport and building development and water management. Since we made our submission, I have recently participated in the livable cities roundtable with representatives of 11 other professional bodies with a strong interest in this subject. I also

participated in the national summit on the future of Australia's cities and towns two weeks ago. The outcomes of that summit are due for release shortly, and I commend them to the committee.

CHAIR—We are all waiting for them.

Mr Taylor—Engineers Australia believes that the federal government's securing Australia's energy future policy framework has considerable relevance to the sustainable cities inquiry. It adopts a pragmatic approach that recognises the country's enormous energy resource in fossil fuels and emphasises the need to improve existing technology and develop new technologies to reduce emissions. But we believe that providing stretched targets to accelerate the development of cost-effective renewable energy resources would have improved it. In this, the Year of the Built Environment, Engineers Australia welcomes the opportunity to appear before this committee to support our submission and answer any questions that you might have.

CHAIR—Thank you, Peter. How would you characterise those two recent fora, the roundtable and the summit? Did you sense there were some recurring themes, some congruence of thinking?

Mr Taylor—I must say I was very surprised. The roundtable had a real diversity of people from ACOSS, the Conservation Foundation to engineers, economists, accountants—a really interesting mix of people. And planners—I should have mentioned them.

CHAIR—They will be upset with you.

Mr Taylor—A great convergence of thought. The planners had proposed a particular course of action, which I was not particularly enamoured with, I must say, but by the end of the day we had come to an agreement on a way forward.

CHAIR—So key themes?

Mr Taylor—Key themes were pretty much the usual, I guess, but the need for the Commonwealth to take a lead. And to some extent at the cities and towns summit there was some disappointment that the Commonwealth was not represented. There seemed to me to be some conflicting views, because I think the minister said that it was a state matter whereas clearly this committee was in existence.

CHAIR—They invited me, but they need to let me know more than five minutes before the event so I can get there.

Mr Taylor—I think there was that need for federal Commonwealth leadership maybe through COAG. I think one of the messages that came out was that something like COAG needed to be there to force the issue, I guess.

CHAIR—The term 'leadership' is a great word that can mean just about anything to whoever wants to use it or hear it. How was that leadership characterised? What were the sort of elements that people were looking to see to believe that leadership was being provided?

Mr Taylor—I think it was probably in providing the overall framework, the need to coordinate the responsibilities in the various spheres of government. One of the most notable things when the roundtable started was that local government had not been mentioned at all and I felt as though I was representing the ALGA at that particular forum because they were not there, with my background. I think it was pretty important that the focus did incorporate local government, because that is the level of government that actually delivers a lot of the goodies at the grassroots level.

CHAIR—So coordination, and cash no doubt?

Mr Taylor—Yes, sure. There has to be a framework. There were various models. One of the things that was being called for was some sort of inquiry to work out the best model. There were some thoughts that perhaps the NCP model might be a good one. I thought that was a pretty appalling sort of model myself.

CHAIR—What were the reservations around that as a concept?

Mr Taylor—I think the way the incentive payments worked. Particularly in local government in Queensland at the time, there were a lot of consultants making a lot of money proving that you should commercialise or privatise when in fact they were not really based on sound premises. But, because that was seen to be the desired outcome, that is the way the reports were structured. So a lot of people went down that path—

CHAIR—Sort of rewarding the wrong things—

Mr Taylor—And got their fingers burnt. I will give you an example. Toowoomba City Council, for instance, has one water and waste water organisation within the engineering services department. One of the proposals was that that should be split into four companies. Each of those companies would have its own overheads. They would stop talking to each other because they would not want to be giving away too much information about each other. So you would lose the cooperation. There would be a duplication of a whole lot of those internal services. It would be quite complex to make the water components, both the bulk supply and the reticulation and the treatment of the waste water, all marry in together. Instead of looking at it as a total water cycle, which might involve recycling of water, the water people would be wanting to produce water and sell it without really worrying about whether they were using recycled water. They would rather just keep building their dams and—

CHAIR—So coordination, cash and inquiry. What else came out of those fora? What were the other general directions that seemed to generate head nods from those two fora?

Mr Taylor—I think there was a fair bit of agreement that some of the more recent funding models might be worth a look at, such as the Roads to Recovery and the NAP system now that it is gone into its next phase with the priority region focus rather than—

CHAIR—So set out a strategic plan for a region, show that the work has been done and then direct resources—

Mr Taylor—And get the communities involved. That was the other thing. There had to be an education process to help people realise what sustainability means in terms of their environments and get them involved in the solutions so that there is some ownership.

CHAIR—And the summit—the same thing?

Mr Taylor—That was the sort of stuff that came out of that, yes. I did not bring any notes with me.

CHAIR—I was just curious because we understand these things are going on. Whether it is by design or omission, the opportunities for engagement have been a little bit awkward from our level.

Ms GEORGE—In relation to one of the issues in your submission about sustainable urban development, you seem to suggest that the Victorian government's Melbourne 2030 program is a good way to go. What is it about that in particular that you find exemplary in terms of a model approach to the issues of sustainability?

Mr Taylor—I might flick that one to Malcolm and let him have a go.

Mr Palmer—I guess the reason we focused on Melbourne 2030 was that it was a good package in that it addressed a range of issues to do with sustainable urban development. For example, the urban growth boundary—that is, throwing a ring around Melbourne. It also talked about livable communities, having various buildings in local communities that have all of the facilities such as shopping facilities, child care, schools and housing—changes in planning in terms of livable communities. It also talked about local transport and the number of trips people make. Melbourne already has the TravelSmart program and I think Western Australia has adopted a similar program as well. Also sustainable building design and other ways that people who are living in urban areas can contribute to sustainable development. In effect, the package represented a holistic approach to sustainable development. What this means is that it is not necessarily applicable to every single city—every major centre is going to have a different approach—but it is a good blueprint for how it could be dealt with and how it could be represented through a COAG framework. So it takes a holistic approach and it takes consideration. The urban growth boundary, for example, has been used by several other cities—

CHAIR—I think Canberra was looking at it.

Mr Palmer—Yes, Canberra is looking at it as well, and other cities like Canberra and Sydney are looking at aspects of sustainable cities planning to try to understand the ecological footprint of cities and the impact that they have on the environment.

CHAIR—On that there has been some critique of it as well—that is probably the understatement of the year, isn't it, Harry?

Ms GEORGE—They are both Victorians.

CHAIR—In fact, I have not met anybody actually affected by it who is happy with it. The professions think it is great as an academic exercise but, when the rubber hits the road, it is

causing all sorts of trauma. A couple of things: a holistic approach seems to not focus sufficiently on employment opportunities. It seems very dormitory driven. A lot of the evidence we have heard is that people do not commute for the fun of it. Having a job is as important to where they sleep and where their community is and their cultural, academic and leisure interests. The dislocation of those things is a real issue that is even added to by 2030. Do you see that lack of finding economic patches of activity in reasonable distance from these population centres a huge shortcoming?

Mr Palmer—That is a good point. Other plans for livable communities have suggested a way of avoiding problems with people commuting to work, how far they commute and the fact that people who are working in certain areas are commuting a long way. For example, if you live in a city like Sydney, you may have to commute a very long way to work, and that is a major problem. We have mentioned in our submission about transport integration and about the need to develop transport corridors that deal with this.

A problem with urban development on the fringes is that invariably you get new suburbs developing. People who are working in the centre of the city are living out there because invariably the property is cheaper. It has been suggested that you could provide affordable housing closer in to a city centre and, when you are building these new suburbs, new areas, look at improving the transport. That is something that we have said in our submission.

CHAIR—Your submission talks about better handling the transport task as if that is a given. I guess what I am wondering is whether we can make some ground on the extent of the travel requirement in the first place by, rather than by just having sprawl that is urban and a domicile focus, having more rounded experience where there are chances to work somewhere within a reasonable distance.

Mr Palmer—That is a good point.

Mr Taylor—That was the theory for Canberra, though, wasn't it? Then they got the town centres, and I think in practice the people who want to and do live in Belconnen would probably work somewhere else instead of living and working in that town centre precinct—or Tuggeranong and so on. They tend to cross the city in order to go to work.

CHAIR—Let us look at the implementation of 2030. An issue we have come across is the whole governance arrangement. It seems from my reading of it that a lot of what was talked about at these summits and the roundtables was how you get all the relative stakeholders to play their part and make a contribution. In the case of 2030, you have these nefarious implementation groups. Harry, have you ever met anybody who is on them yet? There is this bunch of people supposed to be overseeing the implementation of these things that are not from local government. They are not representative of the community. We do not even know who they are, let alone what their task is. Does that highlight a governance issue that needs to be tackled as much as the physical architecture of the cities?

Mr Taylor—I think you are right. For the last 10 years or so I have been involved in the south-east Queensland water and waste water strategy study. Just coming to grips with that, and getting the various levels of government and the various interest groups to all get thoroughly involved in it and sign off to it, to then get the governments and the people who have to provide

the funds to actually commit to doing that is a real difficulty. It is easy enough to plan these things, but to actually implement it is the difficulty. I really do not know what the answer is there, other than that people have to realise that there is a problem looming. Unless we do something about it now, then it is going to be too late. With things like water supply, which is one of our biggest problems, you just cannot fix it overnight. We have to really come to grips with the business of, for instance, Melbourne Water saying, 'We will not build a new dam in the next 50 years; we are going to do it all by demand management.' I wish that were true; I wish they could do that. And Sydney Water has exactly the same sort of policy. I think ACT has to some extent, although there has been talk more recently about the Naas Valley and places like that. Brisbane I think is much the same. But, for south-east Queensland, unless there are dams built, they are going to run out of water in the next 10 to 15 years.

CHAIR—After we had that torrential downpour just before Easter.

Mr JOHN COBB—Did you say the next 10 or 15 years?

Mr Taylor—2030 for south-east Queensland was the real crunch time when there was going to be a net shortage of water.

Mr JOHN COBB—That is more through growth than—

Ms GEORGE—Population growth.

Mr Taylor—Yes, population growth. That is assuming that we do not have any continuing dry spell; we do not have real climatic changes. We are going to have to go into the recycling of water far more thoroughly.

Mr JOHN COBB—Is sewage water or waste water a lot of water? Obviously it is, but—

Mr Taylor—It is about 40 to 50 per cent of the water that is consumed.

Mr JOHN COBB—There is nothing wrong with it. In Condobolin, my home town, they use it on the golf course, and when everyone has their drink they do not realise that that is what they are drinking. Is there any reason, apart from mental ones, why it cannot be funnelled back through the system?

CHAIR—Treatment levels.

Mr Taylor—I am not a medical person or a pathologist or any of those sorts of things. There are concerns about making sure that viruses do not get through.

Mr JOHN COBB—Yes, of course.

Mr Taylor—And drugs and so on that may have a build-up effect. We have heard stories about the pork industry, for instance, the hormones that are given to pigs, cattle and so on, and that they eventually can get into the meat supply, get into the human body and start this build-up. I do not know whether that is fact or fiction.

Mr JOHN COBB—I would not worry too much about it.

Mr Taylor—I still eat meat. But I am convinced that part of our future lies in recycling of water.

Mr JOHN COBB—It seems to me there must be one heck of a lot of water. You say it is about 40 per cent of the urban usage?

Mr Taylor—That is what the ABS figures show, but in Toowoomba I think it is more like 60 per cent. On average, Toowoomba was producing about 40 megalitres of water a day and about 20-odd were going out the other end. Of that 40 that was produced and distributed, probably five megalitres a day went to some of the surrounding shires. So 20 per cent as a percentage of 35 is more than 50 per cent.

Mr JOHN COBB—That has to be treated no matter what happens to it, hasn't it?

Mr Taylor—Yes, it does.

Mr JOHN COBB—The grey water does not have to be but I presume could be far more easily than the sewage water. But in actual fact it is not managed as much, so it would be easier to recycle the sewage water than the grey water.

Mr Taylor—Again, if I can go back to my Toowoomba experience, I spent three or four years trotting down here a couple of times a year with the mayor and doing various lobbying exercises trying to get some funding for a $50 million project for Toowoomba. The benefits for that were estimated, and these were benefits to the environment—

CHAIR—This was storm water capture, was it?

Mr Taylor—No, this is recycling of treated water.

CHAIR—But you are talking about storm water—

Mr Taylor—Because it currently goes into the top end of the Murray-Darling Basin. The idea was to take it all out of there and provide some of it for irrigation, some of it for a new industrial intermodal facility which is planned to be the next Acacia Ridge for south-east Queensland, 1,000 megs a year already goes to Millmerran power station which is 90 kilometres away and another 2,000 was going to go out to Acland Coal to clean the coal. The benefits there from all of that, with regional development and irrigation, were estimated around $1 billion, and that is recycling about 10,000 megalitres of water a year.

Mr JOHN COBB—I suppose you did not actually get to the point where you costed that as compared with putting another dam in?

Mr Taylor—Yes, I did. A new dam was around $135 million. However, by doing that, we could defer the building of that dam for 10 to 15 years at an estimated net saving of I think around $48 million, just in deferred capital expenditure.

Ms GEORGE—Is there any scope for the filtration of sea water for human use? I have a constituent who is always on me about that.

Mr Taylor—Reverse osmosis is probably the best way of doing that—yes, that is probably the best way.

Ms GEORGE—Can you just explain that?

Mr Taylor—The way I think it was explained to me when I did chemistry at school was that, if you take a semipermeable membrane like cellophane and you have a highly concentrated solution on one side and pure water on the other side, osmosis eventually will try and equalise the concentrations in the two sides. Reverse osmosis does the opposite. It actually applies an electrical charge, a pressure, to force the concentrated material through that membrane and leave you with a less concentrated or pure water on the other side. Probably the other thing that has great potential, though, is solar treatment of water—not so much the more brine sea water but the estuarine water that has lower concentrations of salt. That technology has been in use in Israel for a long time, and the costs are coming down.

CHAIR—What about storm water? That is a huge resource.

Mr Taylor—Storm water, yes. There is great potential there.

CHAIR—Engineering-wise, there is the work you are doing up around Elizabeth in South Australia in capturing storm water and pumping it back into aquifers once it has been treated and things like that. Is your organisation aware of other plans to capture storm water—

Mr Taylor—Newcastle University and Newcastle City Council have done some pretty good work in new subdivisions, and Brisbane I think is taking that sort of work on.

CHAIR—We had a look at one—what was that place called with the swale drains?

Mr Taylor—Yes, that is it. They actually reduce the run-off from new development to basically predevelopment conditions. So you reduce the run-off and you also reduce the erosion that occurs. That water is stored in individual tanks under the houses, which is used for non-potable uses, and it can be topped up from the town water supply. I think the figures they quoted were something like 50 per cent savings.

CHAIR—Because there is that area between the two rivers where they are looking at doing something like that.

Mr JENKINS—For a profession like yours, are there new technologies that can be used, especially for water recycling? That last example was one of the areas that I wished to explore. There appears to be great potential in new subdivisions to show what can be done. On your story about the Toowoomba experience, was the problem there that you are really looking for money to retrofit amongst systems? Is that where, for agencies to do it, they need outside assistance because they cannot do it internally?

Mr Taylor—Yes, it is a big cost. What we were looking at there was a form of a PPP, public-private partnership. It started off as a quarter, quarter, quarter type split between federal, state, local government and private enterprise. That was how we initially set it up. I am a little bit out of touch since I have not been there since January. But, in the end, Toowoomba City Council was going to fund about a third of it, the Queensland government came to the party to the tune of about $11 million and they were looking at how they might fund the rest through private enterprise. So private enterprise might build a new treatment plant to increase the level of treatment of the water and then run that whole waste water treatment operation as a charge-back to the city council.

Mr JENKINS—What do we need to do to get over these cultural psychological impediments to putting in new technologies along the lines of Mr Cobb's questioning? In new developing areas alongside my electorate, they were going to do a wetlands sewerage onsite thing—which seems to work but nobody wants to actually put it into practice.

Mr Taylor—This is cleaning up storm water?

Mr JENKINS—It was actually a mix. They thought that they could do it through to treating sewage. But it all became too problematic on the basis of getting people onside to do it.

Mr Taylor—Education is a fundamental part of it. I remember when I was on a water industry advisory committee for the state government in Queensland one of the things talked about there was to start at the primary schools. My recollection of my kids when they were at primary school was that, if they were taught something about the environment or saving water—turn the tap off while you are cleaning your teeth and that sort of stuff—that message stuck. So if we are going to change attitudes we have to start at the school level to get the kids believing that this is just par for the course. Water recycling is going to be something that we have to do in the future. It is harder to change the older heads to think that way than it is for the kids. I think education has a lot to do with that. As I said before, you have to start educating people about the need for the whole business of sustainability; otherwise, they continue on as they were.

Mr JENKINS—Can I just change tack to public transport provision. I suppose one of the challenges for this inquiry in trying to sort out a role for the federal government is to come to some criteria that we can use as a basis for the level of involvement. You have been asked questions about the feds showing leadership, but what does it actually mean? At the end of the day there is going to be a challenge about funding. It would appear that, for state governments and to the extent that local governments are involved, it is perhaps beyond them in a resource sense to actually achieve the outcomes that we need, but as a national government we cannot say, 'Here is the blank cheque.' I am just throwing up this as a suggestion. On the basis of the criteria, it could be that we decide there is a population policy imperative and we would get involved that way with all the other whistles and bells about proper planning and strategic planning et cetera.

Mr Palmer—I guess I can answer that by saying that, while we strongly support the AusLink proposal, we did put forward in media releases on this subject that we think the federal government should become involved in helping to fund urban public transport. I know you mentioned a blank cheque. We are not suggesting a blank cheque. But there may be specific cases where public transport assistance could be provided to state governments in terms of

public transport. That could be related to other aspects, as we discussed before, such as helping to provide funding for transport in new suburbs. It could be to do with innovation. For example, several state governments are looking at trialling alternative fuel technology in their bus fleets. So it could be a way of providing funding for innovation in urban transport. And it could be providing direct transport.

CHAIR—But is your answer to Harry's question that if the feds don't it won't happen? I think the point Harry is alluding to is that Western Australia and to a lesser extent Brisbane have done something about public transport. But I think I was barely pubescent the last time there was a public transport project announced in Melbourne by a Victorian government. It does not have to be that way; it just happens to be that way. I guess Harry is asking: how do you not buy into a problem that seems to be one of indifference or a lack of priority or whatever and target federal tax dollars in a wise way?

Mr Taylor—Our federal system I think creates problems, doesn't it? Each state seems to be hell bent on reinventing the wheel—because Queensland is different from South Australia is different from Western Australia. So everybody tends to do it differently somehow. I do not know how the federal government brings it all together. There was a case in point just recently with the professional standards legislation. Each state will come up with a different answer, which makes it very difficult for national bodies and people with members in each state to try and come up with a simple solution. With our colleagues in New Zealand—this is getting off the subject a little bit but I use it to illustrate the point—there is a Chartered Professional Engineers of New Zealand Act which applies to the whole of the country, and our sister institution over there is the administering authority for that legislation.

CHAIR—But that does not mean everyone is going to think the same. They might have parallel academic credentials, but engineers still think in different ways. That is the thing. How do you get the performance at the end of the day, given all this?

Mr Taylor—There needs to be some rules set which everybody has to follow, and that is the difficulty. I know it is a difficulty for the federal government in establishing that set of rules. To get back to Mr Jenkins's point, it might be that you need some taxation mechanism which, say, taxes congestion and the funding from taxing congestion goes into then producing a more efficient public transport system. There was a proposal in Cambridge some years ago when they were looking at congestion pricing there. They were going to put all of the funds from that into an electric monorail—

CHAIR—Peter, there is nothing stopping states and territories doing that now. If it is of such virtue, there is nothing stopping that now. This is the issue where you are just buying off things that are too politically difficult for others to buy. Is that what the states and territories want the feds in for so that you can hop into them then and say, 'It was not us; it was the feds that forced us to do these horrible things like manage congestion.'

Mr Taylor—Maybe that is where COAG has a bigger role where you actually get everybody to agree, and I know that is more easily said than done too. But this is an approach.

Mr McARTHUR—Can I just raise two issues. You may have covered the transport one we alluded to a minute ago. But, from an engineering point of view, it strikes me that the newer

suburbs have no public transport plan. The houses go up, a few streets are put down and it is all a scheme of the property developers. There is no plan to put in a rail or a bus system. It seems to me the rail system is just declining. Sometimes it is upgraded, but there is nothing new apart from the rail in Perth. What do you people suggest from an engineering point of view as to how you would encourage state governments to actually send out some more public transport routes?

Mr Pike—With public transport, do you put the infrastructure in first or do you put it in after there is a demand? It probably makes more sense to put it in after the demand has already grown. But to ensure that that can happen you need to make sure that the corridors remain open so that there is somewhere for that public transport.

Mr McARTHUR—Have you been advocating that? Have you got something on the record about keeping a couple of corridors open to put not a road but a rail structure in?

Mr Pike—That is what we have supported in our submission, definitely, yes.

Mr McARTHUR—You just say integrated networks, but do you have an example, apart from the Perth, one where it has actually happened?

Mr Pike—Within the ACT, as an example, there has always been the inter-town transport links—

CHAIR—I thought you were going to say the Gungahlin bypass or something. That is a whole bunch of corridors.

Mr Pike—No. Things like the bus lanes on Adelaide Avenue—those sorts of things have been planned within the ACT to keep those corridors open so that in the future the land is available.

Mr McARTHUR—Basically what we have heard in this committee is that we are trying to get rid of the car because we are too dependent on fossil fuel and motor cars, yet the planning of all these new suburbs, Canberra in particular, is based on the use of a motor car and sometimes a bus.

Mr Taylor—I think it is human nature, too, that people will continue to use a car as the first choice until such time as there is a reason to not do that, and congestion is usually one of the major reasons for that. The average person probably will not drive into the middle of Sydney if they can go in on the train.

Mr McARTHUR—My other question was in relation to solar hot water. I do not know whether you have covered that. Could you give me an engineering assessment of the economics of solar hot water?

Mr Taylor—I cannot, no.

Mr McARTHUR—You have it in your submission.

Mr Pike—Yes, we have. I do not have figures at hand, but with solar hot water there have been representations from industry and presentations that they have made locally in Canberra to

us. Some of the things that come out of that appear to be that the further north you go the more efficient it is, and it is definitely a lot more efficient than pure electric or pure gas. But the main efficiencies you get are if you have solar boosted with, say, gas. Solar on its own typically in these southern areas is not enough to actually provide a normal household's hot water.

Mr McARTHUR—The myth that is around the place is that solar is the panacea for the problems of the world.

Mr Pike—There are limitations—

Mr Taylor—In the collective capacity.

Mr Pike—Exactly. The further south you are—

Mr McARTHUR—What is your judgment on the capital cost versus the payback period?

Mr Pike—I have heard figures in the range of 10 to 15 years. It is quite long.

Mr McARTHUR—So in fact there is still a question mark. It has to be fairly subsidised. Governments are subsidising the solar to get it into the system, aren't they?

Mr Pike—At present, yes.

Mr McARTHUR—So what are you advocating? Are you advocating the use of solar hot water, given that it is a 15-year payback period and you need a subsidiary system to make sure it works?

Mr Palmer—I think we are advocating that we would like to see an increase in solar hot water usage. Yes, there is a long period for payback, but it does not mean that it is not viable into the long term. One of the reasons for putting this in the submission is that you have seen state governments and some local governments encourage the use of solar hot water heating because it is a viable technology.

CHAIR—And the feds through that photovoltaic scheme that granted money for about 18 months or whatever it was.

Mr Palmer—Yes, exactly right. It is an existing technology that has been around for some time; it is proven. Even though there may be a long period of payback, it is proven technology that does work. While there are other types of renewable energy generation which are quite new—and as you know from the announcement of the energy package the other day there will be research into them in the future—solar hot water has been around for a while. It is affordable for the average consumer, and they will get a payback over time on the solar hot water heating systems.

Mr Taylor—Without detracting from what Mr Palmer is saying, these things are useful supplements. They are a bit like rain water tanks in the back yard. If you are looking at an efficient means of supplying water to the population, you would not do it through individual rain water tanks because figures will show that is a pretty expensive way to do it. It has health risks.

Mr McARTHUR—We got the answer to that in Sydney the other day where it would take a 5,000-litre tank to make it even with Sydney rainfall. I think there is a bit of a myth about all these tanks myself.

Mr Taylor—A lot of them are just acts of faith, I suppose. It has become the trendy thing to do, so you offer people an incentive to do it. It probably does provide a useful adjunct, but compared with properly designed subdivisions and efficient town water supplies they are very inefficient ways of providing safe water systems.

CHAIR—Your submission, if I could characterise it this way, recommends a number of almost prescriptive standards or methods of bringing about behavioural change. There is an air of fatalism about it—that unless somebody says you have to lift your game it is not going to happen. I empathise with that view because we have talked for the last 40 minutes about things that could be, and indeed should be, but aren't. So the virtue is smacking people in the face and there is a few myths running around as well, but there is a lot that could be done that is not. Is it your sense of how change will be brought about that somebody should start prescribing minimum standards—and again I will draw from your submission; you tend to focus on prescriptive standards as distinct from performance standards—and the feds need to ride in with a great whacking bag of cash and buy the outcomes that you think are needed?

Mr Taylor—I think in any form of performance management you need to have some targets and you need to have some measures so that you can see how you are going. Unless we have some targets, key performance measures, unless we keep monitoring those and keep track of it, we will not know how we are going and people probably will not even get started because they have not got any targets to meet.

CHAIR—Would you argue that those targets are to be performance or outcome driven rather than input driven?

Mr Taylor—Yes. Personally, I would rather see them as outcome driven.

CHAIR—Because we have had evidence that there is an appetite for ticking the input box and therefore that renders virtuousness by default versus actually designing something that does perform and therefore encourages innovation. I will be frank: there is a criticism that you guys and other professionals are risk averse. If the culvert has not been laid in 40 other places, you will not touch it.

Mr Taylor—We are not all like that.

CHAIR—No, but I am just being frank with you. The advice that we have is that, faced with doing something that is more sustainable but may be a new and emerging method versus the same old, 'Let us not do that, we have built 100,' you will go with the tried and proven and less risk to public liability kind of method.

Mr Taylor—Engineers, I suppose, are known as one of the more conservative professions. But in my life in the profession I have tried to get people to think outside the box and tackle different methods; hence, the recycling of water and the whole water sustainability project for Toowoomba and so on. I am in the process of changing Engineers Australia to an output based

budgeting system and total integration from strategic plan right through to performance measurement, output reports and so on. I am certainly an advocate of performance measures and outputs rather than inputs.

CHAIR—In the sustainable building area, you make a whole bunch of recommendations, which is all good stuff. But the building council of Australia moves at a glacial pace. You get McMansions popping up all over the country because they have been built 100 times before and—tick, tick, tick—there is an argument that local government as a regulatory authority does not have the competency to contend with new and emerging design and engineering concepts and wants technical specs and all sorts of stuff coming out of their ears before they will accept it. It is a whole attitudinal change.

Mr Taylor—Sure.

CHAIR—I am just wondering how you guys can help drive that or whether there is some other way of getting the outcomes you want, given that it seems to be running against the grain a tad.

Mr Taylor—We can do it to some extent with our members. But, as I said earlier on, we need to go back and start educating the population right from the school level so that there is an attitudinal change that comes through and people are more willing to embrace these new ideas and these new technologies as something that is absolutely essential for our survival.

Mr Pike—One of the things that we pick up in our paper is the need for further professional development, both engineers and architects, so that these new ideas become accepted and are widely dispersed and started to be used.

Mr Taylor—We are doing that on a large scale now. In fact, only a few weeks ago I signed an agreement with the Defence Materiel Organisation to provide a professional development program to them. Probably around 1,800 people are likely to be involved in that. In Defence itself the uniform people are also embracing it. A number of companies have signed up to this program.

CHAIR—You are getting your Roads to Recovery money, with a third of that being for strategic regional projects; there is AusLink cash running around; and there is financial assistance grants money. If the feds were to say, 'It is all there but come back with an integrated transport plan that has active transport at the heart of it and show us that there is some consciousness of that broader transport task before you get some dollars,' how would that go down amongst the profession?

Mr Taylor—I think that is a pretty sound approach. We have actually supported the idea of an integrated approach to roads, whether it be through new infrastructure or maintenance. The model that is happening on the road reform in Queensland is a good model where the regions are actually setting the priorities for the allocation of funds. The various local government representatives supposedly take off their local government hats and they decide on the basis of a region which are the priority needs, and that should be where the funds are allocated. I think that was the aim of AusLink, but the difficulty comes in how you establish those priorities. I am not sure that everybody has quite come to terms with that.

Ms GEORGE—Mr McArthur might be able to tell us how the priorities get established under AusLink!

CHAIR—The merit based analysis that leads to investment decisions under AusLink.

Mr McARTHUR—I will deal with Ms George later.

Mr Taylor—I did not mean to stray into those sorts of areas.

CHAIR—I am a local government guy, and 15 years ago we set up MOPARS, which was a structure of six different councils where we said that we would pool all the money because we have some really significant road transport issues that we cannot pick off individually, and there was an agreement that over five or six years everybody would get their share. But it was more about targeting those dollars.

Ms GEORGE—That is possible under Roads to Recovery now, isn't it?

CHAIR—It is almost required for most under $100 million, yes.

Mr Taylor—Perhaps we should clone you, Mr Chairman.

CHAIR—I would not do that. There would be strong resistance from my colleagues on that.

Mr McARTHUR—You have given a bit of thought to these matters. We have had some interesting submissions from individuals and groups. Where do you think the cities will be in, say, 50 years time unless we adopt some of these almost revolutionary type attitudes?

Mr Taylor—All I can say is that I am thankful I will not be around to live in one if we do not sort it out. I think an example is the south-west areas of Sydney where enormous growth is occurring in a fairly unplanned way and people are having to go through it and say, 'Where the hell is the water coming from?' They are having to create road corridors. They have people who live in two-storey houses on a tiny little block of land with a double income. They drive all the way into Sydney every day, and then they have to organise the babysitting for their kids, how they get their kids to school and so on.

Mr McARTHUR—But, from an engineering perspective, where do you see us in, say, 50 years time? Do you just see that these conurbations are really going to have a problem on what—water, congestion or environmental—

Mr Taylor—The whole social fabric will start to break down. If life becomes so difficult because of all these things, there will be those sorts of pressures.

Mr McARTHUR—Off the top of the head, what do you think we ought to be doing? You have mentioned water. Are you saying that we ought to get public transport to make it easier for people.

Mr Taylor—I think there has to be an overall planning framework that says, 'These are the goals that we want to achieve; this is what we have to do.' People have to do that long-term

planning and set aside the areas that are going to be subdivided, if that is the case—set aside within there where the transport corridors are going to be. Perhaps there are going to be infrastructure corridors where water and the whole lot is used as that corridor.

CHAIR—So is this Engineers Australia's call for a rebirth of regional planning authorities?

Mr Taylor—I think they serve a useful purpose—and SEQ2021 is an example—provided somebody does something about it. You can sit down and plan things to death, but unless people actually implement them—

Mr McARTHUR—But let us just develop for a minute this scenario that you mentioned—the breakdown of the social cohesion of the city because they are just travelling too much; they are spending three or four hours in a motor car. Surely, if you start to develop those scenarios, you will then get the population to think about energy and water and some of these issues that are 50 years away. Up until now people have basically said, 'It will be okay,' haven't they?

Mr Taylor—That is right.

Mr McARTHUR—We will have another building development, we will just take our motor car and we have not really addressed the problem.

Mr Taylor—I think there is enough intellectual capacity in Australia to deal with the problem; it is just a matter of having a commitment to do it.

Mr McARTHUR—But, unless you develop the horrific alternative, and at the moment there is no horrific alternative—

Mr Taylor—Yes, that is one of the things that towns and cities summit did. It went through and said, 'If we just let things go on, what is the worst possible scenario by 2030?' It was not 50 years ahead. The sort of stuff that came out was pretty scary. I might actually have some of it here.

CHAIR—Are you saying: build the case for change by articulating what the consequences are of no change?

Mr McARTHUR—Just basically what our friends said.

Ms GEORGE—Even if we were to adopt more sustainable principles in new land release, what do we do in an area like mine where currently you have 18,000 people travelling out of the Wollongong environs to Sydney—two hours, if you are lucky, on the train if it comes on time and just a little bit under that by car? Increasingly, you will find the car will not get you there within the two hours with the congestion coming into the outer suburbs of Sydney.

Mr McARTHUR—One way?

Ms GEORGE—One way, yes, 18,000 people a day. So, with the new land release, we can put in waste water treatment and make that a much more livable community, but what do we do about the existing stock of infrastructure that is clearly totally inadequate to meet the needs of

the existing population, let alone the new population growth that will occur? That is the dilemma, isn't it?

Mr Taylor—It is, yes. Retrofitting is incredibly expensive.

CHAIR—They need some leadership.

Mr Taylor—I really do not know what the answer is. I think Brisbane have not done a bad job with their urban renewal. They have done a pretty good job.

Ms GEORGE—No, they have done a good job from what we have seen.

Mr Taylor—But it takes some pretty drastic measures to do that. It is not as simple as saying, 'Let us just pull down the old housing stock and put in new housing stock,' because if you increase the density then there is a fair chance your infrastructure will not have the capacity to cope with that increased population.

Mr JENKINS—Are there international examples of where they are meeting these challenges? If we look at the 50-year or 30-year horizon, in other places they have practically got to that, and there has to be this urgency. I am just wondering whether we have got into a false sense of security because of the vastness argument. We have just thought, 'We will just keep going. The sprawl has got plenty of space to go to.' In other places the sprawl cannot go anywhere because they have reached the limits.

Mr Taylor—But the problem too is that most people do not want to go everywhere else. The trend is from the bush to the coast, so you have that problem. In the United States, Los Angeles is usually given as the worst example. I can remember listening to a fellow from Boulder, Colorado some years ago talking about what they had done and how this was an absolutely wonderful place. They had capped the population and they had made it all beautiful and wonderful, but what had happened was the people who lived in what had been the slums of Boulder had simply moved outside the city boundary and created new slums a bit further out of town, and then they had to travel all the way back into town to work. There is no easy solution. Perhaps there have to be incentives for people to decentralise, to make it attractive for newcomers—and I think the government has tackled that to some extent—to go to places other than Sydney or Melbourne.

Mr JENKINS—So 30 years ago we saw Albury-Wodonga, Bathurst and Orange. The real problem now is the mindset they do not want to go. Even if we had got under way, people do not want to go inland. There is, I agree, the coastal thing. That has led to the sort of phenomenon Jennie has outlined that you just spread along the coast. Mr McArthur is lucky because Geelong is a little bit down the road, but the same sort of migration for economic purposes happens every day. And now it goes beyond Geelong in the Victorian sense and still they come into the CBD. So you are saying it really needs that intervention with incentives, big carrots and a little bit of touch-up with sticks?

Mr Taylor—It is probably a combination of all those.

Mr Palmer—Can I also say that you could provide incentives to relocate businesses, whether it is to relocate businesses to the Wollongong area, for example, because it is going to be cheaper for a firm or government office—

Ms GEORGE—The trouble is that we have the restraint of no industrial land or very little industrial land.

Mr Palmer—That is a good point, but whether it is possible—I am talking theoretically—to locate that into different areas—

Ms GEORGE—Yes, of course.

Mr Palmer—The number of people who go to live in Sydney and the idea of sending them to different areas has already been discussed. But the reason why people do not want to go to those different areas is that employment is not there and they are commuting long term. This is part of the broader planning perspective. This comes back to a governance issue where, if you are going to ask people to go and live in these areas, different levels of government have to work together to provide the incentives so that they do not have to commute two hours to Sydney every day or they do not have to commute an hour and a half from the outer suburbs of a particular city to do that.

Mr JENKINS—Can I pose a different type of question. I take it that you guys are also into communications infrastructure and IT—the provision of infrastructure. One of the things perhaps in Stewie's 50-year horizon—

CHAIR—Stewie is only 35, by the way. He has just had a hard life on the land, so he will be here.

Mr JENKINS—But, even in our 20-year horizon, whether there is going to be this trend towards the greater use of IT surrounding employment, it may have a greater impact than is thought on the actual physical movement of people for economic reasons. Is that pie in the sky or is it something that we really should be looking at?

Mr Taylor—No doubt you have heard of, and maybe even visited, the Springfield development near Ipswich, where I think every house that is being built there is being supplied with an Apple computer. That is probably an indication of partly what the future will look like. I think there will be an ever-increasing reliance on IT and so on. But it is going to be a pretty sad day, isn't it? Already you see even in offices where people sitting next door to each other will communicate by email. Even the telephone does not get used all that much and face-to-face conversation goes out the door. I think it is really sad. We will all finish up being funny-looking people who sit inside cupboards.

CHAIR—It would impact the economy too. For the services sector and the knowledge industry all that is quite possible, but Helen the hairdresser cannot set someone's hair over the Net or Barry the bricklayer cannot shoot a wall down—

Mr JENKINS—Then the argument is that because they are part of the services sector they are localised. They are not the people that are moving.

CHAIR—Good point.

Mr JENKINS—The example that was given to me was in Seattle where there is great controversy about supplying greater road networks and even the argument about public transport. The Silicon Valley aspect of their concerns was that you do it internally. They even put the argument that, by having an internal Internet system within a community, it actually brings the community together. They even tried to tackle this dislocation argument as well. It is an interesting notion. I am not wedded to it, but it is something that probably has to be thought through. We have had an argument about incremental measures on a whole host of fronts today and I think that we need to look at that raft of incremental measures as well as if there is a big bang around the corner to do it.

CHAIR—Gentlemen, are there any closing comments you are busting to share with us before we wrap up?

Mr Taylor—No, thank you. I think we have had a good hearing.

CHAIR—We have had a fair hearing today. I sincerely thank you for making time available and for the effort that went into your submission and keep up the good work.

Resolved (on motion by **Mr McArthur**):

That this committee authorises publication of the evidence given before it at public hearing this day.

Committee adjourned at 12.12 p.m.