



PRODUCTIVITY COMMISSION

**INQUIRY INTO BARRIERS TO EFFECTIVE CLIMATE CHANGE
ADAPTATION**

DR W. CRAIK, Presiding Commissioner
MR J. COPPEL, Commissioner
DR N. BYRON, Associate Commissioner

TRANSCRIPT OF PROCEEDINGS

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INDEX

	<u>Page</u>
INSURANCE COUNCIL OF AUSTRALIA (with INSURANCE AUSTRALIA GROUP): KARL SULLIVAN ALEX SANCHEZ DAVID WELLFARE ROB WHELAN	4-24
BYRON PRESERVATION ASSOCIATION: KAREN COLEMAN	25-35
COASTAL RESIDENTS INCORPORATED: PATRICK AIKEN	36-40
AUSTRALIAN PSYCHOLOGICAL SOCIETY: ROB HALL	41-47
WATER SERVICES ASSOCIATION OF AUSTRALIA: ADAM LOVELL	48-53
GOSFORD CITY COUNCIL: EDDIE LOVE ROBERT BAKER LOUISE PILKINGTON	54-63
PROPERTY COUNCIL OF AUSTRALIA: PETER VERWER	64-71
BRUCE THOM	72-78
NEW SOUTH WALES BUSINESS CHAMBER: SEAN MOLLOY	79-86
RICHARD WELLER	87-93
STANDARDS AUSTRALIA: ADAM STINGEMORE	94-96

DR CRAIK: Okay. We might get under way. Good morning, and welcome to the public hearings for the Productivity Commission inquiry into Barriers to Effective Climate Change Adaptation. My name is Wendy Craik and I'm presiding commissioner on this inquiry, and with me are Jonathan Coppel and Neil Byron.

The Productivity Commission received terms of reference for the inquiry on 20 September 2011. The inquiry terms of reference gave us two key tasks: the first was to assess regulatory and policy barriers to effective adaptation; and the second to identify high priority reforms to address barriers. We've held consultations with governments, businesses and other organisations and received 79 submissions prior to releasing a draft report on 27 April, and since the draft report we've received another 78 submissions, and we're very grateful to the many organisations and individuals who have already participated in the inquiry.

Following these hearings in Sydney we'll have other similar hearings in Canberra, Melbourne and Adelaide, with participants from other locations able to participate by phone or video conference. We'll then be working towards providing a final report to government in September. We'd like to conduct all hearings in a reasonably informal manner but I remind participants that a full transcript is being taken. For this reason, comments from the floor cannot be taken, but at the end of today's proceedings I'll provide an opportunity for anyone who wishes to do so, to make a brief presentation.

Participants are not required to take an oath but are required under the Productivity Commission Act to be truthful in their remarks. Participants are welcome to comment on the issues raised in other submissions. The transcript will be made available to participants and will be available from the commission's web site following the hearings. Copies may also be purchased using an order form from staff here today.

Now, to comply with requirements in the Commonwealth occupational health and safety legislation, I draw your attention to fire exits which are at the door, and evacuation procedures - can we find out so we can tell everybody, thank you. The toilets are just around the corner there. If anyone is here from the media could they identify themselves to Ben or Brad, thank you. Could I ask you to fill in - give your name.

Firstly, could I welcome representatives from the insurance industry. We've got the Insurance Council of Australia, Insurance Australia Group and Wesfarmers. That was the three companies, was it, or is Suncorp here as well?

MR SULLIVAN (ICA): No, we have the Insurance Council and Insurance

Australia Group.

DR CRAIK: Welcome, and thank you. Can I ask you to identify yourselves and your position for the record, and then if you'd like to give a brief presentation to start, then we'll start with questions. Thanks very much, Karl.

MR SULLIVAN (ICA): Karl Sullivan, general manager for risk at the Insurance Council of Australia.

MR SANCHEZ (ICA): Alex Sanchez, the general manager for economics and taxation.

MR WELFARE (IAG): David Wellfare, senior adviser, economics and policy, Insurance Australia Group.

MR WHELAN: Rob Whelan, CEO of the Insurance Council.

DR CRAIK: Thank you. Karl, would you like to make a brief submission?

MR SULLIVAN (ICA): Yes. I won't labour what's already in our submission, commissioners, but I'd just like to very quickly make five points and then some of my colleagues may have some additional points to make, and we'd be happy to answer questions. I want to say that the Insurance Council supports the draft findings as they've come out. We have offered particular responses to some of them, emphasising some issues we've had. But the five quick points really are that the insurance industry remains very interested in adaptation measures because they have a direct impact on the losses that the industry is suffering now from extreme weather. Those losses, if they continue, are going to drive premiums, and we have seen significant premium shift in the last 12 to 24 months, and there are no indications that those premium shifts won't continue at the current pace.

Adaptation to these events is something that the industry has seen over many hundreds of years. When insurance first came around for fire cover in cotton mills or for ships, we found that premium started to drive better practices to reduce those risks, and that analogy is equally true now to extreme weather and to climate change adaptation. Insurers are experts in assessing that risk, understanding it, pulling it apart and working out what drives it, and then putting a price on that.

The point I'd like to make there is that the industry is quite willing and is quite able to work with governments to help identify priorities for mitigation and where regulation needs to change in order to drive a better risk outcome for the community. The industry is quite opposed to any concept that starts to dampen or artificially reduce the price signal that insurance sends as a result of those risks within the

community. I think as some of the recommendations in the draft findings have pointed out, to do that removes a very key driver to make the community adapt to those risks in the future.

However, having said that, there is a short-term affordability issue for some in the community who are unable to adapt at the moment economically, so the industry would be supportive of the concept of a short-term, highly-targeted, means tested subsidy regime for those in a position where they simply cannot afford those protections that others can. We would stress that needs to be paid by those responsible for putting them in that risk position, and those responsible for mitigating or helping them adapt to that in the future. Those are the brief remarks I wanted to make.

DR CRAIK: Thanks very much, and thank you for your submissions which have been very helpful and detailed, and all the information you have provided in them has been very useful. Just before I move on to questions to let you know the evacuation area is the park on the corner of Crown and Fitzroy Streets. You people probably know where it is better than we do, actually.

If I could ask, firstly, what evidence is available to show that governments have under-invested in disaster mitigation in specific places? Can you give examples? I mean, we are a bit aware of the Roma and Suncorp issues. If you've got any details on that or any other issues we'd be interested in hearing of.

MR SULLIVAN (ICA): Well, I think there's two layers to a response on that one. The Emerald and Roma are really the first material examples that we've seen where insurers are willing to entertain covering new risks in those areas. It is the tip of the iceberg though. There are other areas, particularly in Queensland, that are in dire need of mitigation. What we're seeing in those areas is heightened premiums to address that material risk. You can say the same in every other state though, but it's those states, particularly with higher flood problems, where mitigation can reduce risks relatively quickly where we're seeing the physical manifestation of that.

In other areas though we're seeing a lack of mitigation in regulation through building codes and through land use planning. Some areas are getting that very right, particularly in some of the coastal regions along New South Wales and Queensland, the local councils have quite appropriate land use regimes, but the council immediately next door may have something that's totally inadequate. As insurers it's very difficult to balance that nationally and come up with a consistent pricing regime.

The other part to the response I'd like to make on this though is that even where mitigation has been in place in many of these locations, often we've found that it's

not maintained. It can be quite difficult to identify who owns the mitigation and who operates it in an emergency. One of the first things that you'll see, particularly during a flood, where there's a flood levee, is that they will evacuate everybody behind the flood levee because they confidently expect the flood levee to fail. That does not leave an insurer, who's covering the risks behind the flood levee, with a warm and fuzzy feeling regarding the risks that they're covering there. There's no program for auditing these or maintaining these, or making sure that the very hefty infrastructure spend that's been undertaken is maintained for 20, 30, 40 years, the life of this infrastructure.

DR CRAIK: Okay. You mentioned that some areas in New South Wales were getting it right, some councils in New South Wales were getting it right. Can you give us any examples of the ones that you think are getting it right.

MR SULLIVAN (ICA): When I say "getting it right", there's no council that has a golden set of rules, and I think my point there is the rules around land use planning need to change over time as the risks change. It needs to have that 50 to 80-year window, the average lifespan of a property, to get that right, but we have been working fairly closely with the Coastal Councils Group in New South Wales who are looking at those land use planning regimes going forward. They're very difficult issues that they're grappling with there as you'd be very aware.

We're seeing other areas, for example, the Brisbane City Council's regime around land use planning. The legacy issues that they're dealing with, how they're communicating those issues through to people, and their buy-back program for those areas that are just at such extreme risk that they can't mitigate them any other way other than turning it into a recreational area. I think there's a great deal of opportunity for setting up a best practice regime right across Australia where councils could pick the right regulatory measures to make sure that their community with their particular risks are enjoying a sustainable insurance future.

DR CRAIK: Okay. Can I ask what effect the NDRRA arrangements have had on disaster mitigation by state and local governments, and do you think the betterment provisions within the NDRRA are effective or not?

MR SULLIVAN (ICA): Fundamentally, those recovery provisions, that mutual arrangement between the states, doesn't seem to have a lot of impact on the insurance market itself because we don't insure the infrastructure for government, except at a very high level.

DR CRAIK: Okay.

MR SULLIVAN (ICA): The particular relief and recovery arrangements for

individuals, so the handing-out of \$1000 here or \$800 there to individuals, I think government has spent a lot of money on that, and I think the quantum of that, compared to what they're spending on mitigation tells the story by itself. It's a mere fraction of what they spend in handouts spent on actually mitigating the problem away in the first instance, which I think we've covered that in our submission to some extent.

The betterment provisions though, I'm not sure that the betterment fund or the betterment side of the provisions has actually been exercised in any great way by any local council or any grant or provision at all and that is a shame because there is infrastructure that's being constructed as it was before the event and so it's simply being set up to suffer the same loss in the future.

DR CRAIK: Certainly that's the point that councils have made to us and they're a problem in the description of things that the Commonwealth is prepared to pay for from the council's point of view, using council staff as opposed to bringing in contractors which councils claim are more expensive. The Australian government, as you know, has set up this national flood risk information portal. I guess we'd be interested in your views on it and be interested in the sort of information you think should be included on it. I guess we're wondering whether it's going to overlap usefully or not with the insurance industry's flood information database, and I suppose one might wonder why we have two of these, rather than one.

MR SULLIVAN (ICA): I think there is a need for a government portal, without a doubt, so our database, the national flood information database, relies on government flood mapping being put into it in order to get an underwriting product out. That underwriting product is not necessarily suitable for the average householder to use to assess their own risks. It's very much for actuaries and underwriters to use. Its critical point of failure is the availability of government flood maps. Right across Australia we have large areas where we understand there is a flood risk, but we don't have a particular flood map to assess the precise details of that. Underwriters are left with little choice but to prudentially or defensively price those areas because they simply can't put their book at risk of that event.

DR BYRON: Is that because the flood map is not available, it doesn't exist or they're not public?

MR SULLIVAN (ICA): Look, it's a mixture of responses. When we speak to local governments, some claim that they haven't done the flood mapping for that area because there's no requirement from the state to have done it. Others claim that they have done it and that it's simply not available to insurers or to members of the community because it's a product solely for the use of council. Others have done it, and in that group, we find that some have done it very, very well, very effectively,

it's publicly available, it's public information. Others have done it and it's quite aged or old or done to a unique standard for the area which makes its use far more difficult for the industry.

But to go back to the flood risk portal, we do support government efforts in that space. Some of the concerns that we have though relate to what mechanism would be used to sustainably and over the long term collect that information from local governments into a central repository and we do believe that some level of regulation or legislation is going to be required to maintain that, measures beyond goodwill. We certainly see there's a lot of goodwill around, as there always is post-disaster, but that tends to evaporate relatively quickly.

DR CRAIK: Have they been talking to you about - I mean, have attorney-generals or Geoscience Australia been talking to the insurance industry about flood risk involving you guys?

MR SULLIVAN (ICA): Absolutely, yes. We're on a couple of formal committees helping with the process and they have been talking to individual insurers as well. I think one of the most fundamental points apart from securing the data is what format is this delivered to the community. There are real issues with saying to somebody that, "You have a one in 100-year risk of flooding," because that simply doesn't tell them in a meaningful way what that risk is.

DR CRAIK: "There was a flood last year, there won't be another one for the next 99 years."

MR SULLIVAN (ICA): There tends to be a very strong community assumption around that. If you express it though in terms of over the life of your mortgage for the property, if you have a one in 100-year risk and you've got a 30-year mortgage, you've got a 30 per cent chance of suffering flooding some time in that time, it starts to put it in a more realistic fashion. I think ultimately the only way to really deliver key flood risk information to property owners is through a price signal because they're being charged on their insurance and through visible mechanisms, so signposting in communities, literally showing the brown watermark where things got to; meter box posting next to the pest inspection, a certificate saying, "This house is at extreme risk," and mechanisms like that. Some councils do that quite well. Brisbane City Council again writes to all of their constituents with the flood risk and stipulates again, "You have the risk, here are some things you can do about it," putting the onus back on property owners.

DR CRAIK: It seems in some places, where information I guess on title risk is indicated to constituents, it leads to quite an uproar in the local community itself and then the council withdraws any action in that area as a response to that.

MR SULLIVAN (ICA): Yes, I think in the short term nobody likes to learn that they have bought a property that is exposed to some level of risk in the future. Unfortunately the alternative to not tell them just leaves them exposed and at risk.

DR CRAIK: Okay. You have a national flood information database; do you have the same sort of thing for other hazards? Does the insurance industry have the same sort of database for other hazards nationally?

MR SULLIVAN (ICA): We have different databases available in the insurance community for that use. The national flood information database is something that we collectively worked on. The other datasets are things that have been commercially produced and people can buy from those commercial providers. There are databases for storms, cyclones, bushfire and earthquake.

DR CRAIK: Okay. That's all insurance information. Are you aware that there's broad-scale databases available for the public? I mean, bushfire, I know, is probably indicated to people and people who live in cyclone-prone areas generally sort of know, but storms? I wonder if - - -

MR SULLIVAN (ICA): We don't find that that's delivered by any particular agency in any great depth, the problem there of course being that while you can get microclimate issues in mountains et cetera, storm is something that's fairly universal right across Australia.

DR CRAIK: Okay. One of the things we talked about and asked for further information in our report, and you've mentioned it, is the notion of trying to get information to households about the risks of the hazards that they face and we sought feedback on the notion of putting them on rates notices, property titles, rental contracts, things like that. You've alluded to that. One of the responses that we had to that in the submission was that that information can change, as either circumstances change or as the information becomes of better quality, and if that information is put on a document like a property title, it's very difficult to change it - you know, once it's on the property title, trying to change that information. So I guess the question is what's the best way? Do you guys have a view about the best way to get this information which can take account of changing circumstances or better information availability or - - -

MR WELFARE (IAG): I mean, the conveyancing process does take account of changing circumstances if, for example, you were - Department of Main Roads or whatever it's called these days - affected. Once the state government then removes the plans to put a freeway through that area, they then inform the residents that no longer is that particular property subject to DMR, so therefore that does eventually

go on the conveyancing documents. Similarly, if a property is subject to flood and the councils, state government undertake appropriate mitigation strategies and no longer that property is affected, that should appropriately show up on the new titling document. Given properties only sell every seven to 10 years, they don't sell every 12 months, it's not as if it's going to be an administrative nightmare for councils to do that. So there is a process in place that when circumstances change, conveyancing documents do change to reflect that change.

DR CRAIK: Is that nationally?

MR WELFARE (IAG): I'm not sure whether it's national, certainly in New South Wales it is.

DR CRAIK: Okay.

MR WELFARE (IAG): Similarly with mine subsidence in New South Wales, it's part of your conveyancing process. You get a DMR certificate, you get a mine subsidence to say whether your property is going to subside or not, and then that changes if circumstances change.

DR CRAIK: Okay.

MR SULLIVAN (ICA): I think, as David has said, there are different approaches from state to state on this, some of which are quite reasonable given that they face very different levels of risk and different types of risk. It might be a useful segue though into one of the possible long-term solutions around disclosure of risk and understanding of risk is capturing all of that information again, so not just for flood but for the other hazards, and embedding it inside a national property dataset that's available to all. Australia is quite lucky in that we have a geocoded national address file, something that's maintained at significant expense, so that insurers and anybody else dealing with the property market, when they're talking about a particular address, they all know which one they're talking about; some of the rough metrics around that particular property, its size, its location its altitude and things of that nature. I think there's a great deal of scope in Australia to expand out the information that's available against that. You might include in that a reflection of the risks that are recorded on title for that particular location. That just then fosters an environment where anybody and everybody can start to access information for an area, rather than having to go to the difficulty every time of getting certificates or getting maps or developing their own information.

DR CRAIK: So who maintains this national geocoded database?

MR SULLIVAN (ICA): It is government that maintains it, the PSMA, the

mapping authority in Canberra.

DR CRAIK: I wasn't aware of it, nor am I aware of the PSMA, but we'll find out who they are. Thank you. Is there any empirical evidence of the effect that government assistance has on the uptake of insurance by households?

MR SANCHEZ (ICA): Empirical evidence. Here you mean the moral hazard question.

DR CRAIK: Yes, that's right.

MR SANCHEZ (ICA): The moral hazard question of government assistance and the like.

DR CRAIK: Yes.

MR SANCHEZ (ICA): We did look at this a few years back and we actually did a very preliminary, scratchy piece of work with Access to try and test this moral hazard question. The short answer is it's not as bad as people think, and when you think through the logic and understand it, the biggest loss is to property losses, and none of the arrangements touch on that. They're essentially short-term adjustment mechanisms for families for the absence of assistance in the private sector. The arrangements don't go to compensating for property loss - large-scale property loss. To that extent it doesn't crowd out the private sector insurance.

As you probably know, following the Queensland floods, there was a review of the national disaster arrangements, and in particular the moral hazard question of the states, and I think that ended up landing in the right place and the measures that were put in place, which is almost before you qualify for the assistance - or the states qualify - you have to demonstrate that you have taken all possible steps. My last look at this was several months ago but there were some issues with the reports that were provided by some of the states as part of that process, but I think that's teething problems more than anything, but I think that part of it is pretty sound.

The short answer is, yes, of course we remain concerned about crowding out, prima facie, the fact that the assistance is very targeted and very small, and doesn't go to compensating for large-scale property losses. The truth is that the moral hazard question is probably not as large as we'd like to think it would be.

DR CRAIK: Is that scratchy piece of work you've got access to available?

MR SANCHEZ (ICA): Yes, it was scratchy because we tested it first before we went any further with it, and Treasury has been given it as part of the NDDRA

arrangements, so I'm happy to provide it to the commission.

DR CRAIK: That would be great if you could, thanks.

MR SULLIVAN (ICA): I might also add there that even though we don't see a marked change in behaviour because that assistance is given, there is a very strong temporal effect that we see post-disaster. We get quite a few calls and comments to us from those who are insured, asking why is it that because they're insured that they don't get access to the \$1,000 or the \$800 handout from government. Why are they being penalised because they've done the right thing but somebody else is being assisted. Alex is quite right, they're not being given the assistance to the extent that they're going to be able to replace their loss, but there is that short-term impact that occurs there, and I think it can't be forgotten that people who are insured still have a loss to deal with, regardless of how much they're compensated after their insurance, so they have an excess payment. There are going to be things that can't immediately be rectified for them. It's undoubtedly a community issue. Does it make people change their mind about paying for a premium the next year? Absolutely not, but there is a short-term issue there.

MR SANCHEZ (ICA): Karl is right. I think the best examples were how it was treated differently with the two recent disasters. Following the bushfires in Victoria, the recovery authority had a world view that said that if you had insurance you weren't entitled to the assistance that government provided, and that did cause a schism in the community. They retreated from that position in the end. The access work looks at this because it says, "What is the sort of assistance that is available to people irrespective of whether they have private or public cover?" In the case of the bushfires, many of the assistance measures related to demolition recovery of items and things like that. It could be argued that there is a public health benefit in doing that; making sure this stuff is not lying around, composting and the like.

The Queensland case took a very different approach and the assistance was universal. It is in the application of these things post the event that you'll often find a problem.

DR CRAIK: I guess the political pressure at that time is quite strong.

MR SANCHEZ (ICA): Yes, that's the rub.

DR CRAIK: Have you developed any new products to help households or farmers or other businesses to adapt to climate change, like insurance linked to rainfall, temperature outcomes or products for low income households? We've heard of Western Australian farmers talking about that sort of semiparametric product - wheat and things.

MR SULLIVAN (ICA): Yes. The market itself adapts as the market changes there. As more consumer demand comes on line for particular things, early adopters in the industry will start to develop products for that. Are there products right now? There are products for low-income families, for renters who have not much more than the bed and the television to cover. At the upper end, in the farming communities, there are some absences of cover in that space. We did do a piece of work twice with federal governments over the last decade around multi-peril crop insurance, and how do you start to help a farmer recover, regardless of what's caused his loss. That's come out several times. I think indeed the Productivity Commission did some work on that as well, but it's simply not economic to do so, and the moral hazards are quite great.

The parametric products are quite interesting. Some state governments have started investigating those in greater detail, simply where instead of waiting for a loss to occur and having to define the loss, measure it and then compensate for that particular loss, setting those parametric values around the weather incident itself. It has worked quite well in disaster prone countries elsewhere, where they have high infrastructure losses and low capacity to actually deal with it quickly. Simply setting the metric around if a cyclone or a hurricane occurs, and the wind gets above 200 kilometres an hour, there will be a payment of \$25 million made the following morning, so there's no delay in the recovery action. The government, instead of having to take that \$20 million and replace the actual loss, are free to use that \$20 million for whatever recovery activities are then needed. There might not have even been a loss; it's simply because the parameter was actually triggered that a payment is made.

I would expect that globally that sort of product will continue to grow and there's undoubtedly a case for it in some jurisdictions here in Australia that are more disaster prone than others, to consider that as in the mix for their insurance arrangements.

DR CRAIK: Are you seeing evidence of that? Are Australian governments looking at that more? Even down to local council level, are you seeing that sort of thing or not?

MR SULLIVAN (ICA): No, I would have to say that the government approach to insurance or private insurance over their infrastructure is still quite old school, if I can put it there. It's about insuring a bridge or a pipeline or a particular asset against a limited number of hazards. We haven't seen any governments yet in Australia contemplate a more parametric approach to these issues. But the product is available, it's globally sustainable - and I think that's an important point - that has the backing of the large reinsurers, the reinsurance industry, because it's quite easy to

measure the risks and project the losses going forward.

MR SANCHEZ (ICA): If I can just add to that, I think the changes to the NDRRA arrangements that arose - with the states in particular - provides a mechanism for them to go down that path. I think whilst they're suffering teething problems at the moment in terms of the auditing process and looking at the insurance arrangements that the states have for their own assets, you can use that mechanism in the arrangements to get them to do more and to be more innovative because the thing is now in place. At the moment you can argue that the states are getting used to it, and the extra supervision and, if you like, the supervision of their insurance arrangements, but you can see a future where you could use this process to get them to be a little more innovative if you want.

DR CRAIK: Okay, thanks. The IAG submission attached a survey of insurance, and one of the aspects of it that I thought was quite interesting was that despite the apparent increase in the number of natural disasters we've had in Australia in recent years, the percentage of people under insured or not insured seem to have remained about the same as a decade ago. Does that surprise?

MR WELFARE (IAG): It was a surprise, particularly given also the financial literacy activity that's gone on in that last 10 years. It did surprise us. We did that first survey in 2001, and then one of the reasons we wanted to update it was because of the spate of natural disasters to see whether it had changed, but it did indicate that perhaps more effort needs to go into financial literacy, and obviously there is that information gap. What did come out of there and what was reconfirmed is that it's not owner-occupiers that's the major problem, it is the renters in Australia that's the major concern.

DR CRAIK: Because they don't insure contents?

MR WELFARE (IAG): Because they don't insure contents. I mean, renters don't have to insure the building, of course, only the landlord does that. But one aspect that perhaps could overcome that lack of information or lack of financial understanding is - to touch on your point earlier - to actually have some sort of information brochures attached to rental agreements through the various rental bond boards across the country. It's easy obviously to do that through the conveyancing process when an owner-occupier or a landlord purchases a property, but it's probably a lot more difficult for the renter.

One of the reasons renters obviously don't see the need, or in some cases don't see the need for insurance - to touch on Karl's point - is they have the bed and the television and that's it. They think, "Well, I've only got \$10,000 worth of contents, it's not worth my while." But the actual household with three or four people may

have \$100,000 worth of contents, and if each of those decide that they're under insured or not insured - so it was a surprise. Basically what it means is we obviously have to put more effort into explaining the benefits of insurance.

DR CRAIK: Yes. In the Suncorp submission there were some comments about the whole issue of communities that live on the coast, and the risks of coastal inundation and erosion on the coast. My first question would be, do you think the insurance industry will ever develop a product for coastal innovation, storm surge - or maybe do they have it now - but, secondly, Suncorp raised the issue of governments consulting, perhaps having some kind of consultation process with banks, developers and insurance companies, because those groups are always assessing the risks on those places because they're providing financial services, I guess, one way or another to those people. Do you have views about that and how that might be usefully or practically done?

MR SULLIVAN (ICA): I think the industry would welcome an opportunity to participate in a forum like that to look at how that risk might be addressed into the future. A gradual sea level rise, and the impact that could have or the financial loss that could have on a property, is something that's not contemplated under general insurance policies right now. Some insurers have looked at it in the past to try and see whether they can develop a product for it. It would have to operate in a very different way to a single year general insurance policy over the property. It's more akin to a life insurance policy for the property. So it requires a different mind-set to address it.

The fundamental thing though that's required is harmonisation or one national view of what those risks are and what the time scale for those risks are. Travelling from council to council, or jurisdiction to jurisdiction right now, you will have a great deal of variance in what their prediction for the sea level rise risks are over certain periods of time, and the industry - just like with flood risks from rivers and creeks - needs data. They need a consistent world view of what those risks are and where those flood extents get to over time. We would welcome that dialogue. It is a difficult product to start working on, but all products are when you first start to address them.

I should also add, you mentioned storm surge. It's quite a different risk. Of course that is something that can be contemplated and is contemplated by some insurers now in their general insurance policy, so they can work out a probability for the event occurring and then look at the geolocation of the property and assess a risk. That cover is available from some insurers now. I would expect that over time that would become increasingly available, but certainly right now every property in a coastal area in Australia can access that from an insurer if they need to, but not all insurers cover it. It's a matter of finding an insurer that will offer that particular

product to you. Six years ago, insurers did not offer flood cover at all, so the industry undertook a program to work out how we could cover that. It all came down to data and standard definitions.

I think the industry has been quite successful in meeting market demand in that space by now, having options on the table for householders with a flood risk to go and purchase it from a multitude of different companies at different prices with different inclusions. It is easy to contemplate that for these other inundation risks that that's work that could be done, but it's certainly not stuff that could be done overnight. It's not even a five to 10-year undertaking. It would take a considerable amount of time and movement into regulatory space to make sure that we're all talking about the same risk at the same property level.

DR CRAIK: What's the percentage of properties now covered by flood insurance?

MR SULLIVAN (ICA): 88 per cent of policies purchased for home building cover currently have flood cover in them. Some of those are sub-limited though. About 12 per cent of those are sub-limited which means that the person can only claim to a capped limit within the policy which does suit some home owners because the flood risk they face may not be catastrophic. It may only be a few inches above the floorboard or up to a metre depth, which typically is about \$60,000 worth of claim at the moment.

DR CRAIK: Again it might have been Suncorp in their submission, or one of the submissions suggested that mandatory business interruption insurance, like compulsory third party insurance, would be a good idea. Do you have views about that?

MR SULLIVAN (ICA): My colleagues can jump in at any time, but I think contemplating making any form of insurance mandatory needs to be very carefully examined for all the potential issues, the unforeseen issues that can come out. For example, we have argued against making flood insurance mandatory in all products because it leaves people - if they don't want the flood cover or they can't stomach the high flood premium component of it - with no other choice than to have no cover at all. This highly polarised situation where either you've got no cover or you buy the mandated level of cover that government says you have to have, can leave a large segment of the population in quite a difficult position where they may have to decide to not have cover at all.

DR CRAIK: Okay.

MR SANCHEZ (ICA): Far be it for me to quarrel with a submission from one of our members but - - -

DR CRAIK: Well, it may not have been, it was just I was reading something and I wrote a note down. But it may not have been - - -

MR SANCHEZ (ICA): Yes. Karl is right, one has to be very careful when you mandate anything because it sets up a regulatory apparatus on the side, and often the costs of that regulatory apparatus exceed the benefits of the actual measure. The other often, I think, misunderstood thing is that CPT actually insures the third party, it doesn't insure the individual.

DR CRAIK: The individual, that's right, yes.

MR SANCHEZ (ICA): Often, because it is a mandated policy, the assumption is that it insures the driver. I think one has to make that clear distinction that it doesn't. If you look at the behavioural economics side of it, it's on for "bad driver". "It's the other bloke." Well, if everyone had that view then no-one would buy it and that's why the measure is in place as a mandatory measure.

DR CRAIK: It probably wasn't Suncorp. I don't want to be inundated with 4000 letters from Suncorp. Do you guys have any questions?

MR COPPEL: I'll just come back to the comment you made in your introductory remarks. You spoke about your support for short-term measures that are targeted and time limited to address questions of affordability of insurance. Can you elaborate a bit more on what you mean by short-term measures?

MR SULLIVAN (ICA): Sure. I think - and not to emphasise the point too much - it does need to be very, very short term. There are a number of schemes operating in Australia now to provide assistance to those low-income, high-risk families. I know Rob could jump in here, if he would like, around this, but I think any one of those schemes can start to provide a mechanism for that short-term relief. It might be that at a low-income threshold and at a certain risk level, a property owner qualifies for a direct subsidy payment from government to meet their insurance demands. It shouldn't come directly to the insurer, it should be a property owner responsibility to use that money for an insurance mechanism, but it absolutely has to only operate while government is seeking other measures to reduce the risk there, either through mitigation, buy-back of the property or other steps to help people reduce the risk level there.

After five years of receiving a subsidy, the person may no longer need the subsidy because either the property is being resumed by the government, mitigation has been in place or some other mechanism, for example, as they do in the States, requiring houses to be elevated, have intervened in the level of risk and reduced the

problem. A short-term subsidy can quickly become a long-term answer to all of these problems while government can keep putting in the money. If the government though has to also fund mitigation there's going to be a great deal of appetite to actually terminate those subsidies by getting the mitigation right. Rob, you've looked at a couple of schemes in particular.

MR WHELAN (ICA): Yes, I think the industry recognised that what we are arguing in terms of a fix for this problem is long term. By definition, if you're going to put in large mitigation measures, new planning procedures and rules, building procedures and rules, they're going to take a long time to come into effect. There will be people who are at the high end of exposure to some of these perils - flood in particular - who are perhaps unable to bear the full price of the risk that they actually do bear.

We recognise that there needed to be a mechanism that would actually be able to provide for those people in that period of time until these longer-term measures start to take effect, and the overall impact of these perils is reduced. We argued that a form of targeted subsidies would be perhaps the best mechanism to do this. An example that we used was, say, the PBS where direct subsidies are made to those who need medications and they have to qualify to get those subsidies on a number of criteria, they're very targeted. The difference we made in our argument versus, say, a PBS is that as the Australian population ages, the PBS costs go up; whereas if you targeted these particular subsidies and made those responsible for the mitigation work, such as governments and councils and so on, responsible for the subsidies, the proposition is that they would work towards mitigation to reduce the cost of those subsidies.

The economic signals are in the right direction, so these subsidies would naturally reduce over time as the appropriate mitigation - planning, building codes et cetera - came into effect and start to reduce the overall impact of these perils. We thought that was the best mechanism over the short to medium term to breach the gap for those who are in difficult circumstances, both in terms of their exposure to risk, and also their economic position to be able to afford the costs of appropriate cover. There were other mechanisms that were discussed, such as pools and so on, but we thought they have the propensity to distort the marketplace. We think it's very important that the industry be able to put forward clear pricing signals into the marketplace - this was one of the fundamental propositions we had in our submission - because in the absence of those, distortions start to occur.

Perhaps one of the best examples you can see of that occurring is in the US where they used a subsidised scheme to be able to support flood victims in various states, and all that did was create more properties in high-risk areas where that scheme is now \$19 billion in the red and getting worse, and the flood risks are

calculated at about half the actual risk level. If you look at those sorts of schemes, we said, "Do not go that path because someone will have to pay and ultimately it's the taxpayer." We thought a more targeted system directed at those most exposed and most unable to support the cost of insurance would be a better mechanism to use.

DR CRAIK: Has anyone taken it up? Has any government done that, that you're aware of?

MR WHELAN (ICA): Not that we're aware of. I mean, there's interest but I think there's a reluctance. This is what Karl was saying, it shouldn't go to the industry, it should go to the property-owners, but to some extent it's seen as a subsidy to the industry. There are controversial issues about government subsidies to industries. A good analogy is the tariff system: if you maintain high levels of tariff you encourage, in effect, inefficient industries. We've worked over many years to reduce that, to bring innovation and efficiencies to our industries, and we have. If you create flood pools, then all you do is create a protection zone for inappropriate behaviours. You get more buildings put into more risk areas, more people at risk and the costs accelerate over time.

We wanted to put an alternative proposition which had the economic drivers directed in the right direction which encouraged appropriate behaviours which actually mitigate against the risk over time. We thought that was a better proposition. The uptake on this idea: limited.

DR CRAIK: Is it done overseas, do you know, anywhere?

MR WHELAN (ICA): I'm not aware of it, no.

MR SULLIVAN (ICA): Most of the overseas arrangements operate around a pool, and most commonly with the sorts of outputs that Rob has described there. They're very inefficient and it just promotes further inappropriate development.

MR WHELAN (ICA): Whilst it's a large number of properties, as a percentage of properties it's not very many. It's about less than 2 per cent at extreme risk, and then if you part that down to those who are in need of economic assistance, it would be even less again. So whilst it's perhaps in the hundreds of thousands of properties or property owners, I think that's a limited exposure. If you part that to the return on investment of mitigation works, that exposes the real returns for actually putting in mitigation. To us it had a lot of economic merit to it because it actually sends the right signals, encourages the right behaviours and exposes the true risks. Anything else starts to distort what the actual signal should be into the marketplace, around what the actual level of risk is. That's the one thing the industry can do is show you what the risk is.

DR CRAIK: In terms of things like mitigation structures, you mentioned, Karl, they're often put up and then we might have a drought for 10 years and so nobody is worried about flood mitigation structures and whether they're okay. The insurance industry's concern that those people behind a flood levee are evacuated when the flood comes up because of concerns about the levee breaking down. Can you write into policies those sorts of things - measures about monitoring and maintaining and those issues? Is it possible, because it always seems to me that that is a very real danger in this country when you have a few years of flood and everybody reacts and does a few things, and then we have 10, 15 years of drought and so everybody forgets about floods and we're onto droughts.

MR SULLIVAN (ICA): It is possible, through the National Flood Information Database to include - and we do, for some states - the existence of mitigation infrastructure. It's very binary though; we either say there's infrastructure in place or there's infrastructure not in place, we don't have a quality assessment over how good that infrastructure is. That's a path we're starting to go down though, but there is a lot of work involved in going out and looking at mitigation infrastructure. Some of the preliminary work that has been done on this for us has indicated some quite startling things. If a flood levee has been in place for 20 years it's very common to find - if you walk along the top of the levee - an entire section missing where a farmer has pushed through an area for his cattle to move from one area to another, or even more formal infrastructure like a rail line or something else has been put through the middle of these things.

I think the emergency services who have to come along and operate these things in anger, often with only one or two days' notice, are really hard up against it in this space. They have to go in and fill in essentially all of these holes and issues. That is very nearly impossible for the insurance industry to keep track off and keep monitoring at a national level. What's really required there is some very hard-edged regulation that requires an owner to be nominated, an actual program in place that has to be funded for maintaining that infrastructure, and penalties for those who go and disrupt the value of that mitigation infrastructure. The farmer who pushes a hole through the levee embankment - some of these things are only a metre high, and if they're not well maintained you could forgive some farmers for even acknowledging that it is mitigation infrastructure, but there needs to be a penalty there for doing that sort of thing; in the same way that we have "dial before you dig" program so that we don't disrupt communications and underground services. The same sort of thing needs to apply in the mitigation environment. That is absolutely a government responsibility.

DR BYRON: Can I follow up on that particular point. It seems to me that the case you're making is that the long-term solution to affordability of premium is disaster

mitigation works; more, better and better maintained. What's nagging in my mind is, why isn't this investment in the appropriate scale being done? Is there some systemic bias in the intergovernmental arrangements that means that even if people conceded it's a case for building flood levees around Roma or Emerald, it's not in anybody's interest at the moment to do that.

If the case for more disaster preparation mitigation works is so obvious and so compelling, why isn't it happening and whose job is it to make it happen? Are there some institutional wrinkles that prevent this?

MR SULLIVAN (ICA): An initial point I'd like to make is that disaster mitigation in the form of actual physical work is only one part of the mix of lowering the community risk.

DR BYRON: That absolutely has to be layered in with appropriate selection of the land.

MR SULLIVAN (ICA): And use of the land, and the building code. For example, old Queenslanders are a relatively good insurance risk even if they're next to the river because they would be constructed well. But to narrow it down to mitigation itself, I think from an insurance perspective the case has been very obvious for a long time, that there's more benefit in actually mitigating the problem away than trying to reserve the cost to pay out future losses.

Some elements of the government have acknowledged that. The previous attorney-general, for example, was very strong on the cost-benefit analysis that can be done, even at a macro level, between paying out post-disaster losses compared to the value of pre-disaster mitigation. I think now in some locations it has become obvious to those beyond the insurance industry. Why? Because the insurance industry is sending price signals about that. For example, Emerald and Roma - there are very active discussions going on there, as you might imagine, about mitigation. Why? Because the insurance industry has started to pull back from those area because the risks are just unsustainably high. Why isn't it obvious everywhere or, more importantly, why is it easy to get dissuaded from going down this path and doing mitigation? We believe the system is just too complex and too difficult to navigate.

The average local council who can see that they need funding to do mitigation infrastructure has to come up with one-third of the funding themselves. They have to put that case to their own ratepayers. That's an expensive proposition to do. There's a lot of flood mapping, there's expert reports. They then have to seek one-third funding from the state government. That's another round of justification cases and trying to seek one-third there. Both of those have to go to the federal government

and seek another third for the funding which is another layer of bureaucracy and difficulty. Once it gets to the national stage they're dealing with competing priorities from other states and other locations.

As we've said in the submission, we do see a need for a top-down review of how mitigation funding is applied in Australia and justified, and that's certainly a dialogue that the insurance industry is willing to sit down and join in with, perhaps helping out the prioritisation. Where is the cost-benefit analysis the greatest to do mitigation infrastructure? Maybe that's a more fundamentally proper way to prioritise things, rather than trying to juggle these priorities between local jurisdictions and state jurisdictions.

MR SANCHEZ (ICA): Can I add, it's not all long term, obviously short term we have the taxation on insurance products, which you've raised in the draft. There's considerable application of that task going on right now. In Victoria they have announced the abolition of the statutory contributions formula from 1 July next year. New South Wales is on the path of doing that, releasing a discussion paper in the last week. You can envisage a future, and governments should be setting a timetable for the abolition of these things, by 2015, say. It's clearly feasible that if two state governments do that - New South Wales and Victoria - there's \$1 billion of costs out of the system, and that only leaves three and a half doing it, of reform. Now, that's a pretty cheap shout to do. These are short-term things you can do to 2015.

The other thing is, to go to the mitigation question, the fundamental question is who should pay, and ultimately what it is. Local government has available to it arguably the most efficient tax around, and that is land tax rates. The marginal welfare losses of a land tax are the smallest of all of the taxes around. There's an argument that says better targeted land taxes can be properly applied for these sorts of things, and with the capacity of - and there's clearly another signal. Then who ends up bearing the costs of the mitigation is the landowner or the property owner, the ultimate beneficiary of these things, and then that will be reflected in the asset price over time.

I think the nexus between funding and efficient taxes is something that policy-makers can turn their mind to much more explicitly than they have, I think, hitherto today.

MR WHELAN (ICA): I think it's worth saying that it is an issue that a lot of this is about time scales, and there are actions that we can take in the short term, but to your point, commissioner, one of the issues is we'll have a season of flood and that will be followed by 15 years of drought. To go to a local council and convince them that a \$15 million spend on a flood levee, which probably won't be used for the next 15 years, is a difficult thing to get across because they're constrained like every other

institution.

The thing you'll find this industry will be doing more of is engaging more with government at all levels to convince them that these sorts of activities are fundamental as infrastructure across the country to reduce the costs of these perils, because Australia is subject to them. They will continue, that is absolutely sure. The fact that they may get worse is a high probability. We can't say for certain but it's a high probability. One of the key factors that goes to the costs of these events is the number of assets put in harm's way, basically the amount of expansion that we have, urbanisation and what have you, which is not necessarily well planned.

So our role I think to some extent is to engage more, to highlight these issues. Now, we're doing it through pricing mechanisms, we're doing it through engagement with government. We're trying to put forward different propositions to make this whole transition more efficient, but it is an issue that the industry I think is taking on more aggressively. To take a point, the conversations around mitigation in Roma and Emerald didn't really get very far until one of the largest insurers up there said, "We're not writing any more business in those areas until you do something about it."

DR CRAIK: Has that prompted any response, a broader government response, in terms of mitigation strategies generally, like the task force you're referring to, Karl, the possibility of a task force?

MR SULLIVAN (ICA): It has assisted with moving the dialogue forward. Has there been anything formal put in place? No. I think that's what we're suggesting, that there does need to be some more concentrated approach to this issue and a prioritisation of where that needs to occur.

DR CRAIK: Have you proposed that to the federal government?

MR SULLIVAN (ICA): We're in discussion with them about that at the moment.

DR CRAIK: Okay. Any positive response that you can share with us?

MR SULLIVAN (ICA): I would have to say there's a great deal of goodwill around this and all parties recognise the need to fix this, that something has to be done. But to go to Alex's point and Rob's point, these are not small sums of money for local government to deal with, and local government is always the person at the end of the chain who seems to get fitted up for the worst of these bills. So I think having that dialogue is going to be very difficult indeed. The first part of this problem needs to be identifying where are the areas on the map that are coloured in red where insurers might next be saying, "We're not going there any more, that's too expensive," so where might mitigation actually be well placed.

DR CRAIK: Okay. Can I thank you very much. Thanks very much for your input today and your helpful comments and thanks very much for your submissions. We really do appreciate the effort that you guys have put in in responding to this inquiry, so thank you.

MR SANCHEZ (ICA): Thanks for having us.

MR SULLIVAN (ICA): Thank you.

MR WELFARE (ICA): You've very welcome.

DR CRAIK: We look forward to seeing that scratchy piece of work.

MR SANCHEZ (ICA): My friends at Access still thank me for saying it was a scratchy.

DR CRAIK: I know, just like Suncorp will have a go at me on that. Thanks very much.

DR CRAIK: Our next participants are King and Wood Mallesons, Karen Coleman. Hi, Karen, sorry we're running a bit late.

MS COLEMAN (BPA): No problem.

DR CRAIK: Karen, thanks very much. Welcome here today and thanks for your submission on behalf of the Byron Preservation Association. Could you for the record give your name and position and if you would like to make a brief presentation, we'd be happy to hear from you.

MS COLEMAN (BPA): My name is Karen Coleman. I'm a partner at King and Wood Mallesons. I act for various coastal property owners up and down the New South Wales coastline. I made this written submission on behalf of the Byron Preservation Association, drawing on experience from various property owners up and down the New South Wales coastline.

I was interested listening to the previous one which had a focus on dealing with flooding, whereas my focus is looking at what's happening on the coast. The question I thought would be good for discussion today is that the last three years in New South Wales have been a very volatile period in coastal protection, both at the state level and at the council level. I think it might be instructive to ask what lessons can we learn from what's going on here in the last three years in New South Wales. What might that tell us about what are the barriers to adaption to sea-level rise if that does come to pass as predicted and threatens the whole coastline of Australia.

I mention in my submission that the Commonwealth has done work in what would be called the first-pass assessment of looking at how much both private property, state-owned property and infrastructure and commercial property is at risk. The numbers that they cite in that report are extremely large, in the billions of dollars, and show that in reality, Australia's economic wellbeing is bound up in the safe protection of the amount of private and commercial property infrastructure we have along the coastline.

So if we just look at New South Wales in the last three years, and as I say, it's a very volatile period, what's been going on? At state level, we have had at least 20 pieces of legislation or regulation or policies have been introduced or amended since October 2009, particularly in that run up to the change and election from October 2009 to March 2011. So what you first of all see is a complete labyrinth of legislation. I had sympathy with your report where you suggested it might be a good idea to get the states to actually list what their regulations are. To find out what is the law about coastal protection in New South Wales, you would need to consult at least 20 instruments. That, to me, first of all, is the first problem.

Secondly, what has come about as a result of those legislative changes is a situation in New South Wales where at the moment in major hotspots, recognised as erosion hotspots subject to trouble in storm-surge situations, there is no emergency protection plans in place at all, and the SES does not come. Now, people who I say this to, first of all, are in disbelief. I was at a wedding on Saturday night and I was talking to a man who came from the Victorian town of Nathalia and he was telling me that when the flood came there this year, he was part of the emergency response and he was telling me that in the night, working with the SES, were a thousand people at Nathalia, in the night at 3.30 in the morning, getting sandbags and putting them out. I was telling him that in the coastal hotspots, at Byron, for example, or on the central coast, which has four hotspots, the SES is not permitted to come and there are no emergency plans in place. He said he couldn't believe this. That's actually a common reaction. But the New South Wales storm plan says the SES has no responsibility. That's what the storm plan currently says.

So you then say if the SES is not coming - and why aren't they - who does it fall to? The Labor government introduced into the legislation a power for private property owners to do emergency protection which was widely condemned by every independent association - I've got the letters in my office - as being totally impractical. There are so many restrictions and burdens on that that no-one could use it. Just for example, the maximum height of emergency protection that a private owner is allowed to use is 1.5 metres and that is completely a waste of time in the major hotspots. So there's no effective emergency protection. What about the councils? They can produce emergency action subplans. Byron Shire Council has got an emergency action subplan and Gosford Shire Council, both of which say they are not going to do anything.

So we have a situation at the moment in New South Wales which is extremely dire. While the amendments were going through the Coastal Protection Act, the Liberal opposition labelled them the Coastal Destruction Act, saying that this is actually putting at risk our coastline. There are also amendments to permanent protection which put the entire burden on the individual property owner, not only to build that protection but to maintain the beach out to a level of 10 metres out to sea. That's what the act says that they have to do, which the property owners have reacted to by saying that's unworkable as well.

I think what has been lost sight of in all of this is that the front coastal property owners are actually protecting entire communities, and that concept seems to have been totally lost in New South Wales. I attach an article I had published in the Australian Law Journal because we did some historical research and it was very interesting to see that as long back as 1372, the English common law courts totally recognised that coastal protection is not a problem of the front frontages, as they

called them, alone, but whole communities are being protected by those front properties and that a focus that puts the entire burden and responsibility on those front properties is, as the English courts recognised, one that is actually a recipe for disaster because what if they can't afford to do that? What then happens to the community? An example of that is Narrabeen beach in Sydney which is recognised as one of the coastal erosion hotspots. Immediately behind those frontages is a six-lane highway. The main road goes from Palm Beach to Sydney. If those houses - if there wasn't effective protection - immediately put at risk is a six-lane highway, and sewerage infrastructure, electricity et cetera.

I think what other things I would make by way of general observation, what has been lost in the debate in New South Wales is, we're talking about protecting communities and infrastructure and our economic wellbeing. It is not a problem for the front properties alone. My second observation is that I think that leaving these problems to be decided at local council level is not a satisfactory way for this to be dealt with when looked at on a national basis. If you just look at northern New South Wales, you've got three councils at the top there, which is Tweed, Ballina and Byron Shire Council. Tweed Council is currently building rock walls to protect its community. Ballina Council, in the May 09 storm, had diggers on the beach putting sandbags down and doing everything to protect its community. In between is Byron Shire Council which is trying to take down the existing protection for half of its community whilst protecting the other half.

Just there on those three you can see radically different approaches, depending on which shire you happen to live in. The conclusion that I would draw is that we need to pull back the local responses council by council to recognise that we're talking about Australia's economic wealth here, and protection of the coastline is a critical part of that, and - as you have suggested might be a good idea, I endorse the idea - we need some national principles, and I would suggest that we probably need some sort of expert authority to apply these principles to take it away from politics, like local council level, and give an expert power, commission, responsibility for the coastline, guided by some principles, and take it away from the politics of local government. Perhaps I'll stop there.

DR CRAIK: Thanks very much for that, Karen.

MR COPPEL: Karen, you raised one of the most challenging issues which is how to protect existing assets, and there are fundamental trade-offs between the assets that are privately owned and the assets that are publicly owned. One of the points you made is that the emphasis shouldn't be on those that have coastal properties alone. I'm wondering how you would balance protection of private property and protection of public assets, such as beaches and coastal assets. What sort of methods or approach would you use to adjudicate on that balance?

MS COLEMAN (BPA): Yes. What I think we need to have - we've been thinking about this a lot as we've been battling with these issues - it seems to me, when you get down to solving particular problems it needs to be a whole of beach or a whole of compartment problem; in other words, you shouldn't look at how should Mr and Mrs Smith be allowed to protect their property, you should say, "If we look at the whole township of X beach, that community, what should we do for that community?" So it needs to be a more holistic approach rather than focus on that particular frontage of those properties. Then what I think we'll be saying that one needs to have is a balance between the interests of Australia in the protection of its infrastructure and its built community, and the national environment and its beach amenity.

That needs to be looked at in a holistic way, but not in a way that says, "You can't have any protection if there's going to be any effect at all on the natural environment." I think that is not realistic given what has happened in terms of the built community existing and where it is, and the challenge that might be faced. I think the test needs to look at whole communities and work out what's a reasonable balance between those various interests that the community as a whole has. We're all interested in beach amenity and preserving Australia's natural beauty et cetera, but also we're interested in protecting the built community.

MR COPPEL: In some circumstances, in some areas, you can anticipate the science anticipates that the impacts of climate change are going to be very substantial, and there becomes a choice as to whether you mitigate those risks through infrastructure or you use alternative approaches. You would accept that this is an area that's very subject to climatic risk, and alternative options would include things like planned retreat and so forth. What are your views on these alternative ways of responding to the risks of climate change in local communities? Time limited development is another concept that's been put forward.

MS COLEMAN (BPA): Yes. I think that imposing planned retreat on the existing community of property owners who didn't buy with that expectation is a very difficult thing, particularly if protection is available. To deny people the right to protect their properties if protection would be available and would solve their problem is a very controversial thing to seek to do. If you've got land that hasn't been developed yet, hasn't been released, and you want to release that private land, then those sort of mechanisms seem fairer because people buy in the knowledge that that's the way it is.

But if you bought property that didn't have anything about that, then to say, "Well, you could protect your property but we're not going to let you," is a very controversial thing to do. Where planned retreated has at the moment sought to be

imposed is primarily at Byron and at Lake Cathie, and the commission has noted both of those as examples. But in the Byron one there's no suggestion at the moment that the existing protection, where it is, is actually working really well. The only problems at Byron is where there is no protection. What the council propose to do there is to take down the protection, then people's properties would become vulnerable, and then forced planned retreat on them. You can see how controversial that was.

As I said in my submission, that strategy was going to involve roads, bridges, railway lines - like, there was a huge amount of property and infrastructure which was going to be lost as a result of a policy, via council, to impose planned retreat by taking down protection. I think one has to be very careful about how planned retreat is being used or proposed to be used in existing communities. Lake Cathie is another example where there's only about 18 houses in the front-line, and they're protecting a large number of houses behind them. People, when they talk about planned retreat, in my experience do not take the holistic approach that I was talking about earlier, by saying, "But what happens if we do that?"

At Byron, if you take down the front properties, the sea can join up with the creek behind it and create this huge mass of water which will then threaten the whole of northern Byron. One of the experts to whom I was talking was saying that was actually an intergenerational issue, that by force of doing that you create a huge problem in the future for the next generation to work out how to protect the whole of northern Byron because you let that front-line of protection go.

That brings me back to talking about how one needs to look at this from a whole of community approach, not just whether those front properties should or should not be protected.

MR COPPEL: You mentioned the example of Byron which is removing or abstaining from further investment in mitigation work, but in cases where there is mitigation infrastructure put in place, and that mitigation infrastructure benefits largely private property owners - they have benefits for private property owners and benefits for the community - what sort of distribution of the costs of that mitigation should be borne by the private property owner? How would you determine the allocation of those costs between the private property owner and the local community?

MS COLEMAN (BPA): I think that one actually can't go past the approach that's in the English common law cases which is from 1372 - it seems phenomenal for one thing to trace that back - the approach they have taken is to say, "Who is benefiting from this?" That's the approach that the English courts have taken. "How much of the community is benefiting from this, and all of those people should pay for it." The

fairness of it is very evident, but what those cases also noted was that if you don't do that - that is, if you put the whole cost on the front owners and they can't afford it - then there's going to be damage to a much wider group because the frontages were given too much of a burden which they couldn't meet. I think that's the danger we face in New South Wales at the moment.

There's a case in 1598 - a little bit of history here - where the judge said that it had to be everyone who benefited. He said:

If the law should be otherwise, inconvenience might follow. Perhaps the rage and force of white water might be so great that the value of the land adjoining would not serve to make the banks, and therefore the statute will have all who are in danger and who are to receive benefit by the making of the banks to be contributors.

That holistic approach is well enshrined. You ask, in this community who is benefiting from this protection?

MR COPPEL: Is this an approach that you know has been tried in any local government area? How easy is it to put this in place and to identify the allocation of those that benefit vis-a-vis those that benefit but to a lower degree? Is that a pragmatic - - -

MS COLEMAN (BPA): That's a very interesting question because if you take Byron, for example - and I know the Lake Cathie residents say this as well - that having a beautiful beach is actually one of the reasons that people go to that area. It's one of the reasons that tourists go there. If that beach was falling down, houses had fallen down et cetera and it became an eyesore, then you could expect that the economic prosperity of that town would go down because beach amenity has been lost by that destructive process. I don't think the English case has just looked at who would be flooded. They took a very simplistic approach in that sense of, "Who would be flooded if we don't have this?"

If you take the Byron example, if the answer is that the whole of northern Byron will be at risk, then you could argue that a wider group would have to pay. I think it's a difficult question when you get to those nuances of how to evaluate that, and where, for example, you might need some independent authority to be able to adjudicate upon this.

MR COPPEL: Just thinking in terms of the tax instruments that a local government has are fairly limited, and also very limited in how they can differentiate between those in the community that would stand to benefit most, from those that would stand to benefit to a smaller degree, how pragmatic it would be to levy taxes

in a way that attempted to account for those that benefited - those privately and those that have more of a joint benefit or a public benefit. Are there instruments that can be used in terms of local government tax raising that can be targeted to such a degree?

MS COLEMAN (BPA): Yes. The amendments to the New South Wales Coastal Protection Act actually created a new levying power to levy for coastal protection. As it's currently drafted it wouldn't be wide enough to permit consideration - a wider consideration - or on one view of it, arguably, but there already is a mechanism there to have special levies for coastal protection on parts of the community.

MR COPPEL: Okay. You mentioned that Byron has limits on coastal protection works. Are you aware of any other restrictions that are being placed on coastal property owners in New South Wales?

MS COLEMAN (BPA): Yes, this is a very volatile period in the last three years, as I said. It's not only Byron, but Gosford Shire Council is an area of controversy because it's got four of the New South Wales hotspots. There are other areas, such as around Lake Macquarie and Eurobodalla. There are many other examples. In fact the next speaker, Pat Aiken, will be able to give you more detail of the people in his Coastal Residents Action Group. Pat has a lot of detail about the problems at other spots other than Byron. I do want to emphasise, this is not - in New South Wales - a problem just for Byron and Lake Cathie. They are very controversial spots because they're the councils that are trying to put planned retreat into built communities. This problem is up and down the New South Wales coastline.

MR COPPEL: Do you have any sense of what the costs of those measures have been and the impacts in terms of environmental outcomes?

MS COLEMAN (BPA): It's a very interesting thing. The actual cost of coastal protection, compared to the property at stake, the cost is actually relatively affordable compared to the value of what's being protected. It's a very interesting part of the economic equation. Coastal protection actually doesn't seem to me, in the scheme of things, to be a real barrier of astronomical costs when you're talking about comparing townships. Sorry, what was the second part of your question?

MR COPPEL: A sense of what the environmental outcomes have been.

MS COLEMAN (BPA): Right. It's interesting that at Byron the township itself is protected - just to focus on this as a microcosm issue. The township is protected by a structure, and the view of every expert that's looked at that in the last 20 or 30 years is that that protection - protecting the town which is necessary and essential to protect Byron township - is causing erosion further down the coast on the very

people on whom Byron wants to take away the protection. That shows you one of the complexities that again we're dealing with a built environment already. We have to make rules that accommodate that fact, because reality is we've already got protection that's already having impacts. We haven't got a clean coastline here that we can start with, and that makes it very difficult because how you can say to the residents up the beach, "Well, you have to have protection that doesn't have any effect on the coastline," when the reason they need protection is that the protection down at the time has caused the beach in front of them to erode.

You can see there are knock-on effects everywhere. It seems to me that you can't say to anyone, "You can't have any impact," that what we more need is the Queensland test just adopted by amendments to their act was that the protection had to be designed to minimise the impact. It's about having a test that's practical and workable. As I said, nobody wants to see the natural environment damaged, but it's just having a test that people can meet. The Queensland formulation of that at the moment is that any protection works have to minimise the impacts.

MR COPPEL: Just one final question. You mentioned your view was that you thought local government is not the appropriate level of government for a response to the climate change adaptation. You're suggesting more of a national approach, as I understand it, for managing climate-related risks.

MS COLEMAN (BPA): Yes.

MR COPPEL: What sort of national approach - what would it look like? If you were given a clean piece of paper to design a national approach, what would be critical to a national approach?

MS COLEMAN (BPA): I think the national approach would have to be, are we going to recognise that we want to protect Australia's built community? That's the first thing. Are we going to protect or not protect? Then we have to enshrine some workable tests about that which, as I say, I think involve having a community by community approach; not looking at individual property owners but looking at localities like Sydney Harbour. Are we going to have a policy there not to protect all the property around Sydney Harbour, or the whole of the property in the Gosford Shire? It's looking at that at a community level and working out what's the best solution there given the problems they face.

MR COPPEL: Okay, thank you.

DR BYRON: I think you've already covered the ones I was going to ask.

DR CRAIK: Okay. I'm fine too. So thanks very much, Karen. Thanks for your

submission, thanks for your paper, thanks for your comments today.

MS COLEMAN (BPA): Thank you.

DR CRAIK: Now we move on to Patrick Aiken from Coastal Residents Inc. Patrick, when you come up here if you could state your name and position for the record and then if you'd like to make a brief opening statement we'd like to hear it. Thank you for your submission.

MR AIKEN (CRI): Thanks for letting me come here.

DR CRAIK: You're more than welcome.

MR AIKEN (CRI): My name's Pat Aiken or Patrick Aiken and I'm secretary for a residents association called Coastal Residents which formed in Gosford towards the end of 2010 as a consequence of forecasts of sea level rises that claimed to affect 9000 homes in the Gosford local government area. It's since extended into the Wyong area our membership.

DR CRAIK: Thank you.

DR BYRON: Thanks very much, Pat. As you may know, we will be hearing from Gosford City Council within about two hours' time. I'd start by thanking you for your submission and pointing out that thank goodness we don't have to resolve the specifics of this case but it's a beautiful example of the issues that are actually facing people all around the coastline of Australia. I just thought I might need to make clear that we're not a tribunal for the specific case.

MR AIKEN (CRI): No, not at all.

DR BYRON: It's in the light of that general class of problem of how do we think through all these complex issues, the almost certainty of significant sea level rise and how we deal with that. In your submission my reading of it was that you were concerned about taking what you saw as dramatic action too soon in terms of requiring people to vacate existing properties because of the prospect of significant sea level rise?

MR AIKEN (CRI): I mean, that hasn't actually started to happen, it's the planning for it that's a major issue. It has impacted on property values. It's not possible to prove that but likewise it's not possible to prove that it hasn't and you would have to be, I think, disingenuous to suggest that such forecasts don't have an impact on property values and I think it's pretty much accepted now that this does and in fact there are people with Gosford Council, as an example, public officers or officers with Gosford Council who made very public statements to that effect in 2009. I have a copy of that statement here.

So I think that that is a big issue for people, particularly into their 80s now, who bought properties in these areas many years ago and this is now their life saving. Because, unfortunately, in this whole debate what has been forgotten is that by far the majority of people, the vast majority of people don't have a lot of money. They are the ones who are really affected and it hasn't been thought through. So one of the big things that we're seeing now that is directly impact are increases in insurance. Now, I have listened to the insurance group speaking and I think they're completely out of touch with what's actually happening on the ground. We have got absolutely solid evidence and whenever we have attempted to provide that, they have never gone out to confirm it, they've never used it. They have actually said in writing - not the insurance company but our council - that they didn't follow up. They went to the insurance council and they went to insurers to ask these questions.

But we've got letters from the NRMA, for example, telling one of our members that his insurance is going from 1200 to over \$7000 in one year and that they used local council mapping and the council mapping, when you mention that they say, "That's flood mapping." But that's not quite the truth because the flood mapping that is available in the public domain from Gosford Council and other councils - you've got one map and it will show you a particular area and it's got four different colour codings. It has the current 1 per cent flood right through to 2100 all combined on the one map. For starters these things are developed over years in studies and then they're dumped out into the public domain.

There has been no discussion since it became very clear that this was going to be used as an approach to development control. There has been no public forums, there has been very little consultation, despite the fact on the notice that was given to all these property owners they were told that this would occur. Still nothing has occurred after over two years and that's absolutely disgusting. It's disgraceful to suggest that you would provide people with those opportunities and you don't.

So, as I said, people well into their 80s, then we've got younger families in their 40s, it's a great concern to them. People around my age group, I'm 60, for my wife and myself this has been absolutely devastating to think that what we had hoped to achieve through our years of work has either been put on hold or completely destroyed through what I believe is a really fundamental flaw and that's the lack of consultation on this whole issue of climate change. Because in making these projections - and the federal government is a classic example - they just dump these matters out there and they said it's a 1.1 metre sea level rise average around Australia by 2100 then they showed the seas rolling in.

It's mind-boggling to think that you've got a government and then the state government and then right down to local government they're prepared to put these things out there in writing and when you actually start to look at it and analyse it you

find out how exaggerated it is. I'll give you a good example of that. Gosford Council first said 7500 properties. Then they said it's nine. Now they're saying it's around about eight and they've been sitting on a report that was started in 2010 that says it's 4109. Now, why would you put that information out in the public domain other than to frighten the daylights out of people? They've been successful at it, they've been highly successful.

Now, that in itself is a massive barrier to any adaptation to climate change because I can tell you for now I'm one person, I'll fight hard for my rights and there's thousands with me and right round Australia there's two million in this. They had better get their act together because we're not going anywhere, we're not going to be moving forward, our economies at a local level across the state and at a national level will be severely damaged unless people actually start to analyse this and stop using the precautionary principle. The precautionary principle in this case means you think about the worst possible occurrence. So now we've got the insurance companies up around Gosford and Gosford Council talking about the possible maximum flood could be a one in 10,000-year event. What happened to the benchmark of a 1 per cent flood? Just crazy stuff.

DR BYRON: Okay. So are you - - -

MR AIKEN (CRI): I'm angry.

DR BYRON: One of the concerns here is about the process of local governments making informed decisions about the risks and the liabilities that they're taking on, their commitments to protect areas that they see as being vulnerable. You have made the point very clearly about how important public engagement and communication is or should be in that process. From the point of view of the council, my is that local governments around the Australian coastline are concerned that they basically have a whole lot of liabilities to do a very substantial amount of protection work over the next 20, 30, 50, 100 years, and they're trying to basically minimise that risk exposure for themselves.

MR AIKEN (CRI): I believe again we're talking about the precautionary principle, and with that an exaggeration of the actual impact. There's a very good example of this in many areas around Brisbane Water estuary. For example at Araluen Drive at Hardys Bay - and I've got photographs here that will show it very clearly - there's one particular property in this street that I can think of. What's indicated on the multicoloured coding on the sea level rise map which has the four 1 per cent flood events up to 2100, is that for the year 2100 the maximum amount of inundation with a .9 of a metre of sea level rise, it would be the very front boundary of these properties - maybe a metre - that would be affected. This is a six-hour flood that comes with a storm surge. It doesn't mean that it will only occur that day - it could

occur the next day and the day after - but the probability of having three 1 per cent flood events occurring one after the other is pretty remote, and there's no historical evidence of that, particularly referring to the 1974 flood when most residents who saw this said it was like somebody pulled out the plug. That was when the tide changed.

We've got these homes on Araluen Drive, we've got a road that would be covered from a very minimal amount of flooding from the estuary, Brisbane Water, and it would come up to the very front of their boundary - the homes are elevated to about 10 metres along the front of this road - and there was one home in particular and the lady had a right of way that was about two metres wide, so her front boundary on that right of way on Araluen Drive was affected. She had access to the road above, and her home would have been about 30 metres above the sea level. Her property was encoded as being affected by sea level rise. I just put to you that there's something absolutely wrong with that. In addition, all of those homes along Araluen Drive were given the same encoding and no real analysis. That's the big issue with the insurance. They don't give you information about the level of the land, or the actual level of the flood in AHD. That's left to an open interpretation.

DR BYRON: I don't know that we can do very much about the quality of the data that councils around Australia are relying on, except to argue that it needs to be improved.

MR AIKEN (CRI): Well, consultation is a good approach. The local owners have got a good idea of what their property is like.

DR BYRON: You might have noticed in our draft report we gave some examples of the Clarence Council in Tasmania where there has been very extensive community engagement, lots of consultation.

MR AIKEN (CRI): Yes, I saw that.

DR BYRON: They have actually come up with some provisional rules about how the council would continue to do protection works along the coast and so on for at least, I think it was, 25 years, but after that it was some sort of grey area, but at least it gave the existing owners of existing properties some certainty that there would be protection for that long but after 25 years there were no guarantees. That sort of conditional tenure, do you have any reaction to that?

MR AIKEN (CRI): That's planned retreat. I've got no time for that, I'm sorry. I'm of the opinion that the priority should be on defence in the first place. Any form of planned retreat should be a last priority because, I mean, let's face the fact, climate change is caused by all mankind, not just me. That is the absolute reality of this

argument. It's a small number of people in this case who are being told, "It's your problem." I've even had an MP tell me, "You took the risk, it's your problem," and it's also the same MP that said, "We've got to draw a line in the sand," and I said, "Which side of the line am I on?" It's very clear to me that about two million people in Australia have been put on the other side of the line. They still pay their taxes and a lot of them are still paying massive land tax on properties where it's a second home. I've been subjected to that.

On the beachfronts it's around about \$50,000 at Womberal and that's not even considered. I put to you that that concept of time consent, rolling easements, it's just as damaging to certainty, it will be just as damaging to any local, state and federal economy because it devalues assets in a big way.

DR CRAIK: Pat, are you suggesting that the community or someone pay for defence of frontline properties up till how much and up till what point - I mean, when the waves are rolling in the front door?

MR AIKEN (CRI): No, I wouldn't say that. I think there's got to be some commonsense about it.

DR CRAIK: How do you make those decisions, I guess?

MR AIKEN (CRI): Let's see what is actually going to happen first because there's still a lot of uncertainty about what will happen with sea level rise, particularly on beaches. There's differing opinions on that. Some people say that all hell is going to break loose and the beaches are going to disappear, and there's others that say it won't happen so quickly. But if you look at the experience in Gosford, Wamberal beach is the hotspot. It has been subjected to fairly recent coastal erosion. The beach seemed to repair itself and recovered fairly quickly. There's other areas that aren't affected in a big way at all. But nobody has really had a good look at what these costs are, but at Wamberal, they actually put a cost on a revetment at eight and a half million dollars some years back. What really stopped that from occurring was that they then said, "There's a million dollars a year for maintenance of that and the property owners are going to be responsible for that."

Now in 1974 and 1978, when homes were falling into the sea, the real concern was that those dunes were going to be breached and it would just flow straight through - this is in the news reports from that period - and it would wipe out the 400 homes behind and the infrastructure - the sewage treatment plants and so on. I think these things need to be looked at carefully, and in some cases I think they should be considering purchasing properties as a solution and compensating people properly for that, because there's a high value in that property, far more than what you'll pay for that land now. As time goes on, that land is going to become even

more valuable if it were in the public domain. It will have a much higher value than as a private asset. I'm not talking about a monetary value, I'm saying an intrinsic value that benefits the whole community. That's not considered. All that people look at is, you know, "It's \$3 million or it's \$5 million. There's 70 of them."

We've just gone into a hundred-odd billion dollars in debt with this global financial crisis. Nobody has suggested that we shouldn't spend money on something like that. I'm saying that's what we face into the future unless there's a real rethink about it. As a property owner myself - and I know there are many others like me - I'd be more than happy to put my money into protecting my land. I haven't got a problem with that. It's the government that doesn't want me to do it. Yet in 1987, when we had a flood plain risk management committee, they wanted to fill the land. Now they won't let you. When I talk about "fill", it might be half a metre or it might be a quarter of a metre. You don't need to do these things to take it right up to the level that's going to stretch into the future because most of the homes that we see will be gone. The suburbs that I'm focused on, the one where I have a home, is Davistown. That goes back to early settlement. The whole suburb was developed over about the last 120 years. It's due for major redevelopment. These are the sorts of things that need to be considered. People look at the environmental impact but again the Brisbane Water estuary is a very valuable public resource and it would be worth that investment into it, I believe. I don't think there should be any issue with protecting the environment if there is an out come from protecting private properties that property owners have invested their own money into.

Each area is going to be different but you can't just put a blanket condition right across. As I said before, Araluan Drive at Hardys Bay, and there's a lot of examples very much like that. The worse that could happen there is they might have to raise the road over 90 years or a hundred years. But even if they waited until 2100 and we had the sea levels rise to the extent they are, the issue of flooding for that road is only a 1 per cent probability. It's mindless to think that you can't plan to resolve that issue in the event that it would occur. I know for a fact that the roads in Davistown have been built up over time and they continue to be built up. Even the properties have been slowly built up naturally.

DR BYRON: That's not uncommon.

MR AIKEN (CRI): I would just say recently we were given a plan for Wamberal-Terrigal beach and it stated in that plan there's been no consultation. There's 70 homes. It has just been said in the plan itself, "No consultation has occurred with the owners." It's a big issue.

DR CRAIK: Okay. Thanks very much, Pat. Thanks very much for your submission and thanks very much for coming along today and answering questions.

You illustrate that it's a really difficult issue that is challenging both residents and councils, so thanks very much.

DR CRAIK: Now we've got Rob Hall from the Australian Psychological Society. Rob, thanks very much for your notes and submissions that you've sent. If you could identify yourself, say your name and position for the record, and then if you would like to make a brief opening statement that would be great. Thank you.

DR HALL (APS): Thank you very much. My name is Rob Hall and I'm here in support of the Australian Psychological Society submission. I can't really speak for the society. I'm a member of their climate change reference group but I'm really here in a personal capacity to speak to the submission.

DR CRAIK: Thank you. We note your comments, we didn't to give the impression that we were dismissing in our draft report psychological barriers or cognitive barriers because they were too hard to deal with. We didn't mean to give that impression so we will try and address that in the final one.

DR HALL (APS): That's fine, thank you. In contrast to the other submissions I have heard this morning this is not a submission about a particular place or a particular circumstance. But really the APS, my colleagues and I feel that there is actually a large body of research information, practical information about issues to do with barriers to adaptation and that there isn't at the moment any clear and effective means for that information to be brought into policy preparation. I think that becomes obvious when we go through and look sometimes at policy failures.

So we're advocating the use of or the reference to some of this material really as a means to overcome potential failure in policy, to increase the understanding of the understanding of the way in which people are going to react to or respond to aspects of policy.

DR CRAIK: Why do you think that psychological information is not actually brought into policy preparation? Why do you think governments don't do that?

DR HALL (APS): I suspect it's because there isn't a clear perception of what contribution it can make. I think that is really part of it. I think also that people working in social science have been slow to present the useful outcomes of their work in a way that allows for direct application. So I think as psychologists or whatever other behavioural scientists we might be we have been slow to step forward and present the material.

DR CRAIK: Are there any examples of public policies in Australia where psychological advice has been incorporated in terms of promulgated public policy and the result has been successful?

DR HALL (APS): I'm sure there are.

DR CRAIK: I just wondered if - - -

DR HALL (APS): I'm not really presenting a view that is saying, "Look, we've been ignored and it's all bad."

DR CRAIK: No.

DR HALL (APS): Certainly not.

DR CRAIK: I guess I wondered if you had been involved in smoking or something like that.

DR HALL (APS): It's easier to point to examples where policies haven't worked and then in retrospect - which is where we're often called in - you can go, "Ah, yes, well, this is why it didn't work." A lot of evaluation research that governments implement has that catch-up character about it rather than investing in thinking through the process. I mean, in the short one-page document that I submitted today which tried to pull out what for me are three important aspects of the overall APS submission which, as I've said and you know, a complex document. I think my colleagues have been very eager to get on the table and so they have put a lot of material in there.

But it seems to me that there are three broad, general areas that are worth noting and the first is to do with the precursors for getting people to do anything at all and to take action. It's interesting because when we look at policy, whether it's in healthcare or environmental issues, these three precursors keep coming through as essentially very important. The first of those is that people have to know there's a problem. The second is that they need to think that that problem is personally relevant. The third is that they need to feel that they can actually do something in response to that problem. Like so many things in social science when you hear that it sounds blindingly obvious and yet it's interesting how often policies are formulated looking, say, at that first precursor, that we tell people, we'll advertise, we'll inform, we'll say stuff about it, game over.

Each of those three steps has some very important aspects to it and we've heard here this morning how confusion or misinformation or lack of clarity about the discussion of a problem makes it difficult for people to accept anyway and then we've got that issue that people can agree there's a problem but, "It's not my problem, it's for government to fix or it's for somebody else. It's a problem for Australia, not for me." This third of issue of what in the jargon I'd call personal efficacy is really very important.

As an example, I was involved some years ago in looking at the introduction of a mammographic screening program and the people who were putting the program in place and said, "Look, one of the things we're interested in is how to handle the demand because we have got this new mammographic screening program and we think there will be a great deal of demand." When we actually talked to women in the area of Sydney - which was a very working class area - about the program those at the very bottom of the economic spectrum were able to agree that breast cancer was a problem and it was a problem for them but the economic and the emotional cost of going along for a diagnosis was too great. They couldn't do anything about it because typically it might be a couple where the husband works night shift and the woman works day shift and so on.

So the notion of being able to do something about something is really multifaceted and if you turn that negative situation around and you look at something like Ian Kiernan's Clean Up Australia. That was the situation where the problem was huge, national scale and clearly a person couldn't do anything about that. Yet because of the character of rubbish, it's clear, you can see it, it's unambiguous and, "There's rubbish near my place so I can do something about it," and that personal efficacy hurdle was overcome very well by making it so simple, if you take a bag and gloves and go down the street with your friends. So that was an example that brings into play intuitively a whole lot of an understanding of people.

DR CRAIK: So do you think there are cognitive barriers? I mean, this issue of being aware of the problem climate change some people might understand it as getting - there have been more hot summers so they go and buy an airconditioner but they still may not believe in climate change but they have been adapting to it. One might say they have been adapting by going out and buying an airconditioner because it's hot even if they're not a great believer in climate change. So I guess the question is are there specific cognitive barriers? How do you deal with this? How do governments deal with this? Better information? More information? Targeted information?

DR HALL (APS): I don't think there's a glib answer to that. I think it's a process answer because along with saying there's a lot of research information that gives us guidance, there's also those sorts of research methodologies of understanding of what's in the minds of those people and it's only then when you have that understanding that you can start to formulate some response to it. So my response is really you need to understand what's in their minds and I think too often what we tend to do in formulating policy is to think we understand that and formulate away only to find that it doesn't work properly.

There was an example last year in the taxation papers. I noticed intriguingly

that the fringe benefit tax for cars was being set at a flat rate because in the document it said there was unintended consequences of people driving too far or more often just to get increased benefits. So I think it's not just a matter of finding out, as I said, what's in people's heads but also looking at the way understanding evolves over time and exploring what people are likely to do in response to an issue which is the relevance in talking about that taxation example. Because the other two things that I listed in that one-pager that we tend not to do very well is, firstly, recognise that environmental problems tend to happen slowly over time or over a great distance and they're hard for people to come to terms with, to understand and there are mechanisms for encouraging that understanding or providing cues to what's actually happening and the examples that were given in the submission were things like being able to give people cues about electricity consumption and so on.

The other thing that I think we have not been very good at is treating any of these situations about which we're trying to form policy as complex systems and by complex system I mean the unintended consequences, the things that bite back.

DR CRAIK: So in terms of trying to get government to take these issues on board in developing policies about climate adaptation - our inquiry is about what are the barriers to this, what would you say is the problem? Is the problem that your colleagues aren't sufficiently in politicians' ears or in the ear of government or the government doesn't seek you out? Is there a barrier to this happening? Is there a barrier to the society explaining to government the value of this - illustrating to government the value of this input in policy development?

DR HALL (APS): I don't think psychologists want to feel particularly hard done by. I think that every discipline feels they don't get the ear of government and governments act in mysterious ways. What I think is a positive contribution or would be a positive contribution is to encourage organisations like the APS that are really investing energy in gathering this material together and analysing it to (a) keep presenting in various fora position papers or commentary and becoming clearly labelled as a resource that is available to assist and work with other disciplines and in the best of all possible worlds there may a situation where some kinds of policy material can get circulated to them specifically along with others for an analysis from a social perspective.

DR CRAIK: I wonder if any of your colleagues have gone and tried to give some advice to local councils on how they might deal with some of these issues because this is, you will have heard, where the rubber really hits the road and that seems to illustrate a lot of the - - -

DR HALL (APS): Yes. My colleagues are certainly doing that and I think one of the difficulties, however, is it's a very spasmodic and localised effort. It's rather like

in various research institutions around the country there are groups working on adaptation and the groups tend to have multidisciplinary approaches as you would know so well and deal with things like the tolerance for marshland change and so on. There is sometimes one or two social scientists working in that area in the group and they're working on some specific issue. But there is no mechanism at the moment that produces a coherent distillation of all of this and makes it available as a resource that is motivated by more than the individual interest of a particular researcher.

DR CRAIK: That's a good point.

DR HALL (APS): I think it's that bringing together and providing an identifiable resource that is critical.

DR CRAIK: I don't know if this is your specific area or one of your colleagues, but can you give particular examples of cognitive barriers that might impede the community's ability to adapt to climate change?

DR HALL (APS): I think we've actually heard some referenced, if I'm replaying what I've heard this morning. A cognitive barrier means that you don't believe something or you don't understand something or you think it's wrong and you may then get into denying the situation or you selectively choose the information you're seeing and so on.

DR CRAIK: We all do that, don't we?

DR HALL (APS): We all do that all the time. We put the best view of the world that we can.

DR BYRON: Confirmation bias.

DR HALL (APS): Absolutely. So again I don't think there a panacea to overcoming cognitive barriers but it's helpful to be able to go through the check list and see how they are being addressed and see in a particular situation what kinds of cognitive barriers, what kinds of perception, what kinds of understanding groups of people or individuals have about something and I think that's a very useful step before deciding to take action and to change that.

MR COPPEL: One of the issues that we have been tackling is information on climatic risks and how that information is communicated in such a way to elicit a response and you mentioned that there are three steps in this process from your point of view, knowing that there is a problem, the problem is personally relevant and that there is something you can do about it and a number of instruments are being played around with, informing citizens through property certificates and so forth on the

climate risks. Looking at it through this perspective, are there any particular methods that you would suggest would be a way to communicate climatic risks that were effective in eliciting a response in terms of adaptation measures? How would you go about addressing those three particular areas in a fairly straightforward way to alert and inform people about climate risks?

DR HALL (APS): I think the first step is probably that climate risk is too blunt a concept to alert people to. I mean, you can talk about it and that's underpinning everything. But I think most of us understand more specific broken down problems and by that I mean something like energy consumption and your house and so it's probably a matter of breaking up that larger problem into its components or the larger concept into its components and working to deal with a number of those components is my first response.

I would be falling into my own trap by offering solutions to such large problems just like that. So I really have to keep coming back to saying what we're offering is a process for informing not an out of the pocket solution.

MR COPPEL: But my understanding is that a lot of what the government is proposing to do, Commonwealth and state governments, is to provide more information which at times reminds me of people who think that if you shout louder even foreigners understand English and yet the evidence seems to suggest that if you just dump people with a great deal of bad news a typical reaction is paralysis, to just not deal with the issue at all, to switch off.

DR HALL (APS): Yes.

MR COPPEL: But if you tell people, "This, this and this is likely to happen, however, here are three things you can do about it that will help you to respond and that are likely to work for you," then you actually get a positive engagement.

DR HALL (APS): I would agree with that.

MR COPPEL: Okay. That was the question.

DR HALL (APS): I would agree with that. The other thing too is to think about the channel through which the message comes. It tends to make a great difference if the message is received in a group that you respect and deal with and perhaps in face-to-face communication. Now, I'm not anticipating that the government will run around and talk to everybody personally but there is a sense that the first reaction often is, "Let's put it on television," or, "Let's put out a heavy text document and pop it in every letterbox." They're fairly inefficient ways of bringing about behaviour change or even correct awareness.

So we need to be much cleverer in getting that barrier that surrounds what I might call the household. I mean, in my household we have a number of views and we're not sure that they're the same views as the people in the household on that side of the fence, but if it turns out in the street the households are all agreeing this is a bit of a problem, then I feel much more confident to stride around and do something about it. So we need to be looking at using the full palette of channels to communicate if we want to really bring about change.

DR CRAIK: Thank you. Thanks very much, Rob. Thanks for coming along and thanks to you and your colleagues for your submissions and your comments.

DR HALL (APS): Thank you for having me.

DR CRAIK: We will now have a 15-minute break for morning tea and then we will resume at 11 o'clock with Adam from the Water Services Association.

DR CRAIK: Water Services Association of Australia, Adam, when you're ready, if you could state your name and position and if you'd like to give a brief opening introductory statement, it would be great. Thank you.

MR LOVELL (WSAA): Sure. My name is Adam Lovell. I'm the executive director of Water Services Association of Australia. Water Services Association of Australia is the peak industry body for water utilities in Australia. We have 34 members, ranging from Sydney Water with one and a half million connections through to Western Water, just near Melbourne airport with about 50,000 connections and we have a load of associate members on top of that.

As you probably know, Wendy and the other commissioners, the water industry has been one of the first sectors to face the realities of climate change variability head-on during what some might call the millennium drought of the 2000 period or, as they refer to in Perth, the drying out, because if there's any area in Australia that's shown that climate change is here to stay, it's been Perth and the south-west of Western Australia, where they had a record low inflow of 10 gigalitres during their filling season in 2010 compared to a long-term average of 300. So it shows that climate change for urban water is here and it's hit very hard.

One of the interesting things that we've found in dealing with climate change has been the very stark and highlighted interest in water security and rightly it should be, because we cannot have our cities and communities running out of water. So the huge investment in water security projects, particularly in desalination, very high-profile projects - water recycling, less well known - and water efficiency have really produced very strong balance sheets for urban water going forward, so much so now that we have desal plants on the Gold Coast and Sydney now turned off, Melbourne not quite yet up and running, Adelaide up and running, and Perth of course needing two desal plants for base flow, not just for insurance purposes, for actual base flow.

We would like to actually turn the attention to the other less known assets and that's the buried infrastructure and the huge potential costs attached to replacement of buried infrastructure. Australian urban communities have around 146,000 kilometres of reticulated drinking water pipeline and around 120,000 kilometres of sewerage pipes. We have calculated that there's a range of rehabilitation replacement costs of around 75 billion through to around 325 billion dollars. Now, when you compare that to the cost of a desal plant and, say, Sydney is around \$2 billion, that sort of dwarfs I guess the high-profile above-ground water security projects against the very real and ongoing need to put attention to those buried infrastructure costs.

The one thing I guess, before we get into questions, in terms of barriers, what

we've found in terms of barriers to effective climate change adaptation is that there is a very strong need to see coordination between federal, state and local government and we don't see that as a water utility body, I guess. Policy settings need to be much more adaptable situations and much more amenable to community opinion and community engagement. One example I have of that is the artificial and unneeded policy bans that are in place in some states on potable re-use and on urban and rural trading. By having diversified water supply systems for communities and cities, you have that adaptability for water security in particular for overall water management in urban situations. Those policy settings which are not really based on anything other than the politicians of the day and what they happened to think have not truly engaged the community on the costs and benefits of various options available to them, so that must change.

We need clear responsibilities between governments, between utilities, between local government. Who is making the decisions? Who is bearing the risk and who needs to pay for it? That's very unclear at this point in time. The other issue that we're coming across more and more is the interdependencies between critical essential services. We've started off a program, the attorney-general's program on the CIPMA, looking at interdependencies between water and energy because if your energy system goes down, typically your water will go down at the same time. We just do not have that capability to understand if you have a wind event, if you have a bushfire event, if you have sea-level rise, if you have storms, what those interdependencies are. Because they're critical services, they're critical public health services, we really need to be prepared to deal with those situations as they come. It's no secret that all we've seen is record events, record heatwaves, record rain right across the country. Those records are not going away. We need to be prepared to deal with those.

The other final point that I would like to make - and this is no sort of disrespect to the regulators attached to water utilities - is that we're not sure that they're actually prepared. Between economic regulators, public health regulators, environment regulators, we're not satisfied that they're prepared for what climate change and climate change adaptation actually means because it means a coordinated effort across all of those three regulators. There's been some effort with the Essential Services Commission Victoria; they're looking at, for instance, different discount rates applied to renewable adaptation for new assets, but that's only just a start, a drop in the ocean, so to speak. I might leave it there and have questions.

DR CRAIK: Thanks, Adam, and thanks for your submissions.

MR COPPEL: Maybe if I can just pick up on the last point that you've mentioned. There's been some concern among regulators or network infrastructure gold plating in response to climate change. Have you in your experience had any problems or

difficulties with regulators and the way in which you can adapt the risks of climate change in the water sector?

MR LOVELL (WSAA): The only problems that you tend to see - particularly for an economic regulator which tends to provide the most impetus for water utilities - is they're operating off a short price path, so that's five years. The long-term planning is not really recognised when you're setting that price path for the next five years. So that's the problem we typically face. If you look, for instance, at what is a particular issue, management of sewer overflows. So if you look at what we're facing, more extreme events than the capacity of our sewerage systems to handle that water is much more constrained. So the economic regulator might say, "We'll only give you so much for your sewer overflow upgrades," but the environment regulator will say, "Well, no, we've got particular goals for that water body that you're discharging to and you've got to meet those water quality objectives." Often we're seeing they don't actually meet. That's what we're looking at; we need those regulators to be talking more and to be looking at the longer-term future. These are not insignificant costs. Sydney Water might have a sewer overflow program of \$2 billion. That's not an insignificant cost to pass on to customers. You need to have really clear objectives about what you're trying to achieve and build in that climate variability component into planning.

MR COPPEL: Are there specific examples where the interplay between the water providers and the regulators are actually impeding investments that you would undertake if it were not for the way in which the regulation is playing out on the water sector?

MR LOVELL (WSAA): I don't think there's any specific impediments, it's more inaction. It's more, "We don't know so therefore let's not do anything." It's an impediment looking at it from the reverse side, I guess. We need to get past those hurdles that seem to be too hard to handle and then move on; try to make decisions and look at things in a different light. From a water security perspective, the east coast is okay. It's settled. There's no new, major water security projects that are required for at least the next decade on the east coast. If anything now we've got an opportunity to start planning and start engaging the community on what urban water might look like into the future. The other impediment that we have is that not all water utilities - and I'm not advocating that water utilities take over stormwater assets, but there's a lack of integration with the stormwater assets as well that are sometimes owned by local government. That I think is an issue that we'll need to tackle over the next five to 10 years at least.

MR COPPEL: You mentioned the regulators working better together as one of the obstacles. Is there anything else that would improve the ability to adapt to climate change and better coordination between the regulators?

MR LOVELL (WSAA): One of the more difficult things we've seen is the protection of public health, particularly in on-site systems. As we get more rainwater tanks and grey water systems and on-site type recycling, that's an encouraging investment, particularly in urban areas, which I'm not sure that's particularly well handled at this point in time. I'm not sure it's particularly well coordinated again between the regulators. It doesn't present itself as an immediately obvious issue for climate change adaptation, but this is all within the realm of extreme events that water utilities face, and the ability to adapt within what's now become a very constrained sort of system. The public health aspects of it are pretty important as well.

MR COPPEL: What about design standards for water infrastructure? Do you see these current design standards as being appropriate for managing climate change adaptation - - -

MR LOVELL (WSAA): Well, the interesting thing on that is whilst we produce codes for the water industry on those sort of assets - the pipes and pumps, the design standards - as those codes are being renewed, which is a continuous process, we're building in some sort of redundancy for climate change adaptation as well, but that has been extremely difficult. It's notoriously difficult if you go through a very dry period, and then you go through a very wet period. You build in redundancy and you build in cost. Trying to achieve that level of efficiency has been quite challenging. We don't have an answer for it but we're trying to cope with it as we build new codes.

MR COPPEL: What role does information play in building those new codes? We've talked a lot about information during the course of the morning. I was wondering if there is any specific information that's needed that isn't readily accessible to inform these decisions.

MR LOVELL (WSAA): Probably the biggest teeth-gnashing we hear about is down-scale modelling of rainfall. We're probably not looking at that as much as what we were in the past because some of those events are so localised they're almost impossible to manage. It's more about investment decisions. We're working with the Department of Climate Change and Energy Efficiency on a project called Adapt Water at the moment. We are looking at triple bottom line assessment with new projects. How would you balance a sewerage pipeline upgrade versus a water security project versus a public health project, you know, some sort of project to cover a reservoir because it's become too warm, and it's encouraging mosquitoes or bird life?

How would you actually balance those really diverse type of projects from a

triple bottom line perspective, and what's going to give you a bang for your buck? We've got that project which has its limitations. It's got a fair few assumptions built into models. It's mostly about run-off. We're always looking for that rainfall and run-off. We're not advocating so much for the downscale rainfall modelling as much as we used to. It's more the run-off, the hydrological models, where the water is going, and the extreme events which is the most challenging. We understand that.

MR COPPEL: Are they issued in relation to the accessibility to the information or is it - - -

MR LOVELL (WSAA): We haven't found that so far. What we do get concerned about is a plethora of different organisations - Australia is too small, as far as we're concerned - and just to give you an analogy is we have two centres of excellence for water recycling desal. There's a CRC for water service in every city. There's a lot of federal government money in research and information-gathering for urban water which is fantastic, I'd never say no to it, but it's actually quite poorly coordinated. We're seeing the same sort of things done in developing the climate change adaptations base and we'd much prefer to see a greater coordination because it's just too important an issue to have it uncoordinated.

There's great bodies - there's CIPMA - there's all these different programs that are happening, but no coordination. It's left to us - for instance, there's an industry association on behalf of our members to coordinate between all of these programs and try and work out who's going to deliver the best bang for the buck, and it's enormously resource consuming.

MR COPPEL: We've heard a lot about the need for coordination, sort of at a high level of generality, in a sense, but in practice what format of coordination would best be able to deliver a coordinated response?

MR LOVELL (WSAA): Well, infrastructure response, you go to Infrastructure Australia research to the NCCARF or whoever the federal government is prepared to put some money or coordination ability behind. It doesn't have to be one single body. I don't advocate for that, but it needs to make sense that if you're planning infrastructure programs, if you're planning long-term infrastructure for a city or town, then it needs to be given to the body that can make decisions; that can assist whoever is responsible in bearing that risk, in managing it, because quite often the information might be - and I heard one of the speakers before say, "Information is just dumped out there." That's our impression too, it's just dumped, and hopefully somebody will pick it up. That can't be the way that this country can operate in terms of managing such a huge issue.

MR COPPEL: Thank you.

DR CRAIK: Thanks very much, Adam.

MR LOVELL (WSAA): Sure.

DR CRAIK: We greatly appreciate it. Thanks for your submission. It's very helpful.

DR CRAIK: Next up we have Gosford City Council. If I could ask you to state your names and positions, please. Then if you would like to make a brief opening statement we'd be pleased to hear from you. Thank you.

MR LOVE (GCC): My name is Eddie Love, I'm the deputy director, environment planning at Gosford City Council.

MR BAKER (GCC): Robert Baker, senior flooding and drainage planning engineer, Gosford City Council.

MS PILKINGTON (GCC): Louise Pilkington, project officer, climate change, for Gosford City Council.

DR CRAIK: Thanks. Would you like to make a brief opening statement?

MR LOVE (GCC): Sure. I guess I'd just like to thank you for the opportunity to present to the commission. This council has provided submissions on key Commonwealth reports regarding climate change adaptation for a number of years now, including in 2007 the Council of Australian Governments National Climate Change Adaptation Framework, and that recognised that leadership by governments on adaptation is essential, particularly at the early stage of understanding and preparing for the impacts of climate change; national, state and territory and local government have differing and complementary roles in climate change adaptation.

In 2009 the House of Representatives standing committee on climate change, water, environment and the arts which was entitled Managing Our Coastal Zone in a Changing Environment, one clear message emerged: the need for national leadership in managing our precious coastal zone in the context of climate change. There were 47 recommendations that went to the heart of how national leadership can be provided in a collaborative framework with state and local government.

In 2010 the Australian government department of Climate Change and Energy Efficiency was developing a national coastal adaptation agenda, a report on the National Climate Change Forum, where there was broad agreement among the forum participants that a coordinated national approach with clear allocation of responsibilities would reduce uncertainty in responding to climate change risks and reduce the confusion and potential costs and inefficiencies associated with inconsistencies in the national market and now we have the draft report on barriers to effective climate change adaptation.

I guess in all of our submissions our messages remain consistent, that a coordinated and consistent approach by all tiers of government is required to

effectively adapt to climate change risks. This statement is really around consistency. Gosford City Council has recently witnessed first-hand I guess the barriers of inconsistency of leadership in genuine climate change adaptation within the various tiers of government. Local government is now operating in a partial vacuum, and I'm referring to local government in New South Wales, where information has been provided by the federal government and state governments. The federal government has undertaken risk assessment work in terms of their vulnerability assessment which is this document here which identified the central coast of New South Wales as the most vulnerable area to sea-level rise. The state government has a policy on sea-level rise and a suite of guidelines.

The nature of the guidelines are such that it's resulted in a checkable defect of implementation where because they're guidelines, some councils decide to implement, some councils decide not to implement, and then there's the range in between of implementation. Given the risks that have been identified for the central coast in good faith and I guess with prudent governance in mind, Gosford City Council has been progressing down the pathway of trying to plan for climate change risk which is a future risk which is something that has not really faced local government before.

One of the results of this is that in 2010 Gosford Council adopted the sea-level rise planning benchmarks of .4 and .9 that came from the New South Wales state government. Over 8000 notifications were applied to planning certificates of affected properties within our local government area and this is something that is consistent with New South Wales coastal planning guideline which is adapting to sea-level rise which has principles within it, principle 1 being "assess and evaluate coastal risks, taking into account New South Wales sea-level rise planning benchmarks" and principle 2, "advise the public of coastal risks to ensure that informed land use planning and development decision-making can occur".

Gosford Council produced a lot of vulnerability mapping that showed risks associated with sea-level rise, including flood risk and also title risk. Because we had that information, it was seen as the right thing to do and the prudent thing to do to inform current and future owners and the method that was used to do that was the 149 planning certificate through the (5) part of that which is an advisory on property.

That was all done in the context of when information was starting to flow from state government and then following that we got some guidelines but nothing that we could really hold on to to enable us to continue. So it left us in this sort of almost no man's land where we couldn't really progress things because we weren't being provided with the tools to be able to plan for future risk. All the tools that are available at the moment in terms of planning are about existing risk, current risk and there is a lack of tools for a local government to plan and to implement adaptation for

future risk.

So what's occurred is that given that the lack of what is seen as strong leadership from federal and state government to defend council's actions, a decision was recently made by council to actually remove those planning certificate messages. So in terms of providing the ability for our community to make informed decisions which your report talks about with households being able to make informed decisions to adapt, because of this partial vacuum that we're operating within and I guess the scrutiny that the council has come under, the council decided to remove those property messages which in effect, it could be said, removes the ability for people to make informed decisions.

We generally agree with the recommendations within the report. However, we do see that there needs to be this consistency of approach in terms of information and planning frameworks to provide local government with the capacity to be able to move forward with regards to planning for climate change adaptation.

DR CRAIK: Thanks very much. Neil, over to you.

DR BYRON: Thanks very much. That was really helpful, the comments you just made, because we've been trying to think of a sort of hierarchy within which local governments could move forward, making the decisions that they need to make on a routine operational basis, whether the Commonwealth role would be to spell out broad principles, overall directions and guidelines and then the states would elaborate further and flesh that out, so each local government in Australia would know exactly where it stood and what the rules were. We don't seem to have that situation at the moment. Am I putting words into your mouth?

MR LOVE (GCC): No, I think you're correct. There's a bit of information in one place and another little bit of information there, but there's not this one picture and a clear framework and pathway for local government to walk down. From a local government perspective, we're very much in a position where we don't know where the next step is and until we're there, we can't take it, because there's no clarity being provided and guidance I guess from a national and state framework so that not only local government can move forward but they can move forward together and so you don't have this situation where - - -

DR BYRON: Chequerboard.

MR LOVE (GCC): - - - one local government is doing one thing and another local government is doing another thing or nothing at all.

DR BYRON: We heard this morning that there are 20 pieces of legislation in New

South Wales that all deal with coastal zone planning in various ways, not all of which are necessarily perfectly consistent. So, yes, we understand some of the challenges that local governments generally are facing. We've also been talking about information provision. Before councils can provide residents and ratepayers the information on the risks and hazards that they're facing, presumably council needs to either be given or generate that appropriate information. Is that a problem? I know you've done vulnerability assessments and so on but is Gosford Council happy with the information you've been able to get access to and then act on or pass on?

MR LOVE (GCC): In relation to the broad risk to climate change I think there are some areas where the information is good and there are some areas where the information is not so good. Gosford Council is in, I guess, a more advantageous position with regards to flood risk and storm risk because it has for a number of years - in excess of 20 years - invested in flood management planning and so therefore has a lot of its own data and that actually enabled us to actually produce some very good vulnerability mapping for our area. We know that's not the same for other councils. But that put us in a position where we could, what we saw, inform our community of the future risks.

DR BYRON: That information applied to both council owned assets and council provision of services as well as to privately owned assets?

MR LOVE (GCC): Yes.

DR BYRON: Sorry, I interrupted you.

MR LOVE (GCC): That gave us a good footing to say we're very confident in the information that we have in the local data that we hold and then applying the, say, sea-level rise benchmarks to that local data to see what effect that has in our area. In terms of heat we're working collaboratively with other councils to try to build that data in relation to the effect of heat which is something that is - I guess the heat side of things with regards to climate change recently is something that is going under the radar a little bit because it's one of these more hidden risks in a way but it has the potential to being the biggest risk to life.

Our main focus at the moment is flooding with sea-level rise storm risk because of, I guess, the latent risks. We are undertaking development assessments and approving development applications on a day-to-day basis which will be on the ground for 50 to 100 years but we're applying a system and a set of tools that relate to assessing that application in relation to current risk but we're required to also use those same tools to apply them with some future risk where the probability of those things - there is a degree of uncertainty. That brings in a lot of complexity and

uncertainty for us and what was brought up in the report, a whole issue of legal liability for counsels as to where do we stand given that we are assessing these applications and approving developments today which will be in place in 50 years and we don't know whether they're going to be useable in 50 years' time.

DR BYRON: Is there a difference between how you look at or think about greenfield development as opposed to protection of the existing legacy assets and infrastructure?

MR LOVE (GCC): For Gosford Council we have limited, if any, greenfield and I would much prefer to have lots of greenfield because I think it's an easier one to deal with than infill. But all our areas are pretty much developed and so we have an infill development and existing developed areas that they will be in and it's incredibly complicated and complex and difficult to deal with.

DR BYRON: We were talking this morning with the insurance council about the property owners being made aware of the hazards particular properties face and that sort of information and you said just now about informing both current and potential owners and so we've been giving quite a lot of thought to the question of how do you make current and potential owners aware of the hazards that will come with climate change. Could you elaborate a little bit more on the reasoning behind withdrawing of that notification. If it's too painful don't go there. It's very interesting because that is the sort of information that we've been talking about so that people are aware of what the hazards are so that they can make informed decisions.

MR LOVE (GCC): The main reason that the council has decided to remove that message is due to the lack of the consistency from one council to another. There are 27 councils in New South Wales that have actual coastal frontage although there are about 53 that are classified as coastal councils because councils that are inland that area on a tidal river are also regarded as coastal. But there are 27 that actually have coastal frontage. We've undertaken a recent survey of all those councils and there were 16 that had a message on a planning certificate that referred to sea-level rise. That was either what's known as part 2 message which is where development controls actually apply or a part 5 message which is an advisory which is the type of message that Gosford applied because we do not have development controls in place at the moment.

So there was 50 per cent or just over 50 per cent of councils with a frontage to the coast that had one form or another of certificates which means there were quite a number that nothing and councils were concerned that one council was doing it one way and another one was doing it another way and they decided to remove it pending some direction from state government to get consistency across all councils. That was the main reason for them.

DR BYRON: So what we're waiting for now is a state legislation that enables that consistency across local governments?

MR LOVE (GCC): That is what Gosford Council is asking for, yes.

DR CRAIK: So in that legislation you want the state to prescribe that a council (1) has to make a statement of vulnerability and (2) the nature of the way that statement ought to be made. Is that what you're seeking?

MR LOVE (GCC): We haven't gone into the specifics but some clear direction as to what statements do need to be made in relation to future risk with regards to climate change.

DR CRAIK: Okay.

DR BYRON: The Gosford climate change policy identifies the potential for using triggers for appropriate mechanisms. So could you elaborate a bit more on what those appropriate triggers might be and are they already being used?

MR LOVE (GCC): They're not being used. Again we're working collaboratively with other councils to try to develop what would be acceptable appropriate triggers and thresholds and also the decision-making process of how we would then implement those and use those but that project is still under way and we're still hoping to get that finalised.

DR BYRON: The very general problem that a lot of people and a lot of councils are facing is that tension between having to anticipate what the hazards will be in 50 years' time as opposed to a legal system that presumes - well, our legal system evolved in a climate-static world and assumes that once you have permission to build, then that's basically perpetual - which is quite a long time - and that tension between the flexibility and adaptability that climate change seems to call for and the rigidity that's built into our existing legal system. Does that make any sense?

MR LOVE (GCC): Yes, I guess that's what I refer to about better tools to be able to plan for a future risk and a change in environment. As a comment what the situation is at the moment generally speak is that with regards to climate change and development assessment, it's the council that are doing the risk assessment and so the investment is coming from the private sector, a member of the public. They're making the investment and council is doing a risk assessment on their investment by saying whether they're going to approve or not approve their development. Whether that risk assessment needs to shift to the person making the investment - if that is contingent upon long-term, good information being provided that informs thresholds

and triggers so that a development, for instance, could exist until such a time as when a threshold trigger occurs and so it is an event based trigger.

That then means if there is good, long-term information provided that is associated with that trigger that means the person making the investment can do their risk assessment and make an assessment of what time period they're going to get out of their investment. Now, that's quite a sophisticated way of looking at it, but it's a way in terms of large-scale development it would be the way that developers work currently. In fact they do business cases for what return they're going to get out of their investment. That's probably a big ask for a mum and dad developer building their own to do that. But what is suggested is whether they should be doing that risk assessment or getting a professional to be able to do that to assist them.

They're making that risk assessment based on the development that they're looking to put in place and there's not council saying, "We reckon you're going to get 50 years, 20 years, 100 years because we don't know and it's not our investment." That then starts to bring in, I guess, that window that the development could exist in, but that's based on a few assumptions. One is that the legislation will remain consistent for the period of the life of that development which is pretty unlikely because, for instance, with the current regime in New South Wales there may be - if there is some legislative support for this, you could put in place, say, conditions that relate to triggers. Now, currently if those triggers weren't going to be met because some protection works were put in place, then you could come and amend your consent. But there's no guarantee that that system will be in place in 20 years' time, 30 years' time. There's lots of complexities around that.

I guess the point I'm trying to make is that it's about trying to formulate and invest in a new way of looking at things, and new tools available, so you can enable adaptive management to be implemented.

DR BYRON: Then we've talked about conditional consents, not time limited but conditional, a particular event. Other people have said, "Well, that might be fine in theory but it wouldn't work in practice because if a building has been there for the last 25 years then no matter what was agreed at the beginning, once it comes under threat it will be the government or the council or somebody has to back out, even though we originally signed off that said we would be on our own if that happened." There's that - what Blair Comley would call - political path dependency, that no matter what rules were agreed at the outset, it might break down when the crunch comes.

MR LOVE (GCC): That's the whole dilemma that always faces bureaucrats is the evidence based decision-making versus the value based decision-making, and there has to be some sort of combination of the two, but you can't embark upon that

process without really contemplating, "But what happens when the trigger is met? What are you going to do?" To just say, "We've done it now, we've fulfilled our responsibilities," you've got to really consider what's going to happen when that trigger is met. What's going to happen in 20, 30, 40 50 years, and how is it going to be managed.

I'm not saying it's easy, we know it's not easy, but this is where again I'll go back to the investment in thinking and coming up with these tools that will have this long-term effect, or there needs to be a decision that's made to say, "We're not going to be looking at any controls around development, we're going to look around by protecting and those sorts of solutions and then let the people in the future think about how they're going to resolve the issue." I don't have an answer to that but I think protection, accommodation and retreat are the big decisions that need to be made to enable long-term planning to occur.

DR BYRON: Just one more. This morning we were told about some local government areas in Australia have what you'd call best practice approaches to planning and so on, and others are, shall we say, below that. Coming back to the comment about the need for a statewide or a national coordinating framework, how far might we get nationally by extending current best practice to the other local government areas? Is that something that could be done? Does it require state or Commonwealth action or is it by local government to local government levels saying, "We've got this process in place that seems to work really well and it's spreading organically." Is that a role of government to identify what's a best practice approach and then try and make it uniform nationally?

MR LOVE (GCC): I tend to think that government does have that role. I mean, NCCARF have been providing - I think it was \$96 million worth of research money has been spent over the last few years. We were involved in one of the more recent projects which is a collaborative project with other councils in our region. It seems that a lot of that research has been done in an isolated manner and my feeling is there needs to be an approach taken where that research is put together and looked at as a whole which then potentially could lead to some best practice guidelines or best practice frameworks that can then be implemented across the country and state by state, otherwise we're going to continue with this checkerboard approach which then leads to potentially adverse outcomes like we have just recent experienced. There's always going to be that case where councils are going to move forward quicker than others because they have a greater capacity to do so. But if it's all moving in the same direction within a set of parameters then I think there's less likelihood of there being adverse outcomes.

DR CRAIK: You did mention that Gosford City Council have done a lot of work on flood planning, and I assume they have put in some flood mitigation strategies

and things like that. I don't know if you were here earlier when we were discussing the challenges with the Insurance Council of Australia of how to get councils - how to get the funding or how to prioritise that and how then to get the funding for it. How did Gosford succeed in (1) making it a priority and (2) how did you get the funding for it?

MR LOVE (GCC): One of the reasons why Gosford has been successful is that there was political will. There was one particular councillor that really saw flood risk as a major concern and this is some 25 years ago. I guess our ability to be successful in getting grant funding has been very good and because traditionally or historically there has been a fairly consistent pot of money and there's been few councils looking to try and grab that pot of money, we've been one of those councils that has been successful in getting some of that.

DR CRAIK: Is this a pot of money from the state?

MR LOVE (GCC): It's a combination of both state and federal. In the last couple of years with the recent flooding events across New South Wales but also across the country - and the state government has been, in recent times, more proactive with regards to encouraging councils to do flood work, there's more hands trying to get into that same pot of money. Whether our success of getting funding into the future will be maintained, we will wait to see. But initially it came from a political level; there was that drive there and then - because we've built that good relationship with the state government that they know where we're going and they know what they're going to get from us - that assists us with us in our year-to-year approaches to flood management.

DR CRAIK: Do you have maintenance programs for any infrastructure that's been built? I know we were talking earlier about when levees are built and then they forget about them when it gets dry.

MR LOVE (GCC): Rob is one of our flood engineers, so he might be able to add in here, but we have our maintenance regimes but we only have got two levees in our area. I guess there's a number of different management techniques that we've used. One is through voluntary purchase and in one catchment 23 houses were identified for voluntary purchase some 17 years ago and last year we actually secured the last one, so it's a long process that we go through. That was a high-risk area. Generally, voluntary purchase is only used where it's a particularly high risk because it's a very costly management option. But generally, it's managed through development controls like floor levels and so on because primarily the focus of flood management is risk to life and then secondary is property damage, so we're very much focused on risk to life.

DR CRAIK: Okay.

MR BAKER (GCC): Sometimes the maintenance is not about the actual physical works that you put in, it's actually maintaining the original models because there is best practice evolving all the time and council uses the LiDAR which has been a bit of a godsend in determining true sort of values which can then be calibrated on events that actually happen, so you get some sort of confidence. I think that's what we can show with the actual modelling at Gosford, that we can relate to the 1974 storm and people get a good understanding that, yes, that's where the level was and that's what your models say, so you get quite a good neat fit.

DR CRAIK: People believe it.

DR BYRON: Yes, and it's a lot easier to tell that story, whereas in some catchments where it's not gauged or they haven't had an event where they have been able to put a mark in the tree that they can come back and survey that and calibrate the model to. That's a much harder story to tell - and that's with the sea-level rise on top of our model which is a variable sort of level - that's the harder story for us, because they haven't seen that particular height.

DR CRAIK: Okay. Thanks very much for coming along. Thanks for your submissions and thanks for your thoughts and comments.

DR CRAIK: Next we're going to hear from the Property Council of Australia. Thanks for your submission. Could you start by stating your name and your position and if you'd like to make a brief introductory statement, we'd be happy to hear from you. Thank you.

MR VERWER (PCA): Thank you. My name is Peter Verwer. I am the chief executive of the Property Council of Australia. It's with great pleasure to be back in front of the commissioners. I think a lot of the views that we're going to put forward today are encapsulated by the submission which is going to be provided or has been provided by the Australian Sustainable Built Environment Council. That is a broad group, catholic in its philosophies and tastes, which has nevertheless come up with a principle based framework which we would like to endorse. I won't go to their submission point by point but it would be helpful to touch on a few of the key issues that are mentioned there.

From the outset, can I say that the area of adaptability/resilience is a public policy arena that for many years we've thought has been underinvested in, particularly at a framework level. Meanwhile, industry has developed more and more of its own analyses within the context of a frame of a risk analysis identifying the risks, quantifying them and developing various strategies. It's been extremely difficult to do in the absence of an overarching framework. It's been extremely difficult to do when the public policy approaches which are applied in various spheres of government are not joined up, there is no coherence, there is no overriding public policy impetus. The other problem that exists is that there's not a lot of people that the major - so only institution investors can afford it, firstly. Then there's not a lot of people that we can use, so it's interesting that the market has pretty much been cornered by a few consultants. I'm happy to table what are in fact the contents pages for these risk management approaches as they relate specifically to adaptation and resilience in the built environment, but the main point is it's very difficult for us to do our job here in the absence of coherent public policy.

DR CRAIK: Okay, thanks.

MR VERWER (PCA): So if I could just reiterate some of the points that have been made in the ASBEC study. One of the big asks is that there be a collaborative approach here and then we've tried to make that recommendation real rather than a motherhood statement. I think we've called for a national built environment adaptation council. So when I first saw this proposal, I was horrified that we were proposing yet another entity, but in fact we would strongly endorse this, and there is a model in Australia. There is a model for all of what might be called public policy intersections in relation to adaptation/resilience, call it what you will. That's because there are analogies that can be drawn from an adaptation to this other public policy

area, and that public policy area is critical infrastructure protection.

Australia has an elegant, efficient, coherent public policy approach to critical infrastructure protection and it was put in place principally after 9/11 as a response to terrorism, counter-terrorism. It was founded on an all-hazards approach, that is, that we weren't just dealing with counter-terrorism, we were trying to harden up basically critical infrastructure protection.

Around this, we had a framework and we recommend very strongly that this national built environment adaptation council follow the methodological approaches, the institutional arrangements, which exist with this critical infrastructure and protection framework. They are as follows: with a CIP framework you have a trusted information-sharing network, called a TISN, and it involves all of the key stakeholders in critical infrastructure protection which is the food people and the banking people and the water people. The bit that I've dealt with is the former chair of the Infrastructure Assurance Advisory Group on mass gatherings, so sort of "people people". There's about 12 of these groups which normally don't talk to each other, are normally silent; a direct analogy to this area, a wide range of groups of stakeholders that often either don't talk to each other or exist in adversarial relationships where within the trusted information-sharing network, there was an information portal which had a hierarchy or levels of access because there's a security level which is probably not as relevant in the adaptation sphere, but might be. It created a culture of collaboration.

So firstly there was the information that was evidence based and was collected in an area that most of us had no experience in at all which is counter-terrorism which is making assessments about the resilience of a piece of plant, harbour works, a banking system or a water system. We have no experience in this area. But we created a culture of collaboration because, firstly, there was this central store of knowledge, not a sanitised store of knowledge, not a censored store of knowledge but a central store of knowledge where we, as key stakeholders, could make judgments about the veracity of the information. There was that, so this was up here.

Then there was the Critical Infrastructure Advisory Council which is where all of the stakeholders - so the food people who would like to get together for three-day meetings versus the mass gathering people such as ourselves which included all the police and some emergency services where we'd get together for half a day. Totally different styles were applied to tackling different problems but it all came together in the Critical Infrastructure Advisory Council; a very direct analogy, in our view, with the sort of multidisciplinary stakeholder, multi-interest group issues that are involved with adaptation and resilience.

I think the other important lesson is that it worked. Here are a bunch of people

with no experience in an area that managed to actually help inform a public policy process which had a national security interest but also had a critical infrastructure protection interest, that is to say, that you wanted stuff to keep running, and you wanted it to keep running whether it was a terrorist that was taking it out or because there was a storm that took it out; once again, a very direct analogy in our view. So I really can't commend enough the fact that we've got a model - as we do with so many other areas in Australia, national competition policies - that's adapted to something; critical infrastructure protection is a model in relation to adaptation that can be applied to this resilience area.

I'll make two more points about this before I move on. The first thing is that about six or seven years into this collaboration experiment, they changed the name of what we were doing from critical infrastructure protection to resilience, so the idea was that we're really trying to harden up these assets and the networks, the relationship between these assets and the stakeholders, but resilience also meant the ability to bounce back after there was some externality which occurred; once again, a direct analogy.

The final point is that a massive amount of money was spent on spatial information systems. Some of this is still classified, but I think most of it is in the public domain now. So the CIPMA database - it's got a new name now, the critical infrastructure protection modelling and analytics - which was really the beginning of starting to map everything in Australia so that it could be used for sea-level rises or storm surges but it could also be used to model what happens if there's terrorist activity in an intermodal area such as Wynyard, Martin Place, whatever.

The sort of data that was collected for that is directly relevant to the exercise that we're talking about now, which is providing people with the sort of information so that they can make judgments themselves, develop their own plans which are relevant and plug into, like apps, some larger framework. I think I've been very clear on being the number 1 high-fiving Facebook fan of critical infrastructure protection in Australia.

DR CRAIK: Before you move on, Peter, because we're short of time and I do want to chase you up on this, can I ask you a question: why, given that it's changed from the critical infrastructure protection network and associated councils and things to the critical infrastructure resilience groupings and it's an all hazards thing, wouldn't adaptation be subsumed within this structure?

MR VERWER (PCA): I see no reason why it can't become a module or a thing.

DR CRAIK: As part of the same thing rather than sending out something - a parallel process - why wouldn't you pick up adaptation as part of that?

MR VERWER (PCA): That's what I do, but the only blockage is that this thing lives in the Attorney-General's Department, so it might not seem a natural fit. If we could solve the issue of a more joined-up government, then I'm sure that there would be no problem at all.

DR CRAIK: Because attorney-generals do do emergency management stuff, they're responsible for NDRRA, a whole lot of things like that.

MR VERWER (PCA): And they've done a good job.

DR CRAIK: They've done mapping and they talk about resilience and it all came out of the AG's national resilience strategy as COAG - - -

MR VERWER (PCA): There is no intellectual barrier, there should be no physical barrier. There is no logical or conceptual barrier to us not exploring that.

DR CRAIK: Correct me if I'm wrong: do they deal with adaptation now, that critical resilience network? They must a bit, if they're dealing with resilience.

MR VERWER (PCA): Yes. If you've got a network of power stations, one of the things that could take them out is a cyclone. I think they're evolving into that area and really, I'm no expert in how the IAGs are going these days because my bit has been moved across to the National Counter-Terrorism Committee, but I think the key thing is they were given a challenge, and industry and government responded. Here, if the challenge is expanded to deal with all the issues associated with resilience and we bring in other stakeholders such as community groups, local government, whatever, they will also respond. It doesn't need to be a terrorism issue to actually get the best out of a bunch of stakeholders.

I can deal with the others very quickly. It's very important to give the information and tools to do the job themselves, not within a loose framework, but Harden Up is a Queensland initiative that's targeted at community stakeholders. I think it's been successful time and time again. You give people that information and they can work in that micro realm and they can work in neighbourhoods. We need to take the successes of what is a great sort of subsidiarity - (the subsidiarity principle) in brackets, which you don't see that often - and extend Harden Up around the rest of the country.

The third point really related to - maybe I'll make it last. Incentive is always a problem for the Productivity Commission. Mapping, we need to have the information. We heard Gosford Council before; they are a leader in all sorts of mapping, 3D, 4D technology. You can't place an obligation on local government and

then not give them the resources, the tools and the money to actually fulfil their obligations. I would have thought that given that we've already spent 30, 40 million dollars' worth on mapping with Geoscience Australia and whatever, we need to redefine their mission because their mission was originally something quite different from the adaptation that we're talking about today, but I think they're still living in their original mission which is creating a database which is going to be used for other secretive purposes and also to gain information from a whole bunch of private sector people without a clear understanding that one day they might want to use that information for something else. For instance, telco providers provide very, very important data but it belongs to the telco provider, so there's no real system for, "What if we want to use it for something else?" and this will turn out to be a big issue that needs to be solved. No doubt we could talk a lot more about information and mapping.

Then my second-last point will be on the Construction Code of Australia. There is a flavour in this document, something of a tension between the precautionary principle and the real options approach; no doubt it's just because you're flagging the particular public policy pathways or methodological approaches that could be utilised. We like the real options approach. We should apply the precautionary principle to the precautionary principle, but particularly here, the idea of creating an obligation within a building code, for instance, which is all about being very specific about the performance which is required, encouraging innovation to achieve that performance, but providing prescriptive safe harbours if you want to use that pathway to put in fairly ambiguous requirements in relation to durability or whatever is a very dangerous approach. Now, I realise that what you've said here is that it would still have to pass a regulatory impact statement and all the rest of it, but the history of the application of regulatory impact statements to Australia's construction codes is not a happy one; that is to say, it is very rare that we have seen a proper RIS apply to what was the Building Code of Australia and now the National Construction Code.

So a proper RIS is when you quantify all of the benefits and the costs on a net present basis and you subtract one from the other and you get a number. Then if you want to actually add in social or other non-economic dividends, show those as well but at least have a cost-benefit analysis. That is not the way it happens when it comes to building codes to have this threshold approach which is hard to describe and even harder to understand and not rigorous.

DR CRAIK: I understood them to use - - -

MR VERWER (PCA): If only they did.

DR CRAIK: Yes.

MR VERWER (PCA): It's important then if we're going to introduce concepts like durability, if we're going to move away from the medium term and try and create a code which deals with the ambiguity of a longer-term future within the context of climate change, then we're going to need even more rigorous high-rises. I'll end there, and I'm happy to answer any questions - - -

DR CRAIK: Okay.

MR VERWER (PCA): - - - and then the issue of incentives. The country has been built on our previous iterations of building codes and planning laws. If we're going to shift the ground there then there's something like 340 million square metres of non-residential stock sitting out there which is more than, on average, 25 years old. There's a ton of houses, depending on which version of Census you're looking at, but lots. We would need an incentive system to take that existing investment in stock and move it to a higher standard. There are various models to do that, if you wanted to go down that path, which we would be happy to explore, but most of that stock exists in the private sectors.

DR CRAIK: Can you give us a specific example - or more than one - where inconsistent approaches between state and local governments in relation to adaptation have led to unnecessary compliance costs or what might seem unnecessary costs? Have you got real examples of where there's a disjunct between levels of government that's led to financial - - -

MR VERWER (PCA): Sea level rises - so depending on which state you're in. This assumes that God is actually concerned about Australia's federation or that climate change takes into account the Australian federation because between one state line and one state and another, the planning rules specify different sea level rise heights anticipated. You can have a difference between .4, .8 or .9 metres that you've got a plan for.

DR CRAIK: Aren't the planning laws different in each state anyway? My question is - - -

MR VERWER (PCA): Should we be making it worse?

DR CRAIK: - - - does it matter?

MR VERWER (PCA): I think it does matter. Firstly, there's no excuse for it, and this is the value of framework, because we're dealing with climate change here. We're dealing with change which is at a planetary level. Why is the existence of the Australian federation, and the right to make laws differently, relevant? Surely this is

a national response to a planetary issue. Surely the answer is a framework. If there's a piece of research, it is to come up with an agreed view of what the sea level rises would be by X, Y and Z, and knowing those facts or having that evidence before them, then the planning systems would have to have a good reason to take different approaches. Now, ultimately the states and territories have the right to do what they want when it comes to the planning system by and large.

So if they decided that if there's a piece of research which has been done within this framework that we're talking about, that says, "By and large we believe there's a consensus that it's 600 millimetres or whatever," and a state wanted to do something different, at least they have been informed by a consistent piece of evidence.

DR CRAIK: Does the Property Council see any value in federation in the sense that you'll get different strategies in different states, so it's basically different experiments in different states, and some things work and some things don't?

MR VERWER (PCA): No.

DR CRAIK: The Property Council would rather see a national system across the board, rather than variations and different ways of tackling things - - -

MR VERWER (PCA): At a purely conceptual level we believe in competitive federalism. Competitive federalism works best in nations that have lots of space and territories or cantons or whatever. That way you could undertake experiments and you can look at the differences. I think competitive federalism in Australia, firstly, it's not competitive in the sense that one jurisdiction has a better idea and they want to test that idea as an act of public policy courage, and the base line is clear, the goal is clear, and we understand exactly what difference has been made because of that public policy initiative. That doesn't occur. If it did, then there would be more of a case because you'd have all of the information that's needed to learn from that competitive federalism. That's now not how it operates.

If we moved down that path in the future then the case for competitive federalism might be stronger, but in this case we're talking about a very ambiguous area, a very difficult area, one where it's probably better to take a mutual approach to share the science. It's hard enough as it is to get the information out there to stakeholders. A culture of collaboration I think would be far more difficult if you've got Tassie undertaking an experiment, and Western Australia undertaking another experiment, and South Australia doing something different, and one day we find out what the answer is.

DR CRAIK: Okay. Final question. What sort of climate information or projections do property developers need to adapt to climate change? What sort of

information do they precisely need?

MR VERWER (PCA): I think what they need is information that goes into the planning system and the building code system. The bucket that falls into, if you think of all of the hazards associated with climate change - there are temperature rises, hail, sea level rises, storm surges, bushfires, bioscience issues, so vegetation and whatever which impacts on the zoning system, or where you're allowed to put stuff. Let's call it that. The members receive information on these factors, but it's only relevant in the sense that it's reapplied into a portion of the planning system or the building code system.

I would actually like the opportunity to think about that question a bit harder and come back to you. I'm sure there's a better response to that.

DR CRAIK: I appreciate that. I think we'll have to call it a day because we're running out of time, but thank you very much, Peter, for that. If you could come back to us on that, that would be helpful. If you could follow on from that question about what are the difficulties in accessing that required information, that would be helpful.

MR VERWER (PCA): Yes. I should have mentioned the mapping stuff. The key thing to us is the maps. I see the maps as becoming part of the planning system, the development control plans, the local environment plans. You couldn't even make a development application without being able to download all this information. It would come with the rules. They would just all be in a four-dimensional, spatial development, assessment and planning system.

DR CRAIK: Thanks very much, Peter.

MR VERWER (PCA): Thank you.

DR CRAIK: For the record, Bruce, if you could state your name and position and if you'd like to make a brief opening statement.

PROF THOM: Thank you very much, and thank you for the opportunity. I'm Bruce Thom, former chair of the National Coastal Climate Change Council and chair of the Australian Coastal Society. I must say that I cannot speak about New South Wales matters because I am currently a member of the expert panel reviewing New South Wales planning and coastal law, regulations, policies and the rest, and I'm under a confidentiality commitment not to speak about that, despite the fact that I'd like to speak about it - - -

DR CRAIK: And we'd love you to too.

PROF THOM: - - - in light of the comments that have been made this morning. Thank you again. Let me start by saying, firstly, I want to comment on the actual presentation in the report itself that you've provided. I made it clear on my submission on it that I think you've underestimated the known aspect of the climate change science. We know a lot more than what you've admitted. You make the statement that you accept the weight of scientific evidence, but then you don't use the weight of scientific evidence. Figure 1 typifies that where on the one hand you have the reference to the information at the present time and then you talk about the uncertainty of the future. We know a lot more than that and the way the science has evolved and will continue to evolve will give us more and more certainty but we put probability limits around that, so in putting those probability limits around it.

You can see that the Germans have put the sea-level rise out to 2300 with huge range on that, so have the Dutch and they're prepared to think through to 2300 in terms of their adaptation planning. When we try to do this work that has been referred to by the Gosford Council for the climate change risks to the Australian coast, we went to a worst-case scenario probability. We knew that there was a lot higher probability that sea level wouldn't reach 1.1 by 2100. But by deliberately going to that level we were able then to give what we thought was a reasonable estimate of the amount of infrastructure at risk, the amount of properties at risk. Backing off that we give the opportunity for other scenarios to test higher probabilities at, say, lower sea levels.

So I am suggesting to you that in considering the science that you actually look at a couple of scenarios and you pose some questions around various levels of risks associated with different situations in Australia knowing that geography of Australia is one of high vulnerability to change and we always have been. We're the land of droughts and flooding rains. Dorothea Mackellar captured that, Griffith Taylor captured that in his maps going back to the 1911s and 12s and when he had his work

banned by the state of Western Australia because the Western Australians couldn't believe that we were a land of droughts and flooding rains. Of course we're a land of droughts and flooding rains and will continue to be so. We have to because of our latitudinal position and where we lay. Even worse, as the climate change scientists keep explaining to us, the southern annular mode has shifted south. It's not a question of it's going to, it has. Hence we have the drying trends across the south of Australia.

Look at the information that the Wentworth Group has put together in the presentation recently at the NCCARF conference on the Murray-Darling Basin. Look at the work that has been done in the south of Western Australia with the drying trends. You can't explain that simply as just a natural shift. There's something going on to our system and we can put probabilities around that. Now, having said that, I'm just suggesting to you that in redrafting the report you pick up a lot stronger on what we know about change and how you can capture it and in doing so you perhaps get rid of some of the qualifiers that run through the reports, the could's, the maybes, the possibly's and so on because in some cases we are going in a more definition direction. Sea level is rising.

What we don't know is the rate and we don't know where and what position. We can get good ideas on it and the work that John Hunter has recently released on frequencies of higher sea levels at different levels around Australia shows you a pattern. Recent work that came out in July this year on the east coast of United States shows you the accelerating rate of sea-level rise but with spatial variability. So the science is moving on this and will continue to move on this. But at the same time I think we can push this a little bit further than what you've done to date and I have suggested to you that you revise figure 1 accordingly.

There are also other aspects of figure 1 that I found difficult and one relates to the points that have been made by several people and that's about mapping and communication of information. I know from my history - and I've been around 50 years in this game so I've got good experience - politicians don't like maps. They don't like maps because that conveys threats to the voters. Why did Neville Wran back when he was premier make sure that the maps of flood risk in the Hawkesbury Nepean were burnt? He told the officers of the state they had to get rid of those maps. Why did Frank Sartor a few years ago change the information available to Blacktown Council on flood risk? Politicians do not like this and we've had the discussion already this morning about Gosford and the politics around Gosford and the withdrawal of the information that Gosford, in following the policy, tried to implement. I have to be careful I don't speak too much more about New South Wales.

But I think it's important to appreciate what the Australian government has

tried to do in recent years. One is the Australian government has tried to develop, through the advice that has been given to it, a better understanding of what these national risks are. They have produced maps. Now, this is the first the Australian government has ever produced maps in relation to coast and sea-level rise and they've linked it back to the Nexus database. Not the critical information database, we couldn't get access to that. The attorney-general wouldn't let us have it but we got NEXIS through Geoscience Australia and that was okay.

The advice that the Coastal Climate Change Council has given to the Australian government is interesting for you and the first one is that the Australian government gets and develops its own risk hierarchy, it's own risk standards for managing coastal assets that the Australian government has responsibility for, whether it's on their own land or whether it's investment, so investment in hospitals or roads or bridges or whatever it is that the Australian government has responsibility for and participates in through the emergency management processes.

The second thing that we recommended to the Australian government which is being followed up - and it's a point that's been picked up by Karen Coleman this morning - is that it's difficult for councils to work on a council area basis. Coastal processes cut coastal boundaries across councils and across states and a recommendation from the Coastal Climate Change Council is to look at the processes operating around our coast to appreciate better what is happening into the future and be able to put that into a scenario context.

The third thing that has been picked up and it was picked up in the House of Representatives report is the liability issue facing councils. New South Wales does have more protection than most other states through its provisions in the Local Government Act but certain states in Australia are resisting anything like protecting councils. I think, commissioner, you heard the case of Gingin in Western Australia when you were at the Tasmanian Sea Change Task Force meeting when Gingin explained in very sad detail how exposed they were to state government decisions and not given the information from the state government as to why those decisions were to be made and putting the council at risk as the manager of the coastal estate. Now, that couldn't happen in some other states but it does happen in - because there is not that protective mechanism. And the Baker and McKenzie report that came to the Coast and Climate Change Council highlighted the need to have consistency in the provisions for liability protection for councils.

The other area is the concern that I have, however, that councils' behaviour can be at times maladaptive and councils, because they want to protect their own assets, whether they're a caravan park or a toilet block or whatever, councils in turn will do things that are likely to cause long-term damage and problems, so put rocks on beaches and we've got many cases of rocks being put on beaches as a knee-jerk

reaction to a particular problem that that council has faced. The final point is capacity, capacity of the Commonwealth, capacity of states, capacity of local councils. We've seen since 1 July a very, very big downscaling of the capacity of the Department of Climate Change in Canberra. The team that I worked with for 18 months to produce this report no longer exists. I am still there. I think I'm the only person who gives advice to the government. I'm the only one around. The whole of that team has gone. We no longer have a specific team dealing with this or dealing with infrastructure in terms of adaptation.

That is replicated at the state levels, as I'm seeing them downsizing, and some state governments now not even recognising climate change as entities within the state. And at local government we've had the discussions already on the limitations to local government. So I'm very scared, I'm very worried that we're going into a future where we're losing the capacity of governments to understand and appreciate the nature of the problems, to be able to write the appropriate briefs for consultants, to be able to evaluate those briefs because consultants will be called upon more and more to provide the information required. Whether it be the mapping, whether it be the question of specific risks that particular properties or developments will face, consultants will be called upon. That's fine, provided you have good quality people who can do the quality assessment at the level of the public sector, so the responsible ministers will be appropriately informed and not be reliant on people who have no real understanding of the issues. I'll hold it at that.

DR CRAIK: Thank you.

MR COPPEL: Thanks very much, Bruce. You've raised many issues in your written submission and you've also raised many issues in your opening statement. I'm aware that we only have about 10 minutes so I'm going to focus on just a couple. Before I start we will be relooking at the way we characterise the science in the draft report and also the bigger one that you mentioned. That's something that we will be taking forth in terms of how we respond - - -

PROF THOM: I'm happy to help you draft it if you want to.

MR COPPEL: We have focused a lot on those areas where the science is stronger in terms of the impacts on climate change, but we do recognise there are some sort of known/unknown impacts that may be quite significant. I'm wondering what your views are on how one would better manage those sorts of risks, given that they are unknown in terms of the science and, because of that, the information on what those impacts may be in terms of - - -

PROF THOM: I guess two ways: first of all we can put probability levels around some of those unknowns in ways that can assist in, say, the planning process,

whether it be greenfield or infrastructure or brownfield in terms of intensification. To do that one really needs to have a clear understanding of a hierarchy of risk. You do not seek to put a hospital, like you placed the Cairns Hospital, in an area that is likely to be affected by an increased level of inundation on a higher sea level, let alone under the present conditions. You zone out the big infrastructure from the areas where you can have even a probability to go to 2100 or even more, then you zone those out of those harm's way areas and then you work back from that.

A lot has been mentioned about the use of the building code. There is clearly the need to have buildings - because we already have them - in areas that are exposed to current conditions of storm surges or what I call coincident events - something which you haven't really discussed very much, by the way, in this report - which is the relationship between flooding, storm surges and sea level rise. The classic example of that is Brisbane 1974, the Hunter, Newcastle, 2007. You define that relationship there so that in that hierarchy of risk you then link in the building code and the planning scheme so you do not put slab on ground buildings in areas one metre above the present sea level, the present high-water mark. You can have other forms of structure and you could use, as the New South Wales Planning Act does permit, a trigger consent process whereby you can be in a position to say, after a particular point in time, you can move.

You develop that hierarchy of risk with building code and planning rules associated with it, and have that as a national standard. What the Coastal and Climate Change Council is trying to do it has said the Australian government should establish that standard for itself. If it does that then there could be - I use the word "could" here, and I have been informed that legally there could be an obligation on the states to follow it, because if they don't, exposure through the courts could follow. That's a "could be" and it would have to be tested. However, having those Australian standards with that hierarchy of risk gives rise to continued economic use of the land, but it also would highlight - the other point I've made in my submission and my attachment - the importance of protecting the public good and that then becomes part of that hierarchy of risk, to protect the public good, and here I'm arguing for the formal introduction in Australia of the public trust doctrine.

MR COPPEL: In situations where you can't attach a probability to the risk, but you still see a potential threat from a more unknown impact, does that mean that you would ignore those impacts when you can't attach the risk?

PROF THOM: The only case where I'd think of that imposed is a tsunami; the rest I think you can start putting probabilities, yes. A tsunami, there is a probability but it's such a very, very low probability I wouldn't plan for a tsunami along the east coast and on the south east, but I would along the north-west coast, and I think the Western Australian government and the Northern Territory government do that. I

think that's one of the challenges that we, at the intersection of the science and public policy, face is how to articulate that.

One of our failures has been that we haven't done that well. The person who spoke this morning from Gosford was a clear example of where we haven't provided those sorts of residents with a clear understanding of what we're trying to do in this space. We just have not succeeded.

MR COPPEL: I was thinking in terms of interactions with various impacts where we may be able to attach a risk to each individual impact, but we're largely working blind in terms of how those impacts interact with each other. They may have catastrophic-type events, but in terms of prioritisation the tendency would be to focus on those areas where we have better information.

PROF THOM: I think the key word you used there was "prioritisation". This is a very difficult one to make. What beaches are we prepared to sacrifice in order to have infrastructure or private property protected, or around our lakes and lagoon. Ten times more properties in coastal areas in Australia are at risk from higher sea levels and coincident event flooding than they are from coastal erosion. That work has come out of this report and subsequent reports. We are in a position of having to make decisions about retrofitting infrastructure or putting in protective works and walls to look after those properties, but at the same time we can lose something. We can lose public access to the shoreline, we can lose habitat, particularly sea grasses or adjoining mangroves and saltmarshes by doing those sorts of things. We have to be prepared to make trade-offs and sacrifices. That's a difficult thing to do.

As several submissions have pointed out, is this best done at a federal level through some federal authority, such as a national climate adaptation commission, or as the Coastal Society has indicated for coastal work, a national coastal commission modelled on the National Water Commission, or is it best left to local communities to make those decisions for themselves, knowing that if one community makes that decision it's likely to create harm for adjoining communities? If certain people build sea walls you're likely to have a flow-on effect by eroding adjoining areas. The science is clear enough on those sorts of flow-on effects. What we haven't really done is articulate them clearly in a planning context.

MR COPPEL: Just one final point in relation to those trade-offs where you have advocated the use of the public trust doctrine. Can you tell us if there has been much interest in this doctrine in Australia? Is that something that - - -

PROF THOM: Since I have put this paper together at the request of NCCARF back at the end of last year - and I've submitted copies around because it was going to be published by the ANU, but the ANU publishing process stopped - I've

distributed it widely and I've had a lot of reaction to it. It has been used in Australia since 1895 in the protection of the Cremorne shore line in Sydney in a court case. It is very well used in the United States in coastal management and it's increasingly being used; the references I've given in that paper give you that story. I think it is a necessary doctrine to have because it really then will make the planning system go beyond what I call matters of consideration and provide certain things as mandatory or obligatory on the public to protect the public good.

Australians want beaches, they want access to beaches; because shore line law is so ambiguous, it's so difficult, as I pointed out in that paper, to know. You may lose your beach, and parts of our beaches are already in private property, and we have lost beaches through private property, particularly New South Wales and Queensland. So that fear that I have is one of the reasons why I'm advocating strongly a strong commitment to protection of the public good as sea level rises and storminess increases, all those sorts of things that we associate with climate change.

DR CRAIK: Unfortunately we're going to have to call a halt there, Bruce, but thank you very much for your submission and thanks very much for your input today. I'm sure we'll be talking to you again, so thanks a lot, Bruce.

DR CRAIK: Okay. We'll move on now to the New South Wales Business Chamber and Sean Molloy. Sean, when you're ready, if you could tell us your name and your position and if you'd like to make a brief opening statement, that would be great. Thank you.

MR MOLLOY (NSWBC): Thanks very much for the opportunity to come and speak to you today. My name is Sean Molloy. I'm the senior manager of policy for the New South Wales Business Chamber. I apologise in advance because I will be reading my notes; I'm not as articulate as my predecessor.

The New South Wales Business Chamber is a not-for-profit member association. We currently have about 9000 members and represent more than 20,000 businesses through associations with local chambers throughout New South Wales. This includes a very strong regional presence. Also, the New South Wales Business Chamber is a member of the Australian Chamber of Commerce and Industry and the Australian Chamber Alliance which represents the interests of over one and a half million businesses nationally.

In responding to the report, I would like to touch on a number of areas that hopefully will be able to broaden the debate amongst what has been mentioned. Clearly I'm here to represent the interests of business, I'm not a subject or content expert, so please consider my input in that light. Firstly, the New South Wales Business Chamber considers that the interests of business and in particular small to medium enterprises are paramount in this discussion. Businesses, as they have throughout history, and obviously most recently with the Button reforms, the high Australian dollar and GST, will have to adapt to new circumstances. I would think that they have proven time and time again that their resilience and ability to do so is quite strong.

Small business and business in particular - and I'm probably talking more broadly about ex-mining is under significant pressure in Australia and we want that to be recognised as part of this process - accordingly, when government is considering regulation on adaptation, these things should be managed in a clear, systemic and predictable manner. I'll come to that in a second. Also our concerns are not necessarily related directly to the generalist view but they're also regiospecific. We have a number of members such as the Murray-Darling precincts and border communities which are going to be more likely to be impacted by such adaptation changes.

Firstly, we would like to see that there is an appreciation of the central role that governments play in assisting regions in transition. More specifically, where particular areas are likely to have made significant economic or structural

adjustments, the government needs to ensure that such changes have sufficient planning in thought and in place. To our thinking, this has two elements: the first is sufficient and appropriate lead time and a regulatory environment that is flexible and responsive enough to respond to planning changes or business regulation changes that generally would be considered outside the norm, and my predecessors today have obviously outlined a number of those.

Secondly, businesses are generally efficient in adapting to new changes or they suffer the consequences. As a fundamental element of how Australia adapts to changes in its environment, the economic health of an area will determine its prosperity moving forward. The variables, as are addressed in the report, are generally uncertain. The responses from all levels of government and the information surrounding these responses need not be, and in large part will determine a successful outcome for local communities.

Overriding all of the following and preceding considerations, there is a need for strong recognition of the needs and more importantly the contribution of the business community, particularly in regional areas of Australia. Put simply, strong commercial centres are more sustainable and in the long term are better placed to adapt to changing environments.

I'd like just quickly to cover some of the barriers that were mentioned earlier to effective adaptation. Changes in the business environment will also have impact on people living in the area. As industries change and the skills resident in these areas do not suit the needs of the community, people either have to move to find work, reskill to work in new industries or companies or buy in the skills required. All such adjustments carry with it significant costs and impacts on the local community and continuity of people there.

The report covers a number of factors that impact on labour force mobility. One that is not addressed and one that is on the COAG agenda at the moment and is progressively being addressed by the newly established National Occupational Licensing Authority is that of skills recognition across national borders and local borders. There are a number of inefficiencies that can be overcome that will allow a recognition of skilled workers in other states and one would hope would alleviate the need for a tradesman, for example, on the Tweed to have to have two separate licences, one for New South Wales and one for Queensland. This is not directly related to adaptation but it is related to the factor of mobility which is an important element in addressing structural adjustment and changing communities.

We are also aware that as business changes, there is a real possibility of need for greater transport planning. The changing face of distribution and transportation will potentially mean a much greater need for certain infrastructures. This has a wide

range of implications, including the potential for recommissioning old transport infrastructure such as train lines or the further development of cold chain technology and the like to respond to consumables being moved over distances.

In respect to building adaptive capacity, the New South Wales Business Chamber strongly supports the need for state taxation reform. We continue to support any reforms to state taxation to improve efficiencies and ultimately lower the taxation burden on business, freeing up capital for further investment. The chamber would also like to have recognised the New South Wales government's recent release of our Funding Our Emergency Services discussion paper which is considering a move towards a property based levy and how this would happen.

I think a lot of the previous speakers have covered information provision far better than I will, but again, there is a real importance for critical and accurate spatial data in this area. Again, I would like to mention that the New South Wales government is currently developing its location intelligence strategy, which amongst a range of services, is looking at ways to improve access to data that include areas that are flood and fire prone and making it very easily available for public use, and this is also reflected in Geoscience Australia's efforts.

Coming to local government planning, planning activity needs to be responsible and factor in future risks that would otherwise be borne by the business. Local council is obviously the key focus here and needs to consider better risk profiling for development proposals and land use without slowing the process of applications. Local councils should work collaboratively to share efficient and appropriate systems where possible. In this light, the New South Wales Business Chamber has long argued for council amalgamation and/or a structure where collaborative buying or delivery of services can take place. This serves as an example where such changes will improve the productivity in an economy. It will also in part assist in addressing the funding constraints that many councils currently face and have raised as concerns throughout the report.

At the moment we are monitoring the New South Wales review of local government and are keen to see that efficiency is going to be a major driver in their final decisions and determinations. In response to infrastructure, there needs to be developed a long-term and integrated view. Large-scale infrastructure investments need to consider future needs and capacity, as well as responding to the changing external environment. Clearly a more resilient infrastructure development now is likely to save government and local communities significant amounts of reinvestment in the future and better address economic impact needs today. This is particularly the case when concerning emergency management issues and access. This was shown two years ago with the Victorian bushfires and obviously the emergency responses; there were a number of roads where fire services couldn't

access and they couldn't do anything about a bushfire breakout. If we're going to consider how these things are addressed, we need to start thinking forward and addressing those things accordingly. There were some other factors there which relate to fit for purpose or some other purchasing decisions that were made around those sorts of services and facilities which we can come back to. This is also the case where critical infrastructure like telecommunications and energy needs infrastructure have been placed and they also need to be moved away from areas that are prone to natural disasters moving forward.

The New South Wales government has made a commitment to release its infrastructure priorities in September this year and is also reviewing the Planning Act, the Sydney Metropolitan Act, the strategic land use and a number of development corridors. Across the border they're looking at how they address the working environment for business as well as the community. This range of activity puts the government in a strong position to develop infrastructure now that has developed with a much stronger long-term view and has adaptation considerations as part of its overall agenda and its prioritisation activity.

As you would expect, the chamber is keen to see the infrastructure that lets business get on with the job and has developed it with this longevity in mind. Most importantly in this whole process is it makes it much easier to fund if you can see a significant payback schedule moving forward. But also it saves money in the economy in the long run, as I mentioned it saves the reinvestment. We would use the same logic to suggest adaptation impacts should be used as part of the project development and fit for purpose considerations throughout the whole infrastructure development process.

In closing, the New South Wales Business Chamber is keen to provide as much certainty in responses of regulators in the business community as possible. This has a number of very clear elements: the certainty in responses across jurisdictions; logical and incremental changes rather than dramatic responses that are likely to have a number of unforeseen circumstances or, to use the report's language, spillovers; appropriate lead times to adjust the changes that are made; integrated planning infrastructure investment can maintain a strong economic development component for all industries and sectors, not just mining; an ongoing responsive dialogue with the business community that provides balance to environmental and social needs; understanding that the business cannot cover the adaptation costs in isolation and, lastly, appropriate information and explanation why government's decisions are being made and how they're being made.

DR CRAIK: Thanks very much, Sean. Thanks for coming along today and thanks for your comments and your statement. Neil, over to you.

DR BYRON: I have only got four questions, hopefully not too long. Firstly, I'd like to pick up the comment you made about more resilient infrastructure development now is likely to save the government and local communities from more significant economic impact in the future.

MR MOLLOY (NSWBC): Yes.

DR BYRON: That brings up, I think, one of the tensions in this whole area of our report about whether adaptation should be proactive in terms of forward looking, preparatory, precautionary, in the idea that given long lead times you can achieve a lot of adaptation at relatively low cost. The alternative view is let's put off major investments until we really need to. Is there that tension between, you know, acting early and doing it relatively cheap and acting sort of last minute?

MR MOLLOY (NSWBC): I notice that throughout the report as part of the debate. In some respects it comes back to a scale of investment as well. If you're thinking that's going to have a pay-off schedule, as I mentioned, of 50 years or 20 years seems to be the tendency in Australia but, you know, we would like to think that in future times and generations we start to think a bit more like the Chinese as far as we have a 50-year pay-off horizon for something that we invest money in, you would think that that would have adaptation consequences throughout its life cycle. If something is a short-term fix, a park amendment or a playground or something like that, obviously that probably is not really relevant.

In the broader sense of things there are things that can be deferred to address the uncertainty that we discussed earlier. I think where that's the case, that suggests that there is an unclear science associated with those type of investments. Flood is the good example. I'm from Brisbane originally and I look at what happened after the recent floods. There are now places which I remember - I actually knew the families who lived in those houses which are sitting barren and will be bulldozed, never to be redeveloped. If you look at that as an example, if you had put that same caveat in place 30 years ago, that's three generations of families who did live in those houses that weren't affected by the floods of 2011. There is a economic pay-off in that regard that you would say has been worthwhile in the intervening 20 or 30 years. What you don't know is that x-factor that when those things are going to happen.

I did recently make the observation to somebody that Brisbane has had two one in 100-year floods in the last 30 years and that is likely to continue if we look at the trajectory of extreme weather events, they're likely to become more and more regular. So that would, to me, bring the schedule that you're referring to backwards.

DR BYRON: That leads into the next question. You mentioned at the start about appropriate lead times. There are some things that might take decades to get up and

running and if we think we're going to need it in 20 or 30 years' time, now might be a good time to start. Other things can be turned on fairly quickly. One of the things that I think probably needs a lead time is a more flexible and "responsive" planning system. I don't know if you were here before when I was talking about the tension between having flexibility and responsiveness as opposed to development consents that are basically in perpetuity.

If we're going to move towards conditional development approvals, that's such a departure from the thousand years of British common law that we should be having conversations soon rather than waiting for 30 years. Any reaction?

MR MOLLOY (NSWBC): Government moves at its own pace, doesn't it? Not being flippant about it, I think there's a real need for local governments, state governments and federal government to understand how these things will integrate moving forward. We have seen a number of - and I guess that goes back to my point about discussing with business at the earliest possible opportunities. If you say to a business, "You know what, what you currently do is not sustainable and not going to be feasible in the position that you're currently doing it." A hypothetical example is a company that requires river bed sand or river bed filtration to make concrete and they're based next to a river. Now, if their facility is not going to be there in 10 years or the damage they're doing to the environment actually has to be countervailed by something else, well, there's some consideration that you have to be engaging with that company now for them to start looking at their exit strategies, you need to start looking at these backward processes to say, "We are going to change, there is a horizon for your business, we are going to amend the planning and the access of your land, the road access will change and in 10 years' time we're going to say that you can't have a business there so you have to start planning for that now. I think that's a responsible way of managing that type of outcome.

DR BYRON: That leads into my third point. You said about better risk profiling for development proposals and Gosford Council has just left but they made the point about whether that risk profiling should be done by the proponent or by the council. Do you have any comment about that?

MR MOLLOY (NSWBC): I think the chief problem there, and it's one raised throughout the report, is that are the people and the councils resourced to do that? Again, he mentioned about some of the bleed of capacity in some government departments - and I'm not going to specify any of those - but if you are going to say to somebody as a responsible agency, "You have the responsibility to understand what a risk rating is going to be for this particular environment," you have to have confidence in that outcome and there's a lot of times where local knowledge is paramount and local knowledge probably is a better placed person to make those sort of assessments than someone who is an objective observer and you hear time and

time again about people who - to use a very parochial example, country areas where you say, "There's going to be a flood here in five years' time, we're building a new road," and the old fellow in the pub says, "Don't build a road here because that's where the water goes," and everyone says, "You don't know what you're talking about, we're going to put the culvert 50 metres down the road," and the highway gets wiped out because the water flows exactly where he said.

It's a silly sort of example but you can see how that could flow through across a lot of these issues and to say that someone who is accustomed to the way that this particular environment works, be it in a business environment, be it in a local coastal environment, probably has some degree of understanding of what's coming. I'm not saying they're going to be familiar with a new environment that comes with climate change, I am saying that they probably are well placed to understand the dynamics and the metrics that exist in that area. So it has to be a partnership and that's where we were saying about the government and business discourse. There will be increasingly a very strong environmental wellbeing in Australia and it's already quite strong now. I'm not saying that we diminish that importance, I'm saying that it just needs to have a balance.

DR BYRON: My final question is about the intersection between the National Construction Code and the planning systems because, when you're talking about information, it seems that we've got lots of information that's actually buried in those two different systems, it's just that they don't talk to each other very well. Have you any examples or observations about intersection between planning system and the construction code in a sense of incoherency?

MR MOLLOY (NSWBC): Regrettably my colleague couldn't be here today because he is probably more au fait with this particular area. I have heard examples where this is the case and I can't give you the specifics, but I've heard examples of where different local councils have different piping regulations. So if you're going to go from one council jurisdiction to another, the diameters of your pipes are different, so you have to have couplings and things like that between the different regional councils. To me that's a fairly nonsensical thing to do for obvious reasons. I think a lot of those have been eliminated out of this process now, but again if you look at the shift of Australian demography as far as bigger houses and satellites of cities, one of the things that we probably would say on this as far as construction is concerned - and it's a slightly adjunct point but it's worth raising - is there's a lot of discussion about population growth in Australia and there's a lot of discussion about economic growth in Australia. I'm not sure if there's necessarily a lot of conversation about how we need people to get to work.

The infrastructure needs and the like that go with that are obviously fairly important. If you extend that to one more step your planning processes and how

you're going to have your population densities managed in different areas and how you're going to have to build for those things, are going to be related to where people work and how they get to work. There's no point putting a one-level house over the top of a railway, but there is some argument for putting a six or seven-layer apartment block over a railway when you manage the noise and the vibration and everything else that goes with that. There is some sense to say that rail development corridors, which is something that the New South Wales chamber has been vocal about in the past, is kind of an extrapolation of that mentality that says the planning is obviously going to, by and large, determine how your building codes are going to be working in the future if you have to have higher population densities in particular areas, or you're going to expand them along certain corridors.

DR CRAIK: Thanks very much, Sean, for coming along today and for your comments.

DR CRAIK: The final person this morning is Richard Weller. Richard, when you're ready, could you state your name and who you represent, if anyone, and if you'd like to make a brief opening statement.

MR WELLER: Yes, I'll make a few points. I only came to this late last week, so I haven't had a chance to make a lot of comments on the report or read it in a lot of detail. My name is Richard Weller, I'm a structural engineer, and I understand the basis of risk, and risk for design of buildings. That's my background on this, so that's why I've come to climate change because it influences things like wind speeds for design of structures.

I think it's most imperative that Australia increases its resilience rapidly to climate change. Changes are already happening out there, accelerating around the world. Removal of barriers to adaptation and also to mitigation is critical. The first point I want to make is that one spot in the report it states, "Within limits there are many reasons to believe the impacts are manageable." I don't agree with that statement. I think the scale of the problem is so big that the changes won't be manageable. There will be a point sometime in the future when the change becomes unmanageable. Given the world's response to climate change so far and the amount of mitigation that's gone on, I think we're heading for pretty much a worst-case scenario.

Australia's emissions have gone up 40 per cent from our possible fuel use in the last 20 years, and scientists have been warning us for more than 20 years about this issue. The world is worse than that. The biggest barrier I think to adaptation in this country is the lack of education of the public. People need to be made aware of the potential impacts of climate change, what is happening and how bad it's going to be. This lack of general knowledge has led to the influence of those who would delay or deny facing the problem, being able to create doubt in the minds of the public. I think it's a critical point that we educate the public. There are probably a number of ways to do this: public lectures; increased education of school children on climate science; collecting more information on expected changes and that sort of thing.

Government tax breaks and subsidies and regulations that support the fossil fuel industries are a barrier to increased adaptation, simply due to the fact that one part of government is working against another. If you've got one part of government supporting an industry which is not mitigating climate change, how can you ask people adapt to that potential threat. The caution over uncertainty regarding the impacts of climate change is unwarranted. The uncertainties are mostly in the upward direction towards worse, particularly in the light of the lack of concerted action in the international sphere and the tendency for humanity to be

characteristically greedy. It's almost certain that an international action will be too little and too late.

All the models in the IPCC projections are based on an assumption by the scientists that we will take action to reduce emissions. That's a very important point to remember because that means that all those scenarios are underestimating the potential impacts. I support the idea of a national body, that's been mentioned a couple of times already this morning, to make recommendations on policy and regulation for adaptation to the impacts of climate change. It should coordinate all the state and federal laws and provide a framework through which all levels of government and the private sector can operate. It needs to be outside of politics, it needs to be independent and it needs to have sufficient funding to continue its work for a number of decades because this is a very long-term situation we're facing.

I don't agree that the costs and benefits of adaptation are largely private on the private sector. That's another statement that's made in the report and I don't agree with it. Government was originally set up to organise and protect the community. Government is required to take responsibility for large-scale change and impact on the community. For example, the largest impacts on the community of a war are largely private - loss of life and property - and yet one of the main responsibilities of government is foreign policy, with the express purpose of avoiding warfare.

Climate change has the potential to be at a similar impact on the community as war, and I think we need to think of the demands on the community that were made during the First and Second World Wars in the sense that schools were requisitioned in order to put military organisations in place. Public buildings were used for other purposes because of the emergency. A lot of people's private resources were mobilised for the purposes of the war. This is the sort of effort that we might be faced with if we leave it too late to do early mitigation.

A final couple of points: it's an emergency response what we're dealing with here. I think that links in quite nicely with the protection of critical infrastructure and emergency services planning. Adaptation must be early otherwise we leave ourselves with huge social costs in the future. Somebody mentioned just now that if some planning regulations had been imposed on some floodable land 30 years ago, then we wouldn't have had the use of those buildings for 30 years. As an engineer, I could say that was an accident waiting to happen. Why put those people in those houses if we knew that there was going to be a flood? How do you add up the economic benefit of the social and personal discontinuity that occurs when people are flooded? I think that's probably enough for the moment.

DR CRAIK: Okay. Thanks very much, Richard, and thanks for your comments. Just taking up your last point, if people are aware that a place where they want to

build is actually at risk, say, of sea-level rise or potentially a flood but they're still prepared to build there, to take advantage of it while it's still able to be taken advantage of - - -

MR WELLER: It causes me concern because I know that people can build and then sell the place, so they're selling it on to somebody who may be unaware of the impact or may be wanting to ignore it.

DR CRAIK: If information is available, say, on the property title or - - -

MR WELLER: I think that's an important thing that needs to be taken into account as to who we deal with the ongoing use of threatened property and in particular, sea-level rise. I happen to be from Gosford and I know a lot of the background of what's been talked about already this morning. For instance, the vote to withdraw the note from the 149 certificate, in a council of 10 people, four of them were away, so it was two people voting against four on the council; you have to keep on mind that there's an election coming up in about six weeks' time, two months' time, so politicians are nervous about what their constituents are going to say. I have to say that not telling potential buyers something that you've been telling buyers up until some point in time seems to me negligent, so I don't believe council really has any legs to stand on for withdrawing a note which was a warning.

DR CRAIK: The issue of this business of the tension between giving people the information - I don't know if you were here when the Byron people were talking.

MR WELLER: Yes, I was.

DR CRAIK: There's this tension between giving people the information, trying to put a plan in place, undertaking pre-emptive action, whether it's the right action or not and the angst that it causes those people who are involved in that pre-emptive or anticipatory action which you state in your submission is very important, "We need to get going now, we need to get going aggressively," I think you said - - -

MR WELLER: Yes.

DR CRAIK: - - - and the issues that that causes compared with perhaps an alternative strategy of a more "see what happens" and having a more flexible process. How do you make those trade-offs? I think you suggested and a couple of people suggested setting up some kind of independent, all-knowing, all-wise body that makes these decisions. We elect our politicians to make these - because these are value judgments at the end of the day - judgments for us, don't we? Isn't that why we have political leaders?

MR WELLER: Yes, it is, but I think there's a difference between the political side of organising our response and the scientific side and the factual side. A lot of our scientific and factual side of this response has been muddied by people trying to get political advantage about it. I believe we need some sort of body that is authoritative and can provide the data. I mean, council have provided some maps to the Gosford area. Wyong Council put some maps up on their web site; they were taken down within two months. There was political pressure and they had to take them down. There's a lot of resistance to moving on it, and as an engineer, maps to me are not threatening, so I understand how they work, what they mean and why they're the way they are. I think, yes, we need better information; I mean, a map that picks up a piece of property because two square metres on one corner is flooded in a hundred years' time doesn't give a good reflection of the impact on that property. But where do we start? We just can't keep putting off responding to this emergency. We've got to start somewhere.

DR CRAIK: So you say information is the first thing.

MR WELLER: I'm an engineer. Information is my bread and butter.

DR CRAIK: No, I'm not being critical.

MR WELLER: But as the psychologist said, Rob Hall, you need to give people a solution, and this was the main problem in Gosford; the information was given to them but there was no solution. There was no, "Yes, it's my problem. What can I do about it?" Consultation would have been a big part of that, and it was missing. It's still missing largely across the community. Part of the problem with climate change is we're playing catch-up here. We've got this huge train wreck coming at us. We've never had a train wreck before of this magnitude. The whole of civilisation in the last 10,000 years has all been built on a climate where the temperatures varied about one degree. So now we've got three or four degrees facing us in this century. What do we do? We've got to play catch-up. We've got to get science which will vary as time goes by. We've got to apply that in some practical way. We've got to anticipate problems in the future. Somebody mentioned a hospital; you don't put a hospital in Woy Woy, for example; the maximum in Woy Woy is seven metres above sea level. So I just would not spend any money on any infrastructure in Woy Woy; I'd build it somewhere else.

DR CRAIK: How should adaptation be considered in planning schemes by local and state government? How should they actually deal with in planning schemes?

MR WELLER: I think a lot of this gets back to the education level. People don't understand the level of impact that we're facing and what the needs are to respond to this issue.

DR CRAIK: So how does a planning system respond to it in a way that responds to the increasing information and increasing detail of information that becomes available over time?

MR WELLER: I think what you're proposing about a national framework is vital because everybody is trying to respond but there's no consistency across the board. So a national framework for policy would be the first point of call and that really needs to deal with the longer-term issues of planning. Businesses, for instance, are only really interested in this year's financial returns and then perhaps the next year. Governments think two, three, four years if that's their election cycle or less than that. Councils sometimes have plans, government sometimes have plans that deal with 10 or 15 years, but 50 years or a hundred years is something that is not in our vocabulary and we need to introduce that and a national based policy framework should include that sort of approach. The Germans and the Dutch are looking at 2300 and a sea-level rise of five metres. That's how they're doing their long-term planning for things like ports and transport infrastructure, where they put their cities, how they defend their farmland. It's that sort of planning that we need to be doing here in Australia.

DR CRAIK: One of the comments you make in your submission and you've said it today is you think that government is set up to organise and protect the community in terms of adaptation and it's their responsibility.

MR WELLER: Yes.

DR CRAIK: Do you think private individuals have any responsibility?

MR WELLER: Of course. We all have responsibility, yes.

DR CRAIK: So how much is that and where does government take over I guess is what I'm getting at.

MR WELLER: I suppose my point for that comment is that the New South Wales policy on sea-level rise has a statement in it which says that sea-level rise is considered a natural phenomena and it's the responsibility of the property owner to deal with any impacts that might have on the property. I mean, really, we've got to open up our eyes and look at a broader view. What are the implications of the loss of 150,000 properties on the New South Wales coast? There is a bigger issue than just the private individual who owns the property. It's the broader community. We're a community based on Christian ethic of helping the underprivileged. We need to reach out to people and help them and coastal residents are just one example. They're the first example, if you like. I don't know whether I answered the question.

DR CRAIK: Maybe I'll try again. Do property owners have responsibility to manage their own risks to their properties?

MR WELLER: Yes, I think they do.

DR CRAIK: So what should they do if they know the sea levels are going to rise?

MR WELLER: There is a balancing act between the environmental impacts and the impacts on the surrounding properties and what they do themselves. So, for instance, if you're on a beach and they put rocks in front of themselves, that will increase the erosion on the surrounding properties simply because of wave reflection and stuff like that. So there is also the possibility that we will lose our beaches. You know, we'll rock revetment right along a beach, at the back of the beach and within 30 years' time it will just be rock revetment, there will be no sand there. It's a balancing act - - -

DR CRAIK: There's a chance we'll lose the beach in a hundred years too just because of the sea-level rise.

MR WELLER: Exactly.

DR CRAIK: What do we do? How do we decide?

MR WELLER: I don't think we've got much choice. We've got to protect where we can and a lot of that will come down to availability of funds. I mean, somebody has proposed the option - I don't know whether you know Gosford but Brisbane Water which goes from Woy Woy up to Gosford has a very narrow opening. It's a fairly large body of water and what could be done is you could build a barrage across the opening and when there is a storm coming you close the barrage and the storm surge doesn't come into Brisbane Water, you've protected I don't know how many thousand properties, Davistown and all those sorts of places from potential flooding. But, of course, it will only work up to the point where the sea level rise exceeds the height of the barrier.

But the problem is that a barrier like that would cost the order of \$250 million. So how do you then compete with someone like the Gold Coast who might want to build theirs or Sydney harbour. There would be lots of other communities who will want similar protections and I'm sure that those sorts of things will come up in the next 20 years. It's a balancing act. We've got to look at what we can protect, what we have to withdraw from and try and maintain our environment. We talk a lot about the impacts on community here today but the impacts on our environment are quite serious and if we lose a significant proportion of our biodiversity I've got no

idea what that's going to do to our agriculture. There is the potential for huge explosions of weeds, pests like insects and things if we start losing significant biodiversity.

DR CRAIK: I'm sure we could go on for quite a while. I think we will have to call it a halt there. But thanks very much, Richard. Thanks for your comments and thanks for coming along today.

MR WELLER: Thank you.

DR CRAIK: That ends today's proceedings. Does anyone wish to appear before the commission today who hasn't already?

MR STINGEMORE (SA): Commissioner, Adam Stingemore from Standards Australia.

DR CRAIK: Do you want to make a brief statement?

MR STINGEMORE (SA): I just want to make a couple of brief comments in relation to information, if I may.

DR CRAIK: Sure, could you say your name and - - -

MR STINGEMORE (SA): Adam Stingemore. I'm the national sector manager for building and construction with Standards Australia.

DR CRAIK: Thanks for your submission.

MR STINGEMORE (SA): Thank you. I just want to make probably two brief points in relation to information. The first one I think from a standards development perspective is that without any objective evidence of a problem or a need for change the standards that we write and maintain tend to stay at a particular point. So the first critical feature of our process is to have, as I say, objective evidence of a problem or a need for change. That gives us a necessity and it gives our committees an imperative and they base decision-making from that point in relation to where a standard might change or in relation to the need for a new standard on that evidence, so that on that information that's before them. In those circumstances it's very important that they have the best information available to them.

So technical committees find it very difficult to deal with ambiguous, sort of motherhood statements about issues because when you're looking at very particular technical infrastructure you need to have an understanding of what the issue is. We would say that information must be, first of all, useable. It must largely be empirical, so when you're looking at issues relating to technical infrastructure, it should be evidence based.

Our technical committee largely like the information to be validated. They like you to have been through some sort of peer review basis. I think also - and certainly in our submission - we make the point that it should be forward-looking. Another word for that is "strategic". If governments or industry were looking to invest in any way in obtaining evidence or information, it shouldn't be about yesterday or today, it should be about today and the next, however long. With that sort of understanding, from our perspective, of why information is critical, I think the second point I'd like to make is that accessibility to that information is key. I made the point in our submission - but I'll make it again - that the Victorian bushfire royal commission

made certain recommendations to Standards Australia and our technical committees about changes they were looking for us to review in relation to building in bushfire prone areas from a construction perspective but also from materials.

One of the first questions that our technical committees asked was how do we get access to the copious amounts of information that came out of the Black Saturday fires from a range of agencies. We're going through a process at the moment of trying to obtain some of that information. Some agencies have been very cooperative. We're going to government associations and to the private sector because they all have information which is critical to our committee understanding what they might need to do. Getting access to that information has proved to be a challenge. In our submission we made the point that some sort of repository of information - and the commission certainly deals with that in the draft report - would be of use to organisations like ours.

Without that, it's very difficult for a technical committee of experts - of engineers representing a constituent basis - to say, "We'll go from here to here," because they just have no basis on which to do so, and then they can be criticised at the end of the process for making no change when they had no reason to make a change.

DR CRAIK: Can I just ask you this: accessibility to information - and sometimes it's a challenge - is it more difficult to get from government organisations than non-government organisations?

MR STINGEMORE (SA): I wouldn't make any broad statement. Some government agencies and some who we thought would be the most resistant to providing information have been very forthcoming; others who we thought it would be in their best interests to provide our committee with information have not; the private sector also. Certain private sector organisations and institutions have great amounts of information about what happened during that event, and for whatever reason that information has been kept very close. There's other issues, of course, about respecting the disclosure. Once it comes to an organisation like ours into a technical committee, there are issues around that.

But for our committee to be given a task to do something and then to make a request to inform themselves as best they could on the best evidence they have available and then to say, "We don't have any evidence so we're not going to do anything," they can be criticised for not making any change, and particularly when you're looking at National Construction Code reference documents where you have that imperative of a cost-benefit analysis. If you have no evidence of a problem then your reason isn't going to go anywhere, so it makes it very difficult to move in those circumstances.

DR CRAIK: Do you get any criticism saying that the standards you have inhibit adaptation, impede adaptation in any way? Are you getting any criticism or commentary - - -

MR STINGEMORE (SA): There were some comments in the Maddocks report but that was largely around the process and largely around the organisation as it was probably five to 10 years ago. I think the point in relation to technical standards for the built environment is, the building minister has set policy and objectives; there's an IGA about how the National Construction Code works; there's performance criteria in the code, and the Australian standard meets those performance requirements. For a technical committee of ours to go off and start setting policy objectives about where you were going to go would misalign with the code and it wouldn't be picked up.

I think that's an important point, that we're part of that wider system which is quite sophisticated. When you look at the way that the building system and the IGA that's in place, and the Australian Building Codes Board office has been established, and then you go and look at what goes on with the planning side, it's a very different situation. I think a lot of the discussion today has been around that.

DR CRAIK: Thanks very much.

MR STINGEMORE (SA): Thank you.

DR CRAIK: Thanks for coming along today and making a statement. That completes the proceedings today. I adjourn these proceedings and will resume at 8.30 am in Melbourne on Monday, 16 July.

AT 1.31 PM THE INQUIRY WAS ADJOURNED UNTIL
MONDAY, 16 JULY 2012