



COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

SENATE

ENVIRONMENT, COMMUNICATIONS, INFORMATION
TECHNOLOGY AND THE ARTS REFERENCES COMMITTEE

Reference: Extent and economic impact of salinity

FRIDAY, 10 FEBRUARY 2006

WAGGA WAGGA

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SENATE

ENVIRONMENT, COMMUNICATIONS, INFORMATION TECHNOLOGY AND THE ARTS

REFERENCES COMMITTEE

Friday, 10 February 2006

Members: Senator Bartlett (*Chair*), Senator Adams (*Deputy Chair*), Senators Conroy, Lundy, Ronaldson and Wortley

Substitute members: Senator Stephens for Senator Conroy

Participating members: Senators Abetz, Allison, Boswell, Bob Brown, George Campbell, Carr, Chapman, Colbeck, Coonan, Crossin, Eggleston, Chris Evans, Faulkner, Ferguson, Ferris, Fielding, Forshaw, Humphries, Joyce, Ludwig, Mason, McGauran, Milne, Moore, Nettle, O'Brien, Payne, Robert Ray, Siewert, Stephens, Watson and Webber

Senators in attendance: Adams, Bartlett, Siewert, Stephens and Webber

Terms of reference for the inquiry:

To inquire into and report on:

An assessment of the long-term success of federal programs that seek to reduce the extent of and economic impact of salinity in the Australian environment, including:

- (a) whether goals of national programs to address salinity have been attained, including those stated in the National Action Plan for Salinity and Water Quality, National Heritage Trust and National Landcare programs;
- (b) the role that regional catchment management authorities are required to play in management of salinity-affected areas, and the legislative and financial support available to assist them in achieving national goals; and
- (c) what action has been taken as a result of recommendations made by the House of Representatives' Science and Innovation Committee's inquiry 'Science overcoming salinity: Coordinating and extending the science to address the nation's salinity problem', and how those recommendations may be furthered to assist land-holders, regional managers and affected communities to address and reduce the problems presented by salinity.

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Committee met at 10.01 am

CHAIR (Senator Bartlett)—I formally declare open this public hearing of the Senate Environment, Communications, Information Technology and the Arts References Committee in relation to its inquiry into the extent and economic impact of salinity. The committee has been asked by the Senate to inquire into the long-term success of federal programs that seek to reduce the extent and economic impact of salinity in the Australian environment. Amongst other matters, the committee has been asked to consider support available to regional catchment management authorities to achieve national goals. The full terms of reference for the inquiry and submissions are available on the committee's website or from the secretariat here.

I welcome everyone here today. Thank you for your time. During this inquiry we have become aware of the significant impacts that salinity can have on urban infrastructure. We are pleased to have the opportunity to visit Wagga Wagga, where we understand the community has taken a proactive approach to tackling this problem, as well as some of the wider catchment issues that salinity is raising. For the benefit of all our witnesses, I point out that the committee prefer all evidence to be given in public. If at any stage something does arise—I would not expect it would, but if it did—and you do wish to give some comments or responses in private, you may ask to do so and we will consider that request.

[10.03 am]

CHARNOCK, Mrs Paula Louise, President, Wagga Wagga Urban Landcare

GREEN, Mr Robert Richard (Dick), Owner-Manager, Go Green Services

PHILLIPS, Mr James Ritchie Hardy, Private capacity

QUINN, Dr Petrina Maria, Secretary/Treasurer, Central Riverina Landcare Network and Murrumbidgee Landcare Association

WALLIS, Sister Carmel Mary, Administrator, ErinEarth

CHAIR—I welcome the witnesses on the community panel in the first part of our hearing today. Thank you for giving us your time. I am sure you all have plenty else to do in your lives, so it is much appreciated. Just a formal reminder that evidence given to the committee is protected by parliamentary privilege. The giving of false or misleading evidence to the committee may constitute a contempt of the Senate. Having said that, this is meant to be reasonably informal and conversational. I do not want to make it sound too intimidating. Also, just to let you know, there is the prospect that WIN TV may want to take some footage of the hearing, so I hope people are comfortable enough with that if they do turn up.

The community panel before us I understand consists of community members who have been actively involved in urban salinity at what one might call the grassroots level through various voluntary activities. The committee does have a little snapshot of what each of you has been involved in locally, just to make you aware of that. I now invite each or all of you to make a brief opening statement, describing your involvement in salinity management and perhaps some of the issues that you have identified as part of that. I ask you to try to limit your opening statements as much as you can—we have only an hour with you—and that will allow us enough time for some discussion and questions as well. Are there any general questions before we get started?

Mr Phillips—Is what is discussed here confidential?

CHAIR—No, it all goes on the public record and appears in *Hansard*, unless you specifically ask for it to be confidential.

Mr Phillips—Is it confidential to the general public?

CHAIR—No, that is why we have these microphones. It gets taped and transcribed and made available. Is there is a specific problem with something you are going to say?

Mr Phillips—No. So you can talk to people after about what has been said here?

CHAIR—Yes, please do—as long as it is nice! It is over to you guys. Who would like to kick off?

Dr Quinn—I spent last night looking at, and writing a few comments to, the terms of reference. I have written up a small paper, which I will hand around. Briefly, my involvement with urban salinity is from a decade ago in the Wagga City Council area. I am here today representing the Central Riverina Landcare Network and the Murrumbidgee Landcare Association.

The first point that I wrote to last night on the terms of reference follows the recommendations from the House of Representatives Science and Innovation Committee's report, *Science overcoming salinity*. I noted that in that inquiry report the focus was entirely on land managers on agricultural land and excluded urban salinity and urban dwellers. So I thank the Senate committee here for particularly focusing on urban salinity.

That *Science overcoming salinity* report found that the perception was that salinity arose from poor agricultural practice over many decades. If we extend this notion to the major residential areas, then the public perception might be that, with respect to the rising saline water tables, it was our city and shire forebears who exhibited poor planning and development and residential practices rather than, say, acceleration of the numbers of people, the demands of large-scale housing and low-density housing, and an acceleration of our consumptive use of water in more recent times. The latter may be having a higher impact than say poor planning. If you accept that argument then you would need to extend it to the goals reflected in your national programs. I refer to the NHT, the NAP and other programs. I do not see that reflected across some of the goals in the programs. I can speak about that later in more detail.

I mentioned four recommendations in that salinity report and how I viewed things were happening there. I will not detail them here, unless you want to question me later. One concerned recommendation 15 dealing with the database and metadata components and the ability of land managers, councils and community members to access relevant salinity related research papers. To be able to retrieve those in an accessible way has not been achieved at my level of access.

I make mention of recommendation 16 on the adequate number of qualified extension staff. My view there was that we actually need hydrogeologists and specialist technical staff because of our increasing inability now to access what was once provided by these traditional face to face extension people. I think the need for us in our regional areas is more the hydrogeological and more specialist scientific and technical people and not the extension people in the traditional form. I will elaborate on that later.

Recommendation 24 includes an accreditation process for private sector salinity advisers. It is welcome for us to have at least an equivalent to that, some sort of benchmark for salinity information, to enable us to have some confidence in developing programs and their implementation, because the science is diffuse and sometimes ambiguous and conflicting with respect to urban salinity. There are certainly a couple of camps on how we have got our high saline water table, as you are now aware. In the one camp there are the ones who refer to the lateral flows, the ancient sediments and the weathering types of sulphuric, the whole-of-earth camp, and in the other camp is the rising saline water camp. Here in Wagga we have got a reasonable idea of the cause of salinity but certainly, in many other areas, it is quite complex and we do not have that data.

I make mention of term of reference (a) and those national programs and the need to have R&D at a regional level. There is a huge gap in regional R&D. I refer to new salt hazard and risk assessments to answer those questions of where the salt is, is it being modified, is it being mobilised, what are the management options best located to achieve these required outcomes, and the consequences. We have not achieved that subcatchment salinity hazard and risk management in our urban areas as yet.

In relation to term of reference (b), I strongly argue against what the House of Representatives committee concluded. It said:

... to facilitate delivery of NRM programs, there may be value in establishing all—

catchment management organisations—

on a consistent basis, perhaps through the Council of Australian Governments.

I argue why that would be inappropriate. It would stifle creativity, regional identity, enthusiasm and all that goes with locating your practice to the circumstances in which you live, and that regional devolvement and the proximity principle applies. That is not to say that national standards and national accountability measures cannot be employed, but how the latter is achieved should be reasonably flexible. In conclusion, I mention the particular conceptual problems with urban salinity.

CHAIR—Thank you for that. If it is okay with the committee, we will hear from anyone else who wants to make a statement and we will ask questions at the end. We will accept this as a submission while we are at it.

Dr Quinn—I can e-mail that to you.

Mr Green—I have been involved with salinity since 1974 when I mapped the first irrigation salinity issues in the Wakool Shire. No-one knew anything about it at all; it was more of a novelty than anything else that we actually found a patch of salt. Since then I have been involved in the broad scale of environmental issues, including salinity. One of the things I would emphasise today, and Senator Bartlett has already referred to it, is the cost of urban salinity. I extend this out to infrastructure salinity. We are not just talking about urban areas; we are talking about villages, linking roads and whatever. The recent reports that have been put out by Murray-Darling Basin and the land and water department show it is a growing issue, a growing problem. We have got 220 towns and cities within the Murray-Darling Basin affected by salinity.

The other point I would like to make is that Wagga seems to be overemphasised because we have taken it on. We are supposedly contributing one-sixth of the cost of salinity in the Murray-Darling Basin in the Murrumbidgee catchment, and Wagga itself is contributing a large percentage of the cost within the Murrumbidgee catchment. I think that comes from us being proactive and getting in there. If we have got 220 towns and cities within the Murray-Darling Basin, that actual cost of salinity they have quoted there of \$300 million a year is way down in my estimation.

If we take Wagga City Council specifically in costs of infrastructure, people will acknowledge that we are way behind in terms of broad infrastructure. A study about three years ago showed that we need \$146 million spent on infrastructure generally, which means we should be spending \$20 million a year to catch up. We are spending about \$6 million. The proportion of that attributed to salinity is probably reasonably subjective, but certainly a large part of that relates to salinity.

I would like to emphasise the enormity of the growing issue of salinity to infrastructure, stormwater, roads and so on, and also the effect on things like appliances in homes—not necessarily in Wagga but in places where high salinity is starting to occur like Yass. What is the effect on the jug that we are boiling at home, for instance? One of the issues both within the community and broadly is how we look at long-term strategies. We have a 15-year basin strategy for salinity in the Murray-Darling Basin. It is very hard for people to plan 30 to 50 years out. The Murrumbidgee catchment blueprint is really only a 10- or 15-year program, because that is what people conceptualise. It is difficult to get those NRM issues across and to get people to take them on in their daily lives.

We need a positive approach. Certainly in Wagga we have taken that. Some of the council people refer to some of the things that we have done and some of which you might have seen: water-wise gardens and our urban salinity tour, which we will go on this afternoon. Another one is the salinity glove box guide, done by the DPI and the community. These things are starting to put in front of people things that they can understand in a common language. Whilst I agree with Petrina that we need those professional people, we also need to be able to get that simple message across to people. That is what we have done in Wagga. As a result of that, we have become known as ‘the salinity city’, but we have also become known as one that is addressing it. So that is a fairly positive thing from Wagga’s point of view.

The programs and so on that have been referred to are action, support and whatever for what I would call ‘an environmental war’ within this country. We are trying to overcome this land degradation. If we compare our budgets of what we are spending on environmental issues with defence issues, it is way out of proportion. My personal view is that we have an internal war happening here that is quite insidious. The enormity of the problem is really going to be highlighted over the next few years.

Mr Phillips—My grandparents had a vineyard affected by salinity at Nichols Point, Mildura. The Soil Conservation Service of New South Wales employed me for 35 years. I retired in 1985—last century. I trained as a docent with the Wagga Wagga City Council in the latter stage of its salinity program. I constructed a model showing cause and effect of rising water tables in an urban situation. This proved to be quite a challenge, and I realised I only had a very sketchy understanding of the problem. I have received encouragement and assistance from officers of the then Department of Land and Water and from the previous and present council natural resources facilitators, Elizabeth Madden and Tony Hepworth.

I was not going to give an opinion, but something that has not yet been addressed is climate change. As you probably realise, work up in the catchment is so important because the water coming through the urban situation and irrigation system does have salt in it. It would be relevant to study the effect of climate change and how that will affect us in the future. I would also like to commend the council on their early action and open approach to the whole problem.

CHAIR—You have done a lot of work with volunteers locally. Is that right?

Mr Phillips—Not with volunteers. I have given talks with the model. I use the model to give talks to groups and I lent it to the Department of Land and Water for giving talks to the schools.

Sister Carmel—I am a Catholic sister. I belong to the Presentation Sisters, who have been involved with education around here since 1874. I run a place called ErinEarth, which has been established as a centre for education for sustainable living. It is available for the community and all local schools. We do not see it as a Catholic enterprise, although we are next to a Catholic college and sometimes we get confused. We have been very fussy about the delineation. Politically sometimes that has not been very helpful, but we have done that.

It has been 10 years since the germ of the idea came into being and we will formally open the place in September this year. It has been a long learning curve. Many times we have had to stop because we have needed funding. It has been entirely funded by us—I estimate that at least half-a-million has gone into it. Of government funding I estimate it at about \$10,000. Council have given a lot of help in kind and in cost probably about \$10,000.

The salinity component was not part of the original dream. We were given a mandate in the middle 1990s to connect with networks involved with environmental issues and more broadly issues of sustainability. This is through our sisters. We were told to establish a centre that would focus on both modelling and teaching basic skills concerned with sustainable urban living and to work to develop a deeper appreciation and spirituality of the land. We had a dream of starting with a small cottage and a permaculture garden on two disused tennis courts. The area was about 0.4 hectares.

We discussed our plans with the then mayor, Peter Dale, and his environmental officer, Sean McGhie, in early 1997. To our embarrassment, Sean suggested that we first get our own house in order. The Mount Erin Convent and gardens, with its stormwater outlets that ran directly into the railway cutting and extensive lawns, were on a recharge area. We did not know what a recharge area meant. It meant that water poured in on our grounds and probably was a significant contributor to the saline discharge in another part of Wagga. So we were somewhat humiliated. However, during that time we have embarked on a very steep learning curve which eventually resulted in the establishment of ErinEarth, and salinity issues are now an integral component of our education for sustainable living.

What is ErinEarth? It is a site on 0.4 hectares. It has a solar passive house where I live with another sister and we very often have visitors staying with us. It has water-wise house gardens that try to break the concept of lawn, iceberg roses and annuals. It offers alternatives to most thirsty gardens. We have vegetable gardens and a small orchard in process, and compost systems and chooks that are suitable for Wagga backyards. We now have a dam and wetland ponds on that tiny site, and they are filled by the stormwater from the old convent buildings. This was a salinity alleviation project that has had great biodiversity consequences. We are amazed watching it unfold before our eyes.

When we put the dam in we had a moonscape—it was in the middle of the drought. We now have a small area that contains a large selection of just about all our local plants and they have signage telling their story. We are aiming at educating people that these are the sorts of plants

that are suitable for a recharge zone, and some are ideal for an ordinary garden. All our work has been carried out by volunteers, and we have become very involved with other institutions, like Junee jail and Corrective Services. That has had accidental spin-offs but it has also changed the way we are with the land. We now have to provide quite a significant support for those people.

I was thinking about the beauty of the site in terms of salinity education. The beauty is that there is the possibility of a practical, clear object lesson for past and present stories. From a single vantage point on the site, people can see the buildings from the 1870s with the downpipes and overland gutters into the railway, and that has its story. They can see the two hospitals, behind which the saline discharge was eating away foundations. There is the other story. They now have a dam and wetland ponds which collect the water. It has biodiversity spin-offs. We are able to educate the connection between salinity and biodiversity, which is pretty crucial. We are able to demonstrate the plants that are suitable for a recharge zone by looking at them. Standing in the one spot, you see the lot.

I think the other reason it is useful as an education site is that, as sisters, we have had a background in education and social justice. Much of the salinity issue on both the micro and macro themes is a social justice issue—or it certainly has social justice implications. Here in Wagga, in the recharge zones, we have the larger homes with the more affluent gardens doing a lot of watering, and the implications are felt in the lower socioeconomic areas of Wagga. That is not always the case.

What are our needs? Our biggest need at the moment is for funding for good signage so that people can walk our sites, see the stories and be educated. We have a great advantage because we live on the site, so we do not have vandalism. And we have two good dogs. The other need is definitely that in Wagga we need teacher in-service and we need resources for teachers. We have been, from its beginning, part of a group that now calls itself the Education for Sustainable Schools Committee. That is people from CSU, the department of education, Wagga Wagga City Council, other education groups and interested individual teachers. We are working fairly closely particularly with the university in developing the sustainability stream that is now coming into the education program. But we ourselves need resources here at ErinEarth, and there must be other educational bodies that are set up by non-government organisations that would definitely play a very big role if they had education funding for those resources. We have just put in for a grant for \$34,000 to develop teachers notes, a webpage and that sort of material. If we do not get it, we will go back to the drawing boards and come up with a way in which we really could get a lot of help from government in that area. You can ask me lots of questions after this!

Mrs Charnock—I am representing the Wagga Urban Landcare Group. The Landcare group has been around for a few years now. One of the main reasons it got together and started was salinity. Some people in the community realised the effect that salinity was having and decided that they needed to do something about it. Being an urban group, our Landcare group probably does things a little differently from a lot of rural groups, but salinity is definitely one of our main focuses, and has been over the last few years. Being a community group, what we are about is getting out in the community and trying to make people aware of the issues with the salinity and doing our bits and pieces—for instance, tree planting and things like that—so that we can make an example and show people the way to go.

CHAIR—Is there any formal organisational relationship between your Urban Landcare group and Dr Quinn's Landcare network? Are you a subset of that?

Mrs Charnock—All of the Landcare groups come under the umbrella of the Central Riverina Landcare Network.

Senator SIEWERT—I want to ask a basic question up front: what is the cause of urban salinity here? Petrina, you were talking about the different types of urban salinity. In WA, we have a number of different types of urban salinity. What is the fundamental cause of the salinity here? Do you have a handle on it?

Dr Quinn—The general view is that the salinity is not of the ancient sediments and rock-weathering type, the sulphuric, but rather is of the rising saline water table, dissolving salts through the profile—those salts being deposited through windborne sediments over the millennium.

Senator SIEWERT—Is it catchment based?

Dr Quinn—I refer to the perched water table situation. It is a subcatchment. The Wagga City Council coverage is large and there would be composite reasons why subcatchments outside of the inner city area would have perhaps a mixture of those processes occurring—the cognate salt with the sulphuric model, and then rising saline water. The jury is out, although CSIRO have produced a recent report. It is probably quite complex, and we do not know because we do not have the hydrogeological information to back it up, which is an issue. Our geologies are variable, as you will already no doubt have heard.

Senator SIEWERT—In WA, we thought it was a catchment problem for the town of Meriden and it turned out that it was actually town based, because the water table was so slow moving. That meant we had to deal with the issue differently from if it was catchment based. That is why I was asking that.

Mr Green—What we have is a normal catchment situation at Lake Albert catchment and Stringybark catchment. That is agricultural; that has been overcleared, which is a fairly standard cause. When we get into the urban situation—we have had those higher infiltration rates because of overwatering and so on—we have the two things happening. What we also have is this clay barrier at the discharge end of the system. That causes all sorts of problems with our roads and our housing and causes, down below, Carmel's situation. We have just about everything, I suppose, contributing to the issue. It is to do with increased infiltration and the overclearing. Then on top of that you have the urban set up, with rubble drains and lawns and whatever.

Senator SIEWERT—What is your opinion about funding for urban salinity? The National Action Plan for Salinity and Water Quality, for example, does not fund urban salinity. Have you found that there is a problem accessing funds to deal with your specific urban salinity issue?

Dr Quinn—It has been a huge problem. Historically, in 1996-97, a couple of years after it became general knowledge in the community that we had a high saline water table, it was exceedingly difficult to access funds from national programs. You will hear this from the Wagga City Council's submission this afternoon. They were in the fortunate position to be able to sell

off an asset which gave them liquid funds to divert to an urban salinity implementation program. They will refer to how that was developed. They were in the position, which they may not be in today, of having liquid assets realised for that period of time and councillors were politically willing to spend these large sums of money on a well-designed urban salinity management plan and implementation strategy that was well received by the community—not least because of the substantial community lobbying the then Wagga Urban Landcare Group and the agencies did within the community.

So we overcame the hump of resistance which many towns will have from sectors of the community which have a lot to lose from a decline in their commercial and residential properties. But, with a plan of attack well received and endorsed by a range of community and agency groups, it provided the platform and the political will to allow council to spend their just-realised assets in such a plan. But they used their own local government assets and the in-kind contributions coming from agencies, along with the intellectual property of a hydrologist at the then Department of Land and Water Conservation, who confirmed the ways in which council might put down piezometers and have a monitoring network and the sorts of engineering solutions which you will hear about later.

But most regional towns are not in that position, and they need access to federal funds to at least begin the substantial work that then becomes a lever for a range of other sound environmental practices to follow. It is almost like when you are a land manager in an agricultural context: daily you are aware of the world around you. You are aware of the climate; you are aware of what is happening seasonally. When you are closeted in urban situations you become disenfranchised from the environment around you. As a result, you need different levers to jig you into behaving in a sustainable way. And urban salinity in Wagga and in other places, in my view, was the very lever that then became the base to move into more broad NRM issues. That is what we saw reflected in the type of extension role of council, which began as an urban salinity facilitator and then moved more broadly to be an NRM facilitator.

Senator WEBBER—You said that people have identified Wagga as being the salinity capital or what have you—although, being from Western Australia, I very much doubt that. How did we start the discussion about identifying the problem and addressing it here? You have obviously come up with some interesting ideas and worked together as a community in a model that we have not seen elsewhere.

Mr Green—If we include Wagga, but places like Forbes too, the recreational parts, like the golf club area in Forbes and the showground here in Wagga, and alongside the railway line in Forbes in the commercial area people had to put in truckloads and truckloads of fill to stop the ground being wobbly, basically, so they could build their buildings.

I am sure that a couple of people who are going to talk to you later will be able to give you the nitty-gritty, but it is about agencies and also the community. When you have those facilities, and the roads start to break up and people say, ‘What’s this?’ it is first of all just wet ground. In a rural situation it is the same thing. With boggy ground you cannot get the tractor on the plough and put the crop in. So those wet patches—the showground in particular out here—the questions were: why is the grass dying; why do we have all these bare spots? It is not necessarily very localised areas. And I guess the housing thing came into it at one stage too. That is a major part

of the cost. People start to realise and actually acknowledge and start to overcome the fear that they have got something that is a bit of an issue.

There is a range of things, as Paula said. There is the Urban Landcare Group, which evolved out of a vegetation group and then took on urban salinity as a major issue, and the realisation by the council too. So it is state agencies as well. New South Wales, certainly up to a certain period, were the only people who had a handle on what was happening in land degradation, so that is where that came into it.

Senator WEBBER—You have identified, now that they have been pointed out, some fairly obvious holes in the support that is provided and the funding you need. On the flip side of that, I would be interested to know if there is any unnecessary duplication. How do you find your way through the maze and access programs that are meant to support and address salinity, with state governments doing one thing, the federal government doing another and obviously you have a proactive council as well.

Mr Green—If you look at the local government situation, I think the local government pretty much endorse this. They are at the low socioeconomic end of the funding set-up, and they are always looking for money. The figure that Wagga put towards salinity—and other people can correct me if they like—was \$3 million at one stage, about four or five years ago, and that was seen as a great boost to addressing salinity. Quite frankly, what has happened—and I think people would agree—is that, even though that was very effective, the high profile of salinity has fallen off. That is a personal view; other people from council can comment on that. The drive is not there.

One of the major worries in accessing funding—and I suppose you hear it across all walks of life and in all areas—is the guarantee of ongoing funding. We have a major issue here in this council area now of trying to fund existing programs, let alone take on new programs, and I think that is a fairly universal thing with local government. I think it would be universally accepted that this local regionalised action and regionalised funding is the way to go, and certainly through the catchment management authorities and local government. If we look at those 220 places that I referred to, probably half a dozen are the same size as Wagga. Wagga has the staffing to be able to handle things, but if you take a little council like Coolamon where is the expertise? The engineer is probably the authority on natural resource management, and some people would say that is a bit of a conflict of interest. How do we actually get the expertise, the people and whatever in those smaller council areas to generate on a pro rata scale what we have done in Wagga?

It seems to me that, if we have a 15-year strategy, we should be pre-empting and funding programs for 15 years. Politically that does not sit too well, but we need those big funds. At the time \$3 million for Wagga sounded like a lot, but the estimate of what we need to address goes up every year. Petrina might be able to correct me here, but I think initially it was \$80 million to address and now it is \$130 million. It just goes up with CPI and whatever. It is a huge problem. The funding is inadequate, and it is going to be an increasing problem right across the country and certainly in this catchment.

Mr Phillips—A former mayor described the salinity problem as a ‘sleeping giant’. The drought, to a large extent, has taken the problem off people’s minds. At one stage, in a local

newspaper, a bit of not such good publicity came out that the problem was solved in a sense. With the salinity problem, we also need to differentiate between saving water on gardens and saving water in houses. They are two different systems. One goes from council taps through the house and, if it does not get recycled, goes back to the river. The other one has a tortuous path and, as I said earlier, also contains salt. It has to go all through the ground system and eventually back into the river by being pumped out. That is a problem in itself: how long are we able to pump back into the Murrumbidgee River?

Another angle is council being forthright in bringing the problem to people's attention. It was a big challenge in a way to highlight the problem of people being affected by salinity. As you go around, you will see the whiteness creeping up brickwork around the town. It is a pretty traumatic experience to be in a house with a salinity problem in the garden or the foundations and thinking about property values and things like that.

Senator WEBBER—I have a flippant question. What kinds of chooks are suitable for a Wagga back garden?

Sister Carmel—When I was taking this all up this morning, I thought, 'Oh, dear.' They are beautiful chooks. You are welcome to visit them this afternoon if you like. On a more serious note, I think it is important to hold together the two prongs of the finance needed for salinity alleviation projects and changing of the mindset. We have a garden at the back of our house. It is a bush garden. It gets watered about three times across summer. It has got its own really quaint charm. I have watched people walk through it—I have particularly noticed the men—saying, 'We could do this.' I have watched them look at plants and say, 'Never seen those before'. I think this is the beginning of a consciousness shift. We must put finance into a consciousness shift, to educate the sorts of groups that would visit these things, not just ours. We have had the garden clubs. We have had Woolies send their people, their garden club, down. You have Probus. You have catchment management people. You have schools. You have all the odd groups that ring up and want to come. My sense is that there is a desire for the shift but there is a fear. I think finance must be put into the consciousness shift. Also, there must be some very clever thinking and very clever marketing. It can be done, I am sure. I have watched a shift happening across the last six years. Give us both.

Senator ADAMS—The DVD was great. That has given us an idea of exactly where you are situated and where the catchment is as well. Being a farmer and given the area that I come from in Western Australia—we are right on the edge of a big salinity problem—I was wondering, knowing how agricultural practice on our property has changed, about your practice in the last 20 years in the Wagga district and in your catchment area. Has it changed? Have people really started to do things differently?

Mr Green—Yes, certainly in addressing recharge and discharge areas within the rural environment. That was forced on them by economics and, as I mentioned before, with a piece of wet ground you cannot put a crop in, so there have been perennials, in terms of trees, and things like lucerne to take up the water. We started off with mounding trees in some of the worst areas. That has gone out of practice a bit because it limits what you can do with that part of the ground. There has been planting of salinity resistant plants in some areas. Certainly there has been fencing to the land's capability to a large extent. A lot of the areas are now being brought back into production. Some of the fences have been taken down because we have started to address

the issue and the ground water has dropped in some areas. These are still fairly early days, but we have got piersometers everywhere measuring water levels and it all seems to be happening in a positive way. We have probably got a combination of acid soils and salinity. There are a lot of complex issues that we are dealing with in treating recharge and discharge areas.

Percentage-wise it is still fairly small. I am guessing a bit here, but we are looking at two per cent or three per cent of catchments being treated. Some of the catchment action plans talk about revegetating anywhere from six per cent to 15 per cent to 30 per cent of catchments. A bit of farm forestry is starting in some of the areas to address the recharge. The ongoing acceptance of standard practices in conservation farming and retaining stubble and actions like that have come not just from the salinity issue but also from soil loss and so on. That has been built into it as well.

The catchment management committee has various programs in place across the state to address a lot of these issues so that people understand the chemistry of their soil and perennial pastures. That is all happening in probably half a dozen different funded programs across the catchment. Some of the programs that you are referring to here are the sources of that funding—fairly major ones, actually. Some of those practices are changing.

Senator ADAMS—With the aerial magnetometer flying, has the area been mapped properly in that respect so that you know exactly where your salt layers are? Has there been much work done there?

Dr Quinn—The catchment management authority might be better placed to answer that question this afternoon. But, in the development of the blueprints, assessment tools were developed on discharge and recharge. Those sites across the catchment were mapped at that time.

Senator ADAMS—What about deep drainage? Is there any deep drainage through the area at all?

Dr Quinn—Deep drainage mapping?

Senator ADAMS—No, just deep drainage—putting drains in.

Senator SIEWERT—Or any other engineering options?

Mr Green—Only in the irrigation areas. I am not an expert on that area. One instance I do know of is Houlaghans Creek out here, which is now one of the major stressed creeks in the catchment because of overclearing and whatever, and it is a saline catchment. The technology shows that there is a deep stream running underneath.

Senator ADAMS—There is a dyke under there, isn't there?

Mr Green—Yes. That is highly saline as well. So with these complex things we can say, 'We have a saline creek so let's revegetate the recharge.' But then we say, 'Hang on, there's another complexity with this saline stream underneath.'

Senator ADAMS—That is the reason I asked about the aerial mapping. I had heard about it.

Mr Green—It has been done, I know. That was probably three or four years ago. I am certainly not up on the technology now, but I am sure that some of the people you have here will be able to fill you in if you want more detail.

Senator ADAMS—Because that was going to be dumping an awful lot of salt into the river, wasn't it?

Mr Green—Certainly Houlaghans Creek was one like that.

Senator ADAMS—Yes. I live in Wilson Tuckey's electorate so that is why I was asking about that. When we were in Sydney we had a number of shires coming to talk to us about urban salinity. A lot of them were very worried about land developers coming into the area, getting attractive land and then just going for it without taking any note of the drainage or environmental effect it would have. How does Wagga and its surrounding areas look at that with any land developers coming in? Do you have restrictions, rules and regulations that can ensure that those things are taken into account?

Dr Quinn—Wagga Wagga City Council might be best placed to answer that.

Senator ADAMS—I will keep that question for them.

Dr Quinn—But they have introduced new planning regulations for small rural residential areas and planning areas. A certain proportion has to be or remain treed. That is fairly recent—it changed in the last couple of years. So there are changing planning requirements for developers to adhere to. How that is then audited is very time-consuming and expensive.

Mr Green—If I can add to that, there is a DCP—a development control program—which actually nominates how much vegetation such as shrubs and trees and whatever is in these areas. It addresses things like the size of lawns, which is the landscaping side of it. But just as a general comment—and I am commenting because it is a bit of a community view or a component of the community view—it is not being done adequately. As to some of lawns out in Tatton, for instance, a comment was made to me the other day, 'Why are they still putting in these large lawns or why is council allowing it?' It might not be the council; it might be developers.

As to that Western Sydney situation, two or three years ago the development was just snowballing. It was just this monster that kept going. I think I can say this here. One state minister said: 'Well, I can't stop it. If I stop the development now to take account of the salinity which we know we're going to develop, all hell will break loose in the real estate market in terms of costs and whatever, so we'll just let it roll out.' I understand that places around Penrith are going to have massive salinity issues, and houses have now been built on there. That is a major issue that even the politicians really could not take into account as far as I understand. In Wagga we have mapping that shows where the potential salinity areas are. I understand that people are made aware of that through the council. As Petrina says, the council can give you the detail on that. Going back years, we used to map—and Mr Phillips will know about this—the urban capability of a site that was going to be developed in terms of slope, terrain and stability; I do not think we covered salinity at that time.

Mr Phillips—No.

Mr Green—We did that for Albury and we did it for Wagga, and I guess the long and short of it is that not a lot of notice was taken of it.

Mr Phillips—Not really, no.

Mr Green—The tools are there to do that sort of thing.

Mr Phillips—The guidelines were a bit misconstrued, really. You were looking at the better lands for urban development rather than—

Mr Green—Drainage lines.

Mr Phillips—Yes—or ridges or something like that. On the geomorphology aspect, as you brought up, I feel that another thing that is not thought about enough in drainage lines and things is that an effect of drainage lines and the uptake of salinity in drainage lines is wetlands. I suppose I have become interested in wetlands because they have developed one in Wagga here for schools. I just feel that they can have a big influence. They have all been virtually got rid of and wetland plants, as you know, take up high levels of nutrients. They could be harvested in turn and there would be another means of control on the broadacre areas.

Senator ADAMS—Sister Carmel, as far as the developers go, do you have any interaction with them to demonstrate what you are doing with your garden so that developers could go in and perhaps start off gardens like that rather than the big lawns?

Sister Carmel—We are on the edge of that. We were part of Solar House Day this year. It is the first time that the Sydney and Canberra Solar House Day has gone out into the regional areas. We had a different sort of clientele come into that, because it was Solar House Day—that is, it was architectural so they came to look at the house and so forth. It was supposed to be focusing on the house but to our amazement it was the gardens that people were intrigued by, because they offered different types of plants. The other thing that was intriguing for them was the local plants. We have been looking at it from the concept of reconciliation with Indigenous people being extended to reconciliation with the land. I was interested in watching them walk around. We are starting to do stories for each plant, such as, ‘I will grow well in your garden if you do this, this and this.’ I think the potential for our place to have influence is there. We have a lot of work to do.

Senator ADAMS—When you mentioned your funding, I thought that perhaps you could get involved with some large development company and demonstrate what you do. They might give you a bit of funding. It is just something; it is lateral thinking on that one.

Sister Carmel—It could happen.

Senator STEPHENS—I am very interested in the work that you are all doing at the community base, in the concerns that you have that perhaps the issues are not being taken seriously or are not being taken up and in your comments, Sister Carmel, about shifts of consciousness on the issue of urban salinity.

From a policy perspective, one of the tools of government to change behaviour is of course some kind of a carrot and stick approach: some regulatory action that could be imposed on developers or councils and some reward structure for people who comply. I wonder if that has ever been part of your conversation at a community level about what might be able to be done. What are our policy options in recommending ways to tackle urban salinity at the community level?

Sister Carmel—The council have had some strategies in the past six to eight years along those lines at a fairly minimal but important level like offering timers at reduced rates. Those sort of simple things not only save people money but make people think twice. It is making people think twice that is important, such as when they ask themselves, ‘Why would council be offering reduced rates for these sorts of things?’ But I think that should be followed up much more and more time should be put into it.

Mrs Charnock—Another one involved some work done with all the nurseries to get them to put tags on their plants to say whether it is a water-wise plant or a salt-tolerant plant to try and encourage people to plant more suitable types of plants.

Mr Green—Associated with that approach is a green card that we had. If people did the right thing they got a green card, so when they went along to the nursery they got things at a reduced cost or whatever. There have been suggestions that an organisation like Keep Australia Beautiful could be doing awards for houses and organisations that do the right thing with regard to salinity. Another one that came to mind is that in New South Wales, and probably elsewhere, we have this system called BASIX, which is to do with energy efficiency of houses and saving water and energy. Percentages in New South Wales have seen a fairly dramatic drop. We could possibly have some incentives connected to doing the same thing with regard to salinity and construction to address the issues. I think people have stopped jumping up and down about that, where they used to say, ‘This energy thing is going to cost us another 10 or 15 per cent on our house.’ We could counter that with an incentive to address salinity—a bit like the First Home Owners Scheme where they got a \$1,000, \$7,000 or whatever. To put in a damp-proof course to protect a house against salinity, I think, costs about \$4,000 for a proper system. Whatever the figure is there could be some sort of incentive to assist with that. There are things that everyone basically has to do like termite control, so why not include salinity control and give some sort of incentive for people to address the issue that way.

Senator STEPHENS—Do you have any comments, Petrina?

Dr Quinn—I think incentives are problematic because inevitably they are short term and they tend to be isolated and variable. To me, systemic approaches and policy approaches are more effective in the long term. When it comes to urban salinity west of the divide, the main game is local government. Any main policy pressures applied to local government have to be ones that have to be managed without huge amounts of resources. More and more is being dumped on local government and, frankly, it is unfair and unreasonable. They do a huge amount and account must be taken of the much broader portfolio in NRM that local government are now required to engage with. This sort of short-term incentive notion does not sit too comfortably with me. Embedding solid, sustainable practices across all divisions of a local government through good planning is required. It has to be across all the planning mechanisms afforded in local government—the broad spectrum from management plans to control plans and DRCs—and they

have to be integrated. Too often urban salinity along with everything else in NRM is a bit fragmented. This is problematic. There is fragmentation of NRM across all levels of government. In terms of urban salinity, I suggest that systemic approaches are better.

Mrs Charnock—Coming from a community group, I agree with Petrina in that you have to have more than just incentives. If you are a group where people come to you and ask, ‘What can we do?’ incentives are a great thing. You can say, ‘This is available; that is available.’ When they are just finding out about it or learning about it, an incentive is like a carrot in front of their faces. It is a great way to start to tackle it, start to help them to understand the issues and problems and start to change the mindset of people so that the mindset becomes the normal way rather than something that is way out there.

Mr Phillips—The council natural resource facilitators are at the forefront of organising and also at the forefront of dealing with the media. I feel that to maintain councils and people like that is most important.

Sister Carmel—I would like to endorse what Jim has just said. We would never have been able to do what we have done without the help of the council and their natural resource facilitators. I sometimes do not think that the elected council members have an understanding of the important role they play right across the community. It is very important. Even their networking and their sense of the overall issues is excellent. We are very grateful to them.

CHAIR—We need to leave it there, unfortunately. Can I just thank you once again. Also, we are hoping to report by the end of March but we have another hearing or so. If you leave here and have a thought and think, ‘I wish I had told them that!’—particularly a thought about ways in which the existing programs could operate that would further encourage community involvement or identify some of the barriers to more community involvement—please shoot them through to the secretariat. Thanks again and good luck with your ongoing work.

Proceedings suspended from 11.07 am to 11.31 am

BUGDEN, Mr Gregory Bernard, Business Manager (Investment), Murrumbidgee Catchment Management Authority

FRANCIS, Mr John Leslie, Program Manager, Sustainable Ecosystems, Murrumbidgee Catchment Management Authority

CHAIR—Welcome. Thank you for giving us your time today. You are reminded that the evidence given to the committee is protected by parliamentary privilege. The giving of false or misleading evidence to the committee may constitute a contempt of the Senate. I also remind you that should you at any stage wish to give your evidence, part of your evidence or answers to specific questions in private you may ask to do so and we will consider your request. We will make this reasonably informal. We would just like to hear of your experiences and how government programs can be made to help you do your job even better. I now invite you to make an opening statement and then we will have questions.

Mr Francis—I might kick off at a catchment level and then move onto specific projects and programs. The information we use to make decisions in the Murrumbidgee catchment is derived first of all at a basin scale, and a salinity audit is done by the Murray-Darling Basin Commission, with specific information for the Murrumbidgee Valley. A lot of our catchment targets for improving the natural resources of the Murrumbidgee were derived from putting together the catchment blueprint, which was finalised in 2002. Supporting information for dry land salinity is held in the technical addendum, which I will leave with you, if you wish.

More recently, with the formation of catchment management authorities, we have put together, as required under the act in New South Wales, a catchment action plan—and a draft was on exhibition during November—which talks about the assets of the Murrumbidgee. That is a change from the blueprint in that it talked about degradation issues. We are now talking about protection of key assets, which are: land, water, biodiversity and community assets. Hence salinity is not featured as a theme in itself; obviously it is not an asset. The catchment action plan now talks about the water quality asset, and priority actions within that address dry land salinity and irrigation salinity. That being the end of the catchment overview, I will hand over to Greg Bugden.

Mr Bugden—John spoke about the two different forms of salinity: dry land and irrigation. As far as dry land salinity is concerned, we have 12 priority catchments above Wagga, where we are spending a lot of money with Landcare groups in a targeted fashion. We go into those individual catchments, and we can identify the subcatchments that are saline and those that are freshwater. The first catchment we dealt with was the Kiamba catchment under the interim priority funding. We spent about half a million dollars in that catchment targeting a reduction of salt estimated at about 2,800 tonnes per annum. We have a budget of about \$16 million per annum, half of which is spent in the irrigation area. So we have the Coleambally irrigation area and the Murrumbidgee irrigation area in the lower part of the catchment. They have land and water management plans that have been signed off by the state and the Australian government. They go for 15 years of state and Australian government funding with a corresponding 30 years of land-holder funding.

The Murrumbidgee irrigation area, with the implementation of its annual works program, reduces the salt load to the Murrumbidgee by about 5,000 tonnes per annum. Coleambally discharges into the Murray catchment, so there is no direct impact on the Murrumbidgee. As far as the economics go, there are a number of documents that talk about the on farm options and the economic cost benefits associated with those two plans.

Additional to the dry land areas I spoke about, the first being Kiamba, over the last 12 months we have addressed the Yass catchment, the Muttama catchment, the Jugiong catchment, and we are bringing two additional catchments into our funding for 2004-07. Basically, each of those catchments will receive about half a million dollars per annum, and it is an integrated land management package on each of those individual properties. So we are addressing the detection of remnant vegetation in high recharge areas, encouraging land-holders to manage native vegetation, low grasses and the sowing of perennial pastures as well as fixing up the saline scalds. We have mapped all the saline scalds in the Murrumbidgee catchment, so we will be using that as a tool to come back in and focus on really reducing the salt wash-off from saline scalds into the Murrumbidgee streams over the next three to four years. Principally our major target is to fence those off and sow them down with salt tolerant vegetation.

The other major project we are looking at is urban salinity. In the first year, 2003-04, we spent \$400,000 on, firstly, allocation of funds to Wagga Wagga City Council to help with the implementation of their urban land and water management plan, and then to bring new towns that have emerging urban salinity problems on line with the management plan. Those are Junee, Cootamundra, Griffith and Yass. In the second phase of our funding from 2005-07, we are bringing in 10 additional towns. Any town that has the slight sign of early urban salinisation, we are working with the council and the community to develop the management plan and, subsequently, there will be funds to implement those recommendations. I might leave it at that.

Senator STEPHENS—Thank you for that information. It is very useful for us. You say that you have mapped the saline scalds in the catchment and, as the next step, you have fenced off some areas. What other longer term strategies are you—for want of a better word—imposing on land users around those scalds?

Mr Bugden—Firstly, we have a targeted vision. We are spending money in the right location, which is supported by science. We have a number of investigations and linkages to research and investigation which is put on ground. So we are looking at an individual catchment—the Yass catchment. We can go into that catchment, working with the Landcare community, and target those properties that need to have works implemented on them. We are able to use scientific tools. We have a tool that can measure the land use change and tell us whether we get a positive or negative benefit in relation to salt discharge and the volume of water that is taken up by that activity. In essence, we then develop an individual contract with the land-holder for that land management change.

The works are normally done within the first 12 months. Those works are the fencing out of riparian areas, fencing the saline scalds, putting salt tolerant vegetation in and enhancing the vegetation in the high recharge areas. Then we have a corresponding contract with the land-holder to manage the native grasses over the next 10 years and the perennial pastures on that property. We have an education program at present, run through the Department of Primary Industries, that enables land-holders to understand what the best management practice is for both

native and perennial pastures. We are now looking at paying stewardship payments for the better management of that perennial pasture over a 10-year period. We are just finalising a paper for our board on the science behind that—how we can come back and target individual properties that need to be subsidised by way of a stewardship payment.

Senator STEPHENS—When you say that you have developed individual plans with the land-holders, are they enforceable?

Mr Bugden—No, it is a voluntary process. The extension officer meets with the land-holder and talks about the suite of activities that the Murrumbidgee CMA has in relation to investment on that parcel of land. The communication is then one of the land-holder talking to his family members and so forth and coming back with a proposition for how he would like to take up those options. That is then formed into a contract and implemented over the time frame that I spoke about.

Senator STEPHENS—I have a final question, if you could possibly make some comment on it. How has the drought affected your planning strategy?

Mr Bugden—The drought has extended most of our programs by six months. We were able to get involved with the fencing and ripping in relation to preparation. A lot of vegetation will go in—tree planting and sowing of perennial pastures—in the next autumn. Obviously the drought has dropped the water table in a lot of these areas, so we are seeing reduced evidence of saline scalds, seeping and the like. That is reflected in the data that we have collected over that period of time on salt concentration in streams. We are seeing bores that were installed to lower water tables in urban areas turned off because of the impact of the drought. When we get back into our wetter periods that is going to be fresh on the agenda, and we have strategies to put in place to address those issues.

Senator ADAMS—Further to the questions on on-farm practice, do you have many property owners who are not prepared to take up your contracts?

Mr Bugden—If we use the Kiamba project as the first example, we can say that probably five or six land-holders did not want to partake in the process because it was seen as a government activity. To find out more about that process, we will run a social survey to go back and poll those land-holders who were contacted by the extension officer. A certain number of land-holders will not participate but, once the extension activity occurs, generally speaking in the first year you get the early adopters, in the second year you get those who sit on the fence and observe to see how things have gone, and then you get an increase in the uptake after that.

Mr Francis—I might just add to that, if I could. Each of those programs has been put in place in conjunction with the local Landcare network. We have a partnership with a team there who give us feedback on the best way to pursue those land-holders within those subcatchments. They assess each proposal and assist us in finding the best way to direct those slower adopters. Community partnership certainly assists in that regard.

Senator ADAMS—I am a farmer from Western Australia, right on the edge of the wheat belt. Like everywhere else, labour supply is absolutely crucial to us. Our Landcare projects, fencing and a number of other different things such as planting perennials have all of sudden come to a

grinding halt because people cannot afford the time or they cannot get anyone extra to come in and do the work. So we are having a bit of trouble just with the labour supply.

Mr Bugden—For the overall extension project, we valued the work that the land-holders had done in the five years prior to our arriving at their door. We looked at the alignment of their work to the blueprint and catchment action plan. If land-holders were managing perennial pastures, we gave them credit points for that, which reduced their cost in the cost-share on a one-to-one basis for fencing and labour and so forth. So we were able to get contractors in to do the ripping. Land-holders use their land management activities to pay for that by way of a credit, if you understand what I mean.

Senator ADAMS—Okay.

Mr Bugden—So it was an in kind contribution to the package by way of their ongoing management. The five-year period was seen as being a reasonable time as far as retrospectivity goes. That has gone down pretty well with a number of the Landcare groups. Other groups, because it is all cropping and there is very little opportunity to pick up best management practice, have to put their hand in their pocket and find the one-to-one dollar contribution.

With our new projects, we are coming back and looking at how we can address this issue. We did that in relation to a recent fire in the Junee area, where there are a number of projects that the land-holders could pick up. But they are cash poor—they are basically going into survival mode. They are saying, ‘We will not be able to utilise the fencing or the pasture or whatever because we have not got our matching dollar.’ We do not know what the answer to that is going to be.

Senator ADAMS—This is much the same type of thing as in WA. It has got to the stage where they have not got the labour and things are not going quite as well as they once did.

Mr Francis—Because we are operating at such a large scale, we have been fortunate in finding providers who will provide labour as well. In those catchments Greg mentioned, we are getting trees in the ground—so the tree and the planting of it—for 80c a tree because of our large contract. That is of assistance to land-holders as well—not having to plant.

Mr Bugden—Similarly, we are getting organisations like scouting groups and Greenfleet, who are looking at carbon credits and so forth, coming back and organising manpower. That enables the land-holder to do the preparation and the weed control. The resource intensive planting of trees is undertaken by a supportive organisation.

Senator ADAMS—That is good. We were in Sydney and we had a group come and talk to us about the developers coming in—this was in an urban situation—and buying up large tracts of land and not really taking into consideration for drainage purposes the fact that there had been wetlands there and building over the top of them. Do you work with the developers to make sure that these sorts of things are not done?

Mr Bugden—You will hear from Wagga City Council a bit later on about that situation. In essence, prior to CMA the government department of the day assisted Wagga City Council to develop a land and water management plan, and all those sensitive areas have been mapped. The areas that could become saline in the next 10 or 15 years have been highlighted and so forth. Our

best available knowledge has been mapped and we can start to plan where urbanisation should go.

I spoke about the 10 new towns that we will be working with this year. It is a matter of raising awareness, because there is a fair bit of apathy there because the water table has dropped. Urban salinity is going to come back in these towns, so we need to raise the bar in relation to education. You would have heard some of those stories this morning in relation to some of the community groups in Wagga. We are using that information to in relation to these 10 towns to work out what is likely to happen and where we can do works on the ground to mitigate it. Then the responsibility is on the developer to pay for some of that land use change, or the incumbent is going to take over that land. The vision is that certain land classes will require 100 per cent vegetation, some 20 per cent and some 30 per cent. Some of those saline scalds need to be fenced out and so forth. That gives the council the platform to move forward.

Senator ADAMS—I have one little question on Houlaghans Creek. What has happened there? Have you been able to stop that large amount of salt going into the river?

Mr Bugden—That is an interesting point. Houlaghans Creek is not one of our 12 priority catchments at this point in time. It is one of the extra six that we are looking at. Houlaghans Creek does not run continually; it only runs occasionally, so its impact so far as salt delivery to the Murrumbidgee goes is very slight.

Senator ADAMS—Even with the dyke underneath?

Mr Bugden—That is right. We are looking at that in relation to a current suite of rapid catchment assessments we are doing in the catchment. Obviously, we had to defer that project until the catchment started to run, but we are working with the best available science to come back in and prioritise the 12 new catchments we should be working on in the next four or five years. At this point in time the data suggest that Houlaghans does not impact on the Murrumbidgee in the way the information that is out there would lead one to believe.

Senator ADAMS—That is the reason I asked. We have been led to believe that it dumps a lot of salt in, and I thought that this river flowed all the time.

Mr Bugden—If you ask me where our main priorities are, they are the Muttama, Jugiong, Yass and Kiamba catchments compared to the Houlaghans catchment. There are certainly scalds in the Houlaghans catchment and there is evidence of saline lands, but the catchment is such a big catchment and the fundamental is that it is not running each day. It would only run three or four times a year.

Mr Francis—And some years not at all.

CHAIR—Thank you.

Senator WEBBER—You were talking earlier about the plans you have developed with the individual land-holders. I was wondering whether you could give me a bit more information about how those individual plans fit in with your overall plans and the interaction and the impact that they would have on one another.

Mr Francis—I will start from one end and get through to evaluating the performance. First of all, we use catchment models to predict the outcome of the land management change, plus rapid stream assessment. In every subcatchment in our valley you will have some streams that deliver fresh water, some that are very saline and some in between, so we are targeting the most saline. Using the model, we will ask, ‘Let’s predict we’ll get 5,000 hectares of land use change. What impact will that have at the end of the system?’ We try and evaluate that to start with and target which land-holders we want to work with and what parts of their farms. Obviously, you go through an implementation program for two to three years. You do not always get the farmers that you would like, and it may vary a little. Our plan is to then re-run the model given the actual data of land use change and then predict the impact at the end of the system. As you would realise, with dryland salinity, there is a lag time and a lot of variation due to climate. The actual data, whilst valuable for inputting into the model, does not give you instantaneous results, as you could imagine.

Mr Bugden—The addition to that is that there are a number of dryland land and water management plans that we are dealing with, so we are looking at the spatial situation to link each of those properties by way of corridors and biodiversity. I spoke about farm forestry being an important strategy in our land use change. We are looking at, in some instances, developing an auction system, so we talk to land-holders about where we would see the forestry going spatially in a coordinated fashion. Each individual property would have a percentage of the property going to forestry and a linkage in relation to the biomass we need for sales and so forth. Similarly, with the two land and water management plans in the irrigation area, there is very much a linkage in relation to what happens. It is not isolated; it is coordinated in the big picture situation.

Senator SIEWERT—I am interested in the stewardship payments. How do you see them being implemented? Where are the funds coming from?

Mr Bugden—If we talk about the existing projects that we have looked at, our first project under the interim funding in 2002-03 sought to protect 7,000 hectares of high-conservation vegetation. We had an extension project that brought to light a number of land-holders who had HCV vegetation. We had a scoring system. We went onto the property and looked at the benchmark for what the vegetation is doing then. Then we spoke to the land-holder about where it could go in relation to management and so forth. We derived a figure in relation to that management as a one-off instalment. Then there are supplementary payments over a 10-year period. Obviously, the issues of monitoring and evaluation are important. We have decided to come back in possibly years 3 and 8 for extra instalments. That is with management of native vegetation.

The new theme that we spoke about in relation to perennial pasture management of native grasses is one of coming back and looking at the soil type and the location and working out the infiltration rate through the soil profile. We look at how many megalitres of the sections we are getting per annum with current land use. If it has changed through a perennial pasture, what does that mean in relation to the reduction of tonnes of salt in the Murrumbidgee? We are hoping to derive an instalment again. The money is coming from the National Action Plan for Salinity and Water Quality. The project is obviously funded on an annual base, so we are looking at setting up a trust fund so that that money can be put aside and paid forth over the duration of the contractual arrangement over the 10 years.

Senator SIEWERT—So you are taking a bulk amount of money out of the NAP money, and putting that in a trust and then using it; do I understand you correctly?

Mr Bugden—That is the intention, yes. And we are seeking approval for that.

Senator SIEWERT—I was going to ask whether that has been approved yet.

Mr Bugden—We are in the process of having it approved by our board, and we are talking to the state government audit system in relation to how we can actually do that, and then we will go back to the Australian and state governments to have it approved from the joint—

Senator SIEWERT—And have you any indication of whether they are going to approve it?

Mr Bugden—We will wait for our board to consider which way they want to go and then we will move forward on that.

Senator SIEWERT—I am interested in seeing whether NAP will actually pay for a scheme like that.

Mr Bugden—We can provide some feedback on the duration after our—

Senator SIEWERT—That would be great. The next thing is: with the perennial pastures, I am presuming that they are being grazed?

Mr Bugden—Yes.

Senator SIEWERT—So are you looking at how much a farmer would have got out of that if it were in some other annual pasture, and then comparing it to a perennial pasture? Why I am thinking that is that in Western Australia with lucerne we are now at the point where we are going, ‘If you were managing that properly, you should be doing as well as, or better,’ depending on where you are, obviously. It is just a grazing system. So why are you doing it?

Mr Francis—I guess there are two aspects: we are observing a greater need to expand the area to get our outcomes, and we are only focusing in on the environmental service provided by the perennial pasture as opposed to the economic productivity it provides.

Senator SIEWERT—But if it is actually just as good a farming system, why do it? I am just asking because we have taken a very different approach in Western Australia. Where it has been innovative we have supported it, and once it becomes part of your best management practice, we are saying, ‘You are making money out of that anyway.’ I am asking, why wouldn’t you be doing that?

Mr Francis—As Greg explained, our current system is education programs, on-farm advice and best management practice, so we are working on that angle as well. But we are finding that—and from my own personal experience—it is driven, certainly in part, by the economics of cropping versus livestock.

Senator SIEWERT—That is what I am getting to: what is the fundamental reason you need to do it?

Mr Bugden—It is a targeted land-use change in relation to the health of that catchment. If we do not intervene, we will have persistence of cropping.

Senator SIEWERT—Yes; sorry; I understand the need for intervention. Are you saying that it hasn't yet become best practice economically for them to do it, so you need to facilitate it?

Mr Francis—That is exactly right.

Senator SIEWERT—In the longer term, would you expect that you will not have to because it will have become accepted best practice?

Mr Bugden—Probably, in some of these discrete catchments; we will have to look at that and see how it goes. But we are using it as a pump. So we are looking for the vegetation to be grazed at a certain level, and we are basically saying to the land-holder, 'We are going to pay you a stewardship payment to take your stock out for three or four months. When it is safe to come back in, bottle up.' And those rules have been set by the relevant departments in relation to productivity and sustainability.

Senator SIEWERT—I am just trying to get to why, in these circumstances, you need to do that.

Mr Bugden—We have got market failure. We are not seeing the land-use change that we need and, in relation to our catchment action plan, we need to intervene. That is the proposition we are putting to our board.

Senator SIEWERT—My next question relates back to the bigger picture. You talked about identifying your key assets. What process do you go through to prioritise which assets you need to deal with, with a limited amount of money? I know that you have got a management plan and you have only got a certain amount of money to spend, so how do you work out which ones you prioritise?

Mr Francis—It is dependent on which issue or asset you would like to talk about. For water, we have gone through the prioritisation process for targeting salinity works to improve water quality. For biodiversity, it is about delineating the high conservation value communities and the ones that are under threat and have been way overcleared.

Senator SIEWERT—How do you do that, and what databases do you access?

Mr Francis—It is wherever we can access data. For biodiversity, the Department of Environment and Conservation hold a lot of that data.

Senator SIEWERT—Do they let you have access to that?

Mr Francis—Yes.

Senator SIEWERT—In a way that is manageable?

Mr Francis—Yes.

Mr Bugden—We have a staff member on secondment from the Department of Environment and Conservation working with us. That relationship is excellent in getting information for us.

Senator SIEWERT—So you do not have a problem accessing information. We have heard that people—and I know this is the case for people in WA—have problems with accessing data in a manageable way.

Mr Francis—Data can always be better, and we are continually working at that, but we have no data access issues. That has been pretty well solved.

Senator SIEWERT—So you go for the highest value in the conservation side of things, don't you? Sorry—I distracted you.

Mr Francis—Yes, the highest value, and that is related to how much clearing has gone on in that particular community in the past and what the current threats are. That is how it is determined.

CHAIR—Can I ask as a final question: can you give us any indication of your assessment of the overall adequacy of the support and assistance you get from the government levels, whether it is state or federal, and ways the resources that are there, whether it is data or money, could be used in a more effective way?

Mr Francis—I think there is opportunity to improve the monitoring of natural resources and the reporting on their current state. You have local government, state governments and Australian government interests and research organisations. My personal view is that, if we could pool that in a better way, we would be better able to report on progress or otherwise of the state of natural resources. That would assist us in reporting to government on progress or otherwise. That is one suggestion I would make.

Mr Bugden—On the financial reporting we have different masters. We are reporting to the state and the Australian government and ministers. They are asking for different types of reports and it takes a lot of time and energy to prepare those. On the issue of funding, we were set up with interim funding. We currently have three years of funding which we have to disburse in 18 months and we have been told that the NAP funding may not be as great in the year 2007-08. There is going to be a reduction of funding. So we are getting these peaks and troughs. We need to flatten it out so we can plan. We have contractual arrangements with the two land and water management plans which are looking at accelerating funding in that critical period to catch up in relation to previous funding that was not allocated. We need to sit down and talk about those sorts of issues that we looked at.

Senator ADAMS—How do the local government and your management get on? Are you working together well or having problems?

Mr Francis—It has certainly been a mandate from the New South Wales government to improve those linkages.

Senator ADAMS—Relationships.

Mr Francis—Yes. The opportunity at the moment is that most local governments are reviewing their local environment plans, and we have been working with local government in the development of the catchment action plan, having consultation directly with local government on how best to develop our plan, keeping in mind that local environment plans and the catchment action plan need to be complementary. At a planning level, that is certainly happening. As for our projects, we have partnerships with local government and memorandums of understanding with some, and we are pursuing that further. Typically, where we can have joint projects seems to be where local government shows most interest.

Mr Bugden—Additionally, senior staff meet with each local government body on a regular basis. The actual board travels throughout the catchment annually and we meet with each local government body and allow them a session in our board meeting to raise their concerns and so forth and look at win-win solutions. So there is strong interaction and it carries on throughout the year.

Senator ADAMS—Are you breaking down the parochial barriers between country towns? One is going to do this and one is not, and you have got someone up the catchment who—

Mr Bugden—The targeting aspect of the catchment action plan and the vision is spelt out, so there is not a lot of opportunity for indiscreet favours that are not related to the overall vision. The big effort over the last 12 months has been to explain the programs that are available and how local government can be involved in that situation. The main one is urban salinity, and we are doing a lot of work on that with local government people.

CHAIR—There being no further questions, thank you very much for your evidence. We are hoping to report around the end of March, but we are still finalising that. We have got another hearing in Canberra in a couple of weeks. If you have other information that you want to provide to us, please send it through to the secretariat.

Mr Bugden—So on that question of stewardship payments, as we progressed through that it would go to the secretariat and be dispersed to committee members?

CHAIR—That would be much appreciated, yes.

Senator SIEWERT—Even if it is after we have reported, I would be really interested in it anyway. I think it is a really important issue.

CHAIR—Thank you very much.

[12.06 pm]

GLEDHILL, Mr Robert, Chairman, Lachlan Catchment Management Authority

GLENNON, Mr Christopher Peter, General Manager, Lachlan Catchment Management Authority

CHAIR—I note for the record that you have provided the committee with material, which there being no objection the committee accepts as a submission. Thank you for that. We will peruse that as we go. I welcome you formally to this hearing. Thank you for giving us your time today; it is much appreciated. I gather it is a two- or three-hour drive each way to get here, which is probably just a brief stroll for people in regional Australia, but nonetheless I am sure you have got lots of other things to do with your time, so we appreciate you taking that much time out to tell us your views today. There are formal reminders I am required to give: that evidence given to the committee is protected by parliamentary privilege, and the giving of false or misleading evidence to the committee may constitute a contempt of the Senate. Also, should you at any stage wish to give some part of your evidence or answers to specific questions in private, you may ask to do so and we will consider your request. I now invite you to make any opening statement you would like to make and then we will move to some questions.

Mr Gledhill—Thank you very much for the opportunity. I think it is very important that we talk to one another on this issue. I will just say a couple of opening remarks and then I will hand over to Chris. Our No. 1 aim in the Lachlan Catchment Management Authority was to have community acceptance of the CMA because it was something new, and we needed to make sure that we had local government on side. I might just mention here that I am a past vice-president of the Shires Association, and I am still a mayor. I have been mayor of my town for 15 years, so when we have our meetings I carry the local government flag as well.

CHAIR—What town is that?

Mr Gledhill—Boorowa. When I said community acceptance, we are just about to sign off on our 1,000th project in the Lachlan catchment in the last 18 months, which roughly totals \$30 million. The important message there is that out of that \$30 million \$14 million has been provided by the New South Wales state government and the Commonwealth government. The other \$16 million is private money that has come in from outside, and the list of people who have been putting those dollars in is in the papers we have provided. They are people like TransGrid, Country Energy and local government. I think that is an important message: that for every dollar the government is putting in we are managing to get outside dollars in as well. That can only grow. Acceptance in the Lachlan by the community is unbelievable. I will hand over to Chris.

Mr Glennon—You will find that, because most CMAs are set up within similar Commonwealth and state frameworks, a lot of the information that we will provide to you is very similar to what our colleagues from the Murrumbidgee area have provided. I did prepare a brief submission based on your terms of reference and if it is okay I will speak to that and then take specific questions as we go.

CHAIR—Please proceed.

Mr Glennon—Let us flick through the presentation. I have a bit of general information there about CMAs statewide. There are 13 of us. It shows how we are set up. We have a chair—Rob—and seven other board members from throughout the catchment. It is important to emphasise that our board directors are ministerial appointees through an expression of interest process. They do not represent industry or sectoral groups. They are appointed on their merits and their skills rather than on sectoral interests.

I will move through the presentation to address the terms of reference unless you would like me to speak to anything in particular. I note that the terms of reference included achievement of the goals of the National Action Plan for Salinity and Water Quality. As an opening remark, in my opinion I think the NAP funding has been pivotal, given how natural resource funding has been managed in the past. I agree with what our Murrumbidgee colleagues said: to actually get in and target investment to specific areas so that you take the right action in the right areas to get targeted outcomes is a tremendous improvement on some of the previous models with their scatter gun types of approaches. So I think that has been a great achievement. Also, I think the idea of getting into seven-year funding is a great idea as well. Unfortunately, the fact that CMAs have been set up for a small amount of that time has caused a few difficulties, but I think the concept when it was set up was terrific.

Going through the goals of the national action plan, the first goal was targets and standards for natural resource management. We have a catchment blueprint similar to that for the Murrumbidgee, which the Murrumbidgee people have spoken about. That is very much focused on targets. Now through the natural resources commissions, we all have an ability to perform to statewide standards and targets. I think that goal has been achieved. Next is integration of catchment management plans—those approved by state and Commonwealth governments. That has certainly been achieved through the blueprints, our role in investment strategies and our current catchment action plan, which is due to go as a submission to ministers in March. That has been done with quite intensive consultation with major stakeholder groups in the broader community. As for capacity building, that has been a success too through the national action plan, with a very high percentage of funds going directly to farmers from groundworks and also very closely related extension works as well. Those are the goals which I think have been specific to CMAs. There are of course other goals in the action plan that were not specific to our core duties, but I think those other ones have been achieved quite well.

In terms of the role of catchment management authorities and their plans as to salinity, I have provided a fair bit of information on how we are set up. I will speak to that in any detail that you might like. The first couple of pages contain a few general statistics and a bit of an overview. We have 24 permanent staff and another 12 that are funded through the national action plan, so we are a bit off having 40 staff, with a couple of contract staff and people like that. So that is the general size of our workforce. The area is quite large and the operations are quite large. We have a very decentralised structure. Our board took the view, as Rob has said, that our main priority was engaging our community. We thought the best way to do that was to have our staff out there working with the community, not working in centralised offices, so we took the view that we would set up a very decentralised structure. As Rob said, one of the things that we would point to as achievements has been the ability to lever funds from other parties interested in natural resource management. Some of those have been industry groups and commercial operators. We

have had fantastic support from our land-holders. There is a brief overview of who is on our board. I will move to the map of our catchment. There is a table showing where our expenditure is. Rob has already spoken about that in detail. We are very grateful for the support that we get from the Australian and state governments. Fifty-five per cent of our funds is from outside institutions and land-holders.

Mr Gledhill—If later on you care to look and see how many dollars we got from one particular person or another, we can verify all of that for you.

Mr Glennon—Moving through that, similar to the Murrumbidgee, we have set up our business around some major programs. Our programs are vegetation and biodiversity, water and aquatic ecosystems, sustainable land use and community, and again, similar to the Murrumbidgee, we have not got a specific program called ‘salinity’ because we believe that salinity is a symptom not a cause so we have addressed our actions to what we think are the causes of salinity. Much of the work we do—and I am sure that it is the same with the Murrumbidgee as well—has a lot of benefits in terms of soil erosion, biodiversity and things like that. We tend not to focus on one individual area but to try to get the broader landscape change and get that integration going.

We have three main goals in anything we do. One is to provide leadership to the community through our policy work that we try to take up with government, and there are also the legislative requirements particularly with the Native Vegetation Act. Our other two goals are to provide extension and technical support to the community and, obviously, to provide funds for on-ground change. We have a pie graph there that shows the distribution of funds into those programs. Again we do not have a salinity one, for the reasons I have already mentioned.

The next graph shows you the funding based on our goals. Four per cent is on leadership issues, our regulatory functions. I will just make the point there too that that is our whole funding. That four per cent comes from our state recurrent budget. Obviously we do not spend any of the NAP money on any of our regulatory functions. All of our NAP money goes on the other two areas, on on-ground works and educational services.

I will just move through the next few reasonably quickly. Here are just a few graphs showing the functions of our staff and where they work, some specifics on the activities that we do, and the last graph is on our major achievements. I think that we have emphasised those enough already so I will leave you to do a bit of night-time reading. Here are a few graphs that show you where our works occur in the catchment. We do have a number of flagship projects—what we call our ‘targeted concentrated projects’. They involve a number of organisations. Then we have a number of programs—and again I emphasise that we do not have programs that run catchment-wide. Except for the vegetation project, most of them are quite specific to our targeted areas, and this is very similar to what you heard from the Murrumbidgee.

I will just make a brief comment on where we see the CMA going. Obviously we would like to continue to do the work that we are currently doing and we will strive to do it better. There are possibly some areas that we would really like to expand into. We see a great need for an information warehouse, if you like, for all our community members and we are very keen to set up a catchment information system. We are quite well progressed in identifying our requirements for that and that will be one of our major priorities for this year: getting the information together

so that land-holders can access it easily and get the research outcomes onto the ground. Obviously we want get into environmental water trusts and environmental water flows more. Probably another thing that we are very heavily into is trying to get a bit more of a position on market based instruments in natural resource management. We are putting a fair bit of effort into that at the moment and I can speak on the detail of that if you like.

I notice that your third term of reference concerned action taken since the result of a science and innovation committee. It forced me to read the report, so I did. I read the 28 recommendations and in my opinion they could be summarised down into six main themes, if you like, or areas and I have made some comments based on those. I must emphasise that these comments are from a Lachlan CMA perspective. The first theme I picked up was the integration of R&D into regional planning and investment. I suppose my assessment of that is that that section is probably reasonably good. Again, I would emphasise the fact that basically in order to comply with the Natural Resources Commission standards and targets you have to be able to demonstrate that to get your cap approved anyway. To me, that has been quite a good check and balance, if you like, to ensure that groups like ours do take in the science. We have pretty good support from a lot of the agencies. We are getting into some industry R&D through the Wool Initiative and Meat and Livestock and, possibly, we would see ourselves doing a bit more work with some of our university institutes and things like that. We would probably find that not too bad.

Our ability to prioritise R&D is probably not that great at this stage. But, to be fair, I would see that that would improve in the future with our catchment action plans because, by definition, our catchment action plans will prioritise the key issues for the community so that allows us to concentrate our resources and efforts, if you like. Again, a number of the other recommendations focused on the extension of R&D to land-holders in the community, and I think we would all have to agree that there are probably opportunities to do that a bit better than we have in the past.

The last term of reference concerned information management, and I have already said that we see that as a major role that organisations like ours can play. That covers our submission. We try to stick to how your terms of reference work. Our colleagues from the Murrumbidgee spoke a lot about how they did their prioritisation operations and ours are similar. We would be happy to speak to any specific questions.

Senator ADAMS—I will start with your local government partnership arrangements. Are you getting on well with them or are you having problems with them in that respect?

Mr Gledhill—We are getting on very well. We have actually formed a reference group with them. We have held three meetings in the last five months with all the shires in our catchment. There is a forum in Sydney in a fortnight's time, which all the chairs from all the catchments will attend. Local government has taken us on board 100 per cent. I think that is very positive, because I see local government having to play a huge role.

Mr Glennon—We acknowledge that relationship quite highly. We have dedicated one staff member specifically to the role of liaising with local government, and we think that has been one of the major things.

Senator ADAMS—Especially your role as well, as the chair?

Mr Gledhill—Yes.

Senator ADAMS—It just has to work because if you have local government working against you it is a crazy situation—you just cannot do it.

Mr Gledhill—There were probably a couple of local government areas at the beginning that were a bit dubious about us, but there was another story there. I threw it at them from the word go: ‘What about the \$40 million that has been given to the catchment management authority to spend in that region over the next four years?’ That is outside dollars coming in. So they have to get on board, regardless of what they think of the environment. They have to get on board because they are new dollars coming into their towns. That statement threw a lot of them. We do not have one shire in our catchment that is opposed to us.

Mr Glennon—That is very good.

Senator ADAMS—I asked the previous witnesses about the shortage of labour in rural Australia. Are you having any problems with that in implementing any of your projects?

Mr Glennon—I have heard the same thing as well. Obviously, when you hold a lot of community meetings and things like, that issue is brought up. That is one of the impediments to getting that change occurring. Having said that, we have been oversubscribed with respect to every funding program we have so far run. Even though it is an issue, the response is still terrific. We have tried to get around that with a couple of our strategies. Currently, we are trying to work out a program which involves a lot of willow removal and willow control works et cetera. Equally, it involves a major employment program with the Aboriginal community as well. We are trying to get that skill base out there. So, if there is a shortage, we see that as an area where probably those groups could take advantage. Also, the other thing is that we try to give the land-holder the opportunity to implement the programs on farm over a longer period, not just one year. We hope that that is a strategy, too, whereby the land-holder can manage the workload a bit better rather than asking him to do major works within one year. We do get that feedback, too.

Senator ADAMS—In the area I come from in Western Australia, the effort being put into Landcare projects is making quite a difference. They just cannot deal with—

Mr Glennon—Finding the labour and the cost of labour.

Senator STEPHENS—Can I take you back to the page that you provided on flagship project areas. They are quite interesting and very different projects. First of all, I want to find out a little bit about the Great Cumbung Swamp, which is a privately owned terminal wetland. Where does your strategic reserve funding come from?

Mr Glennon—The NAP allocates a percentage of money that has already been determined to each of the focus catchments and they hold a percentage back. I think it is 15 per cent. The first amount of money that is allocated is identified to specific projects within your own catchment action plans. The strategic funds are out of NAP and they are identified to more statewide priorities. Obviously, wetland management is a statewide priority.

Senator STEPHENS—There is also the Bland Incentive Grants project. The Lake Cowal goldmine and the wetlands is quite a contentious area which has been in the Land and Environment Court. Can you tell us a little more about that? That is quite a significant project—\$2.7 million, with your contribution being just \$800,000. So there are significant partnership arrangements there. Can you tell us more about that?

Mr Gledhill—We launched this last night.

Senator WEBBER—So it is fresh in your mind.

Mr Gledhill—The information is a little bit out. It is a \$5 million project over a three-year period. The CMA is putting \$1.5 million in and the rest has come from Barrack Gold and the Bland Creek Catchment farmers in that area. That is a huge project. It will see 300 kilometres of the creeks and the Bland Creek fenced in with corridors alongside it. It will be unbelievable. We have a lot of erosion problems up there and we are going to have strips which we hope will stop all the erosion—and the salinity there is great. It is a terrific project. I do not think there was one farmer in the whole area who was approached who said no. They all came on board.

Mr Glennon—It is a catchment area, so the sediment and salinity drain into Lake Cowal—which, as I think has already been mentioned, is a national listed wetland. So there will be quite significant outcomes for the environment with that project.

Senator ADAMS—Will we fly over that today?

Mr Gledhill—No. You are not going there. I believe you are touring around the Wagga area.

Senator ADAMS—I was just looking at the map and trying to work out where we are.

Senator STEPHENS—It is not like where we went in Western Australia.

Senator ADAMS—It was just that I saw a lake today and I was wondering what it was.

Mr Gledhill—These are some of the major project that are bringing in those outside dollars. We see that as very positive.

Mr Glennon—Lake Cowal is about 50 kilometres west of West Wyalong and West Wyalong is about 150 kilometres north of here.

Senator ADAMS—It definitely wasn't what I saw today.

Senator STEPHENS—I have one final question. This morning we had a long conversation with the community representatives about community based action, particularly here in Wagga, and addressed the issue of urban salinity. You talked about all of the land-holders being very committed and very involved. How about the communities within your catchment and the extent to which you are able to change community attitudes to salinity in the towns or villages?

Mr Gledhill—I will just talk about my own town, Boorowa, at the moment. We have to do monitoring. Monitoring worries me because the community does not understand scientific

monitoring. My town understands the monitoring that I understand. We have spent a lot of money in previous years on the upper part of the Lachlan catchment, which controls the Boorowa River. The Boorowa River has always had an odd-platypus in it, but now you can say that, nearly every afternoon, the community can walk alongside the river and see the platypus there. So they know that something we are doing—we do not know what—has improved the quality of the river up there.

That is the sort of thing that we need the community to understand. I would say that, within the next two to three years, the kids in the town will be able to go down there and catch a yellow belly and a Murray cod—which we release in there—and the community will again say, ‘I couldn’t care less what you’re doing but, whatever you’re doing, something is right because we can visually see what is happening.’ At the moment, to walk into town along the Boorowa River is just unbelievable. It is crystal clear. It was a huge problem area. We have just spent \$3.8 million on a new water treatment plant because you could not drink the water in the town. Right up and down the Lachlan, the community is aware that salinity is a huge problem and they are all prepared to get on board with us. It is how you sell yourself. I think the education bit and how we sell ourselves to the community are major things.

Senator STEPHENS—The question was more focused on the kind of infrastructure impacts that salinity might be having on those communities. We heard this morning that Junee, Cootamundra, Griffith and Yass—some of which are in your catchment, aren’t they—

Mr Gledhill—No.

Senator STEPHENS—No, they are all the other ones. Do you have any that have emerging—

Mr Gledhill—At the main cricket ground at Boorowa, salt patches are coming through. You drive past some of the brick homes and you can see the white salt going up the side. We are all aware of that. You see the plaster falling out from between the bricks. There is rising damp in our courthouse. We have just had to spend a huge amount of money on that. Yes, the community is aware of this.

Mr Glennon—Boorowa, Parkes, Forbes and Cowra would all have visible urban salinity issues. We are about to employ an urban salinity officer to work with those local government councils on those types of things and we have been fortunate to do a couple of projects with local government on reclamation of those areas. Again, as I said before, we chose to have a decentralised structure so that we could engage those communities very much at an officer level.

Senator ADAMS—How long has it taken to get the river back?

Mr Gledhill—I do not know. We probably started Landcare work 15 years ago. I honestly say that we do not know what caused this problem in the first place. What is the removal of trees? How do we know? When are we going to see the benefits of what the catchment authorities are doing now? We are not going to see it now. We know we are spending dollars out there, so this is why we have to look back and ask, ‘What have we been doing that has improved things?’ Give us another 12 or 18 months and I would say that, yes, we will start to see less sediment in the river and that sort of thing.

Senator SIEWERT—I have a couple of questions. One is about your funding base. I was looking at the table you provided. I am trying to work out where your different sets of funding are and how much permanent funding you get from the state, because you have a section here for recurrent salaries and operating costs. Is that paid by the state?

Mr Glennon—Treasury funding; that is correct.

Senator SIEWERT—And that is ongoing? It is not like NAP, which is seven years?

Mr Glennon—I hope, yes!

Senator SIEWERT—It is just that it is different in each state. In WA we do not have that. That is very important so that you have a base set of salaries.

Mr Glennon—That is right. The \$3.2 million there covers 24 staff salaries and 24 staff accommodations and vehicles. It covers our regulatory functions too. You may be aware that we were responsible for implementation of the Native Vegetation Act, so that comes out of that section and not out of the NAP.

Senator SIEWERT—And that is the same for each of the CMAs around New South Wales?

Mr Glennon—Not necessarily the same amount of money; the same principle—

Senator SIEWERT—That has just reminded me. You are a CMA but you share a NAP region—

Mr Glennon—With Murrumbidgee.

Senator SIEWERT—How does that work? Is it working effectively?

Mr Glennon—Yeah.

Senator WORTLEY—They are watching!

Senator SIEWERT—Maybe you would like to leave the room.

Mr Glennon—That is right. For administrative purposes, if you like, it has been a shared boundary. I would not say we have worked ‘independently’, because we liaise with each other and share ideas and all that type of thing. In terms of operations, we get our own separate budgets and things like that, so that has not really been an issue at all.

Senator SIEWERT—My understanding of the way NAP has worked is that you do your plan, you put it in and it gets accredited. I am looking at the Murrumbidgee mob as well; did you have to cooperate to put your plans together to put in a joint investment plan?

Mr Glennon—Not necessarily. We put in our own plans based on the feedback from our community and the sites for our catchments. Back in the blueprint days that I think John and

Greg spoke about, we had a number of meetings to make sure that we were not getting any issues at the fringes, if you know what I mean, because you would be crazy to have land-holders just separated by a fence and things not matching. So we did a lot of work to make sure we were not getting those fringe issues. But, in general terms, our catchment action plans, our CAPs, are very focused on what our own communities and our own scientists are saying. Having said that, both catchments are highly agricultural so—by the nature of the catchments, climate, land use and things like that—you tend to get very similar outcomes anyway.

Senator SIEWERT—Then that money comes into the priority region and your share goes to you?

Mr Glennon—Correct.

Senator SIEWERT—This is my last question. I really liked the rundown you did of the House of Representatives report. You talked about the regional R&D and the prioritisation of R&D. Have you got any suggestions—you have said they are limited at this stage—about how that could work better in terms of regional R&D and how that interacts with the state or bigger picture R&D?

Mr Glennon—There is a lot of discussion in the report about regional conferences, regional forums, R&D and things like that. I was fortunate enough to have been involved in the national dryland salinity program in a previous life, if you like, when I was working in Gunnedah and Tamworth, and I thought the process they ran there was quite good. They had facilitated workshops in those regional centres. You had great access to the CSIRO and BRS and those types of people—those researchers. It was a really good interactive process where they engaged with local communities and set out the research priorities for those particular areas. I was in one of the departments at the time but I found that quite useful.

Once we do our catchment action plans, we will be giving the researchers a lot more direction on that. To be fair to them we will do that. We will probably try to run that process in the Lachlan and have that facilitated workshop where we get together the key players—ourselves, the agencies, the Commonwealth people and the local community—and really identify what our research priorities are.

Senator SIEWERT—This is a supplementary question; not a new one!

Mr Glennon—I am getting a feel for the Senate here!

Senator SIEWERT—One of the fundamentals that came out of that is that regions do their own R&D. I must admit, I see pros and cons with that in that some regions are still getting up to speed with doing other things. Also, you are then dispersing the effort. My understanding of what you have just said is that you would then give directions to researchers rather than have researchers of your own doing it. Do you think it is better to have an integrated approach across regions or would you prefer that each region does their own?

Mr Glennon—That is a really good question. Obviously, to be efficient with resources, you cannot be identifying a lot of researchers who are basically on pet projects. We understand that. I would like to think that we would be requiring high-level research. In our particular area, I

would imagine we would be trying to focus more on the prioritisation of investment, the cost benefit of that investment and things like that. We would like to think that we would deal with that higher level research. With regard to any site specific research on, say, the impact of some practice on agricultural lands, we would probably take that up through some of the industry groups and things like that. In terms of government research, we would like to think that the areas we look at are high-level, more strategic issues. I understand that you have to meet state and national objectives, and we would try to fit in with that.

Senator WEBBER—I promise I will be quick, although I cannot vouch for the answer! I want to return to your earlier comments. You talked about developing a catchment information system. That was one of your priorities. Can you expand on that and talk about where that is going?

Mr Glennon—We had a presentation from a consultant who had worked with DPI in Western Australia. I thought it was quite impressive, actually. In general terms, what this gentleman or this company had been able to do—it is hard to explain—was have a process whereby they gathered all the information for NRM practices in a particular area. If a council was doing a development or a land-holder was managing a property, they could focus on that and, through a series of links if you like, they could find out any agricultural practices, any recommended best practices or whatever you like for that particular area. The one feedback that we constantly get from all our community groups is that you know of research that is happening out there but you can never find the outcomes.

Senator WEBBER—Exactly. That is why I am interested.

Mr Glennon—Because of the way this person presented this stuff to us, I think our board members were pretty impressed. It was just a great way of presenting the information. That is one thing that regional bodies like ourselves can do—become some type of warehouse or sorting room, if you like, for all that R&D info and things like that. I think that would be a great initiative.

Mr Gledhill—We have a one-stop shop for anything environmental that anyone can come to. We are actually in the process of calling tenders for somebody to come in and do that for us. That is how important the board thought that was.

Senator SIEWERT—Do regional reps share what they are doing—for example, do they tell you what they are doing in WA?

Mr Gledhill—Someone asked the question of the last people about what sort of cooperation we get from DEC and DPI. It is unbelievable. The directors-general of both those departments sit in on our chair's meetings, which are held once a month in Sydney. They honestly offer us anything we want; we have never been knocked back yet. We have a DEC secondee working with us, and we are supposed to get a department of primary industry secondee working with us as well. The relationship there is very good.

CHAIR—I am sure that glowing feedback of your state Labor government officials will be noted.

Senator WEBBER—I am writing that down.

CHAIR—Regarding the way that the programs are delivered, one of the things we were trying to look at in an overview sense was how adequate the existing programs are for the people on the ground who have to implement them, which is you. Do you have any advice for us in regard to ways that that could be delivered to make your life easier or to make it more effective?

Mr Gledhill—I will digress a little bit and tell you the only couple of problems I see. The continuity of employment for our staff is a huge problem because we have quality staff and we need to be able to keep them on and say that they are funded for 10 or 15 years. I see a huge issue there. We cannot keep asking governments for dollars. I believe that we need to try and make the CMA self-funding somehow, whether that is through the water trust or whatever. I also believe that we need an environmental levy right across Australia to cover all of this.

Senator WEBBER—It beats Rachel.

Senator SIEWERT—It is one of our policies.

Mr Glennon—I agree with Bob. Similarly to what our friends in the Murrumbidgee said, we are trying to get into some of the MBI stuff, stewardship programs and things like that. Not having guaranteed funding to a particular point in time does make that difficult. As I said in my opening remarks, I think the concepts of NAP at the start were really good in terms of focusing best practice works in the key areas and the seven-year funding thing. I suppose I would just be asking for patience to let that system work. I thought the concept was good.

CHAIR—Thank you very much for your time. I wish you well for your future endeavours. Hopefully you will read our report when it does come out. I hope the government does too.

Mr Gledhill—Thanks for listening to us.

[12.43 pm]

HEPWORTH, Mr Anthony Joseph, Natural Resource Management Facilitator, Wagga Wagga City Council

KIMBLE, Mr Paul Robert, Environmental Audit Officer, Wagga Wagga City Council

SHORT, Mr Bryan Francis, Director, Asset Management, Wagga Wagga City Council

CHAIR—I welcome the witnesses from the Wagga Wagga City Council: Mr Tony Hepworth—expert minibus driver!—Mr Bryan Short and Mr Paul Kimble. Thank you for giving us your time today and for allowing us to hold the hearings in the council offices. I would like to acknowledge the assistance that council has given overall to facilitate our visit to Wagga Wagga today. I think, Tony, you will be taking us on a tour of salinity affected areas after lunch. Thank you for all that support.

I give you the formal reminders that evidence given at the committee is protected by parliamentary privilege and that the giving of false or misleading evidence to the committee may constitute a contempt of the Senate. I also remind you that, should you at any stage wish to give part of your evidence or answers to specific questions in private, you may ask to do so and the committee will consider that request. I invite you to make an opening statement before we go to questions.

Mr Short—I will lead off, if that is all right. On behalf of the council, we welcome your committee. Thanks for coming here to have a look at our city. The intent of your committee is to check on the extent and economic impact of salinity. That is a very wide subject.

Overhead transparencies were then shown—

Mr Short—I understand that one of your objectives in coming to Wagga was to have a closer view of what urban salinity activity has been going on here. I will give you a bit of an overview of Wagga City Council and the area it covers of 500 square kilometres. We had amalgamations here 20 years ago, so we have dense rural areas as well as urban areas. We have run programs in both the rural areas and urban areas, but we will just concentrate on the urban programs today, if that is okay. As for the rest of our team here, you have met Tony. You know that Tony's role is our natural resource management facilitator. He has been in charge of our education program and community involvement. Mr Paul Kimble is our environmental audit officer, but he is principally responsible for coordinating our urban salinity annual report, which has some useful information.

Just to give you a bit of background, one of the earlier questions asked was: when did Wagga become aware that it had an urban salinity problem? It basically happened in 1993. There had been some redevelopment work on the showground. They had built a new trotting track and they had done some cut and fill. When they went to re-sow the central area of the showground, they could not get any of the grass to establish. Greg Bugden, from the state government agency, who was speaking earlier today, and I were asked here to see if we had any indication of why they

might not be able to get the grass to grow. Greg recognised the symptoms immediately as salinity. We got a backhoe up there and dug about three or four holes. The water surface rose to within 300 millimetres of the surface, and the salinity was in the order of about half the salinity of sea water. So immediately that explained a lot of things that had been happening that we really did not understand—dampness under houses, roads failing, vegetation dying.

We have been involved in this since 1993—that is, about 13 years. It is interesting to see that we have a couple of Western Australian representatives here. When we put our hands up to say that we had a problem here, there was a wall of silence, except for a bit of a murmur from Western Australia. We have had regular contact with the Western Australians through, I think it is, your department of primary industry and your rural towns and a fellow by the name of Mark Pridham over there. He has been over here a couple of times and we have been over there a couple of times. So there has been that interchange of information. We have both benefited from that interchange.

Just to give you a quick flip through what some of the symptoms of urban salinity are, it is springs popping up in the middle of roads, in nature strips and in footpaths, footpaths that remain damp all year, water seeping into gutters and salt stains on your gutter, salt marks. On the Sturt Highway through Wagga, the main highway to South Australia, you can see the salt scalds in the table drain there. What invariably happens in terms of cost to the community and the impact on infrastructure is that it effectively reduces your road lot by about half. A road like that is probably about \$1 million a kilometre. At one of the local hospitals the car park was only about three years old and it just started to collapse. When I say ‘half-life’ sometimes it is even a lot less than that.

In terms of its impact on recreational areas, this slide shows the recreational area for the remand centre. You can see the salt scalds through there. There is the football field, another recreational area, and again you have the cut and fill. That is cut into where the water table was. Half of that field, which you cannot see in the photo, looked quite healthy. But, with the other half, where it has been cut into, the rising ground was a real mess. In terms of its impact on houses, this is typical. What you get is a wetting and drying of the bricks. As the salt crystals form, they start to fracture the brick and the surface of the brick starts to give way.

In this house, although they have put some false cladding on the top half, there are areas in the old original brickwork that you can put your hand through. Underneath the houses you can get this sort of behaviour happening, where you start getting this hour-glass effect where the brick pier could eventually fail if that was allowed to continue. In another house, fortunately the majority of its structure was hardy plank. In the veranda column you can see the impact of salinity on the brickwork.

Most of the houses in this area, which is probably about 80 years old, are double brick on the outside and brick walls inside. You can see as the damp course fails, because these houses are 50 or 60 years old, the water starts to seep up the walls and you get the plaster starting to fall off the walls. A lot of these houses were owned by elderly people who did not have the money or the resources to go in and do these repairs. Typically the repairs might cost \$10,000 or \$20,000 to get these back to the state they should be in.

Early concrete slabs were poured without a waterproof membrane underneath them. In some the water comes through. This was a motor mechanic's workshop. He could not put anything steel on the floor—any engines or anything like that—because 24 hours later they would be filled with salt and corrosion would be starting to occur. In a galvanised iron building you can see that the salt is starting to eat away at the galvanising.

It had a horrific effect on the community when they realised that we had this problem. The council, in conjunction with state government agencies and the Department of Land and Water Conservation, went through a process of sitting around the table coming up with some sort of strategy of how we might manage this. The types of things we thought of were raising awareness, having education demonstration sites, choosing a pilot area and doing some substantial projects in that, and pushing on with a lot of investigation. At the end of the day we came up with four basic programs: an education program, a revegetation program, a leakage reduction program and a pumping program. In conjunction with that we had a monitoring program. Some of the presentations today talked about developers and how you handle them—whether you could manage their ambitions with your own to come up with a mutually satisfactory result. The most important thing is to have decent information.

When we went to find out how fast water levels might have been rising in Wagga, there were no records. The best we could find was some rural information that water tables in the surrounding districts had been rising in the rural areas at about 0.2 to 0.5 of a metre per annum. All the old wells had been filled in, so there was not much information in the urban areas. So council went out and with assistance in the location of these piezometers we put in about 100 piezometers. We have been monitoring those now for over 10 years, so we have a good background of information right across the city to the point where three years into this investigation phase we had a lot of information and people asking, 'Is my house affected by salinity? I'm going to buy a house. What do you think I should do?'

Mr Hepworth—Excuse me, Bryan. I have these maps, so I might as well give them out to everybody at this time.

Mr Short—Thanks, Tony. We felt that if we had this information we needed to make it public, because if we sat on it we would be liable for court cases if people subsequently found out that we had the information and had not told them and they had damage caused to their houses and property. That red area shows where the water table was within two metres of the surface. The blue area is up to four metres and the green area is deeper again. At the same time that we let this information lose out to the public, we also went out with a strong community consultation process. We told people that we had four programs that we were going to put in place, which we were hopeful—although we were on a bit of a wing and a prayer—could manage the rising water tables under the urban area.

On the back of that map that Tony gave you is another one. It was the result of a lot of work that was done by the Department of Land and Water Conservation. It was before the days of Wilson Tuckey, where you flew over the city to work out what your water table was doing, which was not all that successful in urban areas because it relies on electromagnetism, I think, and you have so many water pipes in the ground that it tends to mess it all up.

This was based mainly on traditional methods of terrain, topography and vegetation to work out the areas that were likely to be inundated. At that point in time we had about 136 hectares where there were scalds present. The indications were that if we did not do anything about it the figure could rise to 11,500 hectares over a period of 30 years. All of the blue shaded areas were the areas it was thought could be subject to salinisation. If you look at the next image, Wagga is in two halves. The green bit in the middle is a ridge through the city. On this side is the old part of Wagga. Over where the blue lake is is the newer part of Wagga. Our efforts were concentrated in the area where the scalds are shown in red. We were getting negative publicity earlier in the piece. This next image is typical of the headlines that we were getting. It was not all that conducive for getting people to come and live here.

Senator ADAMS—What was the community reaction when you first let the information out?

Mr Short—There was a lot of concern, to the point where some of the banks and lending organisations started to say they would not lend money for houses in those areas. We had to go through an extensive education process with them to convince them that the package that we were putting together would mitigate the effects that the rising watertable was having. It took about 18 months before we could get them to change their mind and start lending in those areas again.

So, briefly, those were the programs that we went into. Tony will talk a bit more about the education program. In terms of revegetation, we revegetated all the areas that were easy to revegetate: parkland that had not been developed, nature strips. We tried to involve the community. We had older groups and school groups all getting involved. These were all good projects to get the community involved in what we were doing. In one area we thought we would try and change landscaping patterns in houses. We got a landscape architect in to meet with the community and talk about different treatments that could be used on nature strips and gardens. You will see some of that later today on the bus tour. This is typically what we came up with: mulching, low water use plants and paving. In this image you can see the more traditional treatment in the background. These are the demonstration areas that we put in place.

We also went in and selected the worst recharge area. We put in some rear of block drainage. You probably know that if you live on the low side of the road—like this house where my finger is—then you cannot get your roof water out to the street. The traditional way of getting rid of the water is into a rubble pit. In hindsight, that was seen to be very poor practice because you are directly injecting water into the ground water table. One of our programs, our leakage reduction program, is all about getting rid of the urbanisation type inputs into the ground water table. It involves putting rear of block drainage at the back of these houses to bypass the rubble pit and connect the roof water up with the red lines and into the rear of block drainage. Of the \$5 million we have probably spent over the period we have been carrying out these projects about half of that has been going into that because that is a high-cost program.

The first two programs of the environmentally friendly ones are the education and revegetation programs. But the rear of block drainage and the pumping scheme are engineering solutions. They are very expensive, but there is really no other way to get rid of it. I think that is where most of the water is getting into the system in the urban situation. As we have said before, we did the rear of block drainage work in the recharge area. But down in the lower area, which Sister Carmel Wallis was talking about, is where all the symptoms were apparent. That is where

we put in a pump, a bore field. We have eight bores that go down about 50 or 60 metres below the surface, pumping to lower the watertable and give some immediate impact on what they have been subjected to.

The installation of that can be a bit disconcerting to residents when they see something like that pull up out the front of their place. We have gone in and done that. We have used submersible pumps and the like. When we walk away after we have done the job, basically that is what it looks like. Unless you knew what it was, you would not even notice it. We have got a manhole there with the submersible pump down inside the bore, and a little control box where we can monitor the flows going in and out and the electricity meter are in there.

Senator SIEWERT—How many of those have you got?

Mr Short—Eight. As a result of that program, the publicity started to swing back to something more like that. That gives you an indication of the history and what has been involved.

I suppose about 10 per cent of the expenditure of our programs has been on education and about 15 per cent on the revegetation. As part of that revegetation we have also—and it was mentioned earlier today—developed a development control plan for vegetation in rural residential areas. That has been in place for about three or four years. It sets out what percentage of the block should be vegetated and what sorts of species should be used. About 45 per cent of our expenditure has been on the leakage reduction, which is a rear of block drainage program, about 25 per cent on the pumping program and about five per cent on the monitoring. The monitoring leads through to the production of an annual urban salinity report. We are happy to table a copy of that for the committee if they want to have a look through that.

In terms of funding, initially we drew on the NHT program and, to some extent, the smaller projects of the environmental trust. The funding ratio was about \$3 of council money to about \$1 grant money from state and federal government plus about \$1 in-kind contribution from the state government agencies and CSIRO. Because we were the first cab off the rank, we got a lot of support—and we still do get support, but probably not as much as we think we should—from the agencies. There was a drying up of funds for about three years while the NAP—the national action plan—funding was sorted out. We soldiered on with our own programs and projects. We have got a budget typically of about \$250,000. It is fairly well embedded into the council budget these days, and at this stage we are hopeful, even though there is difficulty in funding a lot of things in the government area, that that level of funding will be retained.

We are just starting to get some of the NHT funding now. We are part of the program in the Murrumbidgee catchment, which was mentioned earlier, whereby five towns are getting funding at the moment, and that looks like being extended by another 10 towns in the next round of funding. We were a bit disappointed when the catchment management plan was released. We felt the impact on infrastructure should have had a higher focus. It is not one of the headline targets. We made submissions to try and get that incorporated in it; it is being incorporated, but lower down in the level of the targets.

We find that we have some difficulty convincing our partners in the rural areas that urban salinity is a legitimate player in the action plan. Their view is that local government should go

out and fund that itself. But local government is struggling for funds, or it is in New South Wales anyway, with rate pegging. There is the option of an environmental levy, and we are looking at that at the moment.

Also, when programs or projects were being called for under the national action plan, the council put forward a proposal for a one-stop shop for managing urban salinity for Wagga. We were seeking funding out of the Australia-wide part of the program rather than the state program. But that did not get up. We have continued to provide that service to anyone who wants to come, but that would have allowed us to be a lot more proactive. You will see when you go around with Tony this afternoon that we have tried to put up as much interpretive signage as we can, but we could have done a much better job with that and had more demonstration sites available for people to look at.

I think that is basically all I needed to say. The current program with the national action plan in New South Wales is concentrated more on works on ground. We would like to see a bit of a better balance between works on ground and education programs. At the moment, while we are getting funding under the national action plan, we are letting that fund the works on ground and we are using our own money to fund the education side of the issue.

Senator STEPHENS—You were talking about pumping the water. Was it eight pumps that you put in?

Mr Short—That is right.

Senator STEPHENS—In the document I have here, which perhaps might be a bit older now, it says that council has the licence to do that until 2005. Has that been resolved?

Mr Short—That licence has been renewed. Currently the discharge goes to the river. We are now talking with state government agencies to see if we can come up with a better disposal system. The water we are drawing is from about 50 metres below the ground. It is moderately saline—it is in the order of one to 1.5 decismens. The quantity of salt that is going into the river is about 250 tonnes per year at Wagga.

Senator ADAMS—Do the other witnesses wish to say something?

Mr Kimble—Yes. My role, as Bryan pointed out, is to coordinate the production of the annual salinity report for our section of council and council-wide. We look after the four-pronged attack on salinity. Tony looks after the education side of things and to a large extent the revegetation, Bryan looks after the engineering works and I look after the watering bores and monitoring—the actual out-in-the-field works. Putting together the report each year, we draw on Tony's and Bryan's information and also we report on what we have found with our measuring of standing water levels and salinity levels in the ground water bores. That is what the report basically puts forward each year. We have some recommendations, I suppose, at the end as to where we want to head for the next year and also, because I think this is a four-year program, where we want to head in the longer term.

Senator STEPHENS—Is that a report to council or to government?

Mr Kimble—It is a report that we make available to the people who fund part of the program. It also goes to council and it is a public document.

CHAIR—Can we get a copy of that?

Mr Kimble—Yes. Bryan has a copy.

Mr Hepworth—I just realised that the minibus I drove you in with this morning is still parked in that 15-minute car park out there! I could be on my bended knees before the parking rangers before the day is out. I must also begin with an apology. Mayor Kerry Pascoe was scheduled to come here at about 10 o'clock this morning to give you an informal welcome. But, unfortunately, he called in sick and I found that out only a little while ago. So I send apologies from the mayor. One of the senators asked before about protocols for new development and what had to be done before—

Senator ADAMS—That was me.

Mr Hepworth—There are some requirements—I will pass them to you. Before any new area can be opened, holes have to be drilled, water depths have to be monitored and all of that kind of thing.

We need to find an education system that works. I do not think the current one does. If we do not find an education system then engineers like Bryan have got a job for life because they will always be going in and fixing up the things that society is not doing. I have run salinity tours for schools, for university groups that come down, for Senate inquiries and things like that. Take the Senate inquiry out of that but, when I do it with schools and university groups, it is often an academic exercise. They are interested in studying it without doing anything about it. It is an academic exercise; I am fairly convinced of that now.

It was troubling us a bit and so, working with Sister Carmel over there—she talked about the education, networks and partnerships we have—and several others, we developed a teaching unit called 'What's the wash on water? What's the sauce on salt?' We put it into schools as best we could and it had field trips associated with it and we had a big thing called the future problem solving challenge here. The first year that we ran it, we had 17 classes and thought we were terrific. The second year we ran it, we had six classes and wondered what had gone wrong. Basically what had gone wrong was that there are a number of schools here that are relatively small, they can only take a new program once every two or three years because the same teacher has a year 4-5 class or a year 5-6 class or something like that. You just cannot keep repeating it.

While all this was going on and I was struggling with this education thing, I got introduced to this discipline called social marketing. I am finding it quite intriguing and I wish I had learnt about it a long time ago. They maintain that ordinary marketing is relatively easy. We are all going to buy a car, or a drink, some make-up or whatever the case may be. I just have to make sure that you buy the car that I am advertising and not the car that he is advertising. You are really just re-directing behaviour a bit. With social marketing, you are actually trying to change behaviour significantly. It is a major turnaround, almost a 180-degree turnaround. I think we are only just realising we are not at all good at this and we have to get better. It takes a lot of money

and time and it is pretty intense. A number of balls have been bouncing around since I have been in this job for three years.

The other thing that I looked at was what was initially an urban salinity facilitator and now is a natural resource management facilitator. There is a lot of merit in this because, if you have your eye on the sustainability ball, you might take it off the waste management ball, the air quality ball or the global warming ball. But if you can get people to put their eye on that broad sustainability ball then you can move them in a number of directions simultaneously, which is probably a lot easier than just moving them in one direction—for salinity—and then they do not worry about air quality, global warming, waste or things like that. There are also good reasons because we are totally dependent on ecosystems and if we stuff them up then we are gone as well. Also, money tends to be more available for broader programs than for specific programs. We got a \$20,000 grant from the Department of Environment and Conservation, but it had to be with sustainability. We were able to put salinity into it as one of them, which was worth while, but there are other things there that we have asked the community to address. Now I do not want to burden you with lots of paper, but I have five copies here if I can just give them to you.

The question remains: what has it done? I really do not know; \$20,000 allows you to prepare things like this and get them printed, and we had some TV and radio ads running simultaneously, but it does not get you enough money to follow up to see if anybody has read it and, if they have read it, have they changed their behaviours. I keep coming back to Education. Education is an enormous challenge here and we have a system that does not work very well at the moment. While this was going on, we were able to introduce the concept of Landcare action. There is an enormous amount of goodwill in the community. Working with the Urban Landcare Group, with a lot of their labour and a lot of council resources, we were able to generate this concept of Landcare action.

Sometimes it was targeted at salinity. There are several National Tree Day plantings we have done that have been in important areas for discharge sites. It is also targeted at basic revegetation, biodiversity, river quality and these kinds of things. All of this had been going on before but we just managed to start counting it 30 months ago. In the last 30 months, we have generated over 8,000 volunteer hours, we have over 19,000 plants in the ground—and all of this has been worth \$151,000 to the community in terms of volunteer labour. We have got some fancy little brochures. I do not want you to go away without reading one of these, because we are very chuffed with the way it is going.

This is the community. We think there is a growing awareness in the community. We run a kind of call to action in the paper. The Urban Landcare Group basically administers and organises and council provides the resources. Without them, we would be done. A lot gets done but it is still not really getting into schools. It really is just calling the community out for some action but not reflection. I think if you are talking about education it is really action and reflection going around and around all the time. This morning Sister Carmel mentioned the education for sustainability partnership network that is growing and developing here with the TAFE, Charles Sturt University, the Department of Education and Training, Catholic education and council. But in all of this, the question keeps coming back to me: what actually does get done? Is it just an academic exercise?

I spent the first 42 years of my professional life in formal education. In the last 20 or so, I was very much involved in what in New South Wales they call HSOE: human society and its environment. It is usually called society and environment, or studies of society and environment in other places. In New South Wales we used to talk about social and civic participation, which goes by slightly different terms in different states and territories. At the end of 42 years, my report card would have read: ‘Hepworth is something of a dud when it comes to social and civic participation.’ In the three-and-a-bit years I have been with council, I have generated more social and civic participation than I ever expected or hoped to and certainly more than I ever generated in 42 years of full-time formal education. This is why I keep saying we have an education system that does not actually work terribly well.

I have also found, in my role here, I have started bonding with place rather than bonding with people. I still like people, of course. As a teacher you bond more with people but, in my role, I start bonding with place. I like Ian Kiernan’s words that you have got to get down and dirty, because if you do not you do not bond with place. I reckon that, probably for the first 42 years of my formal career, I was pretty autistic when it came to place. I am far less autistic now because I am very much involved in place here.

If we want to do something not just about salinity but generally about the environment, I think as well as looking at engineering solutions we have really got to look at a major cultural solution, which is: what is the education system doing, and how can we sharpen it up and get it moving forward?

CHAIR—Thank you for that. We have a bit of time for questions.

Senator ADAMS—Tony, that is a great poem. I really enjoyed it. When I looked at that, I thought, ‘Goodness, his bus driving isn’t too good, but—’! I have a semi licence; I did offer to drive!

Mr Hepworth—You have not seen my creative driving!

Senator ADAMS—As I said, I am very interested in the community reaction, when you came out with, ‘We’ve got a problem here.’ How did the real estate go in some of those really bad areas? What happened there with people?

Mr Short—It nosedived initially, to the point where you could not sell houses in those areas. After we got into the education program the houses started to sell again, but they dropped by the amount it would take people to do repairs. A lot of the time people were hiding them. They would put a fresh coat of paint on something. What tended to happen was that the house valuation would drop by \$15,000 to accommodate the repairs that might have to be done to it, on the expectation that the programs that council put in place would not let it happen again.

Senator ADAMS—I am just thinking of someone who has an asset that has been valued at X amount and their rates. Whether or not they were good homes I do not know—and I do not know about the area—but I was thinking about the rates. All of a sudden the council came up with this. Did anyone get to the stage that they were going to sue you because you had come out with something that devalued their property?

Mr Short—No.

Senator ADAMS—There was nothing like that?

Mr Short—At the end of the day I do not think we got any solicitors' letters or anything to that effect. There was some talk that it may happen in some other regional towns, where they had not telegraphed that information early enough, but it was not the case here.

Senator ADAMS—I guess we are going to see your sportsground or the area inside the trotting track now. Have you got a solution there?

Mr Short—It looks pretty good now, yes. You can see on that photo I put up there that they put subsoil drainage in there. Then we had to decide what we were going to do with that water. We built an evaporation basin to go with that. That was a self-contained little project on its own.

Senator STEPHENS—Can I ask one question, to follow up on Senator Adams's questions about the concerns of ratepayers discovering that these things were happening to their houses. Was it part of the council's strategy to provide some advice about repair or restoration?

Mr Short—Yes. We did produce a number of documents, which have since been picked up by the state government agencies actually. One was *Building in a Saline Environment*, which told people that they should use heavier duty damp courses, better quality bricks and better ways of damp coursing to protect the house in the long term.

Senator STEPHENS—What about fixing the damage, when people suddenly realised that this is what the damage in their houses was all about?

Mr Short—We also did a program with tradesmen and suppliers on techniques that could be used. They came along to a couple of sessions that we ran and got accredited, and they were able to use that in their advertising—that is, they could say that they had participated in that program and could offer good advice on repairing.

Senator ADAMS—Yes, on dealing with rising damp.

Mr Short—At one stage, when we were getting this fracturing of bricks, someone was out there saying, 'This is a termite problem,' and selling spray treatment to try and solve the problem. I showed up there the older part of the town, which is about 80 years old, and the monitoring that has been going on. In that 80-year-old part of town we feel we have stabilised the problem. If we continue to get the funding to run the pumps and the other works that we are doing, we do not think we will have any issues there in the long term. Over on the other side of what we call Williams Hill, we have an area that is probably only 30 years old. We have put some deep bores down in there and, even though we have had a drought, there is a continuation of the water table there. We have a mixture of water tables; some are shallow and some are deep. The deeper water tables there, even though we have had a drought for the last four years, have been showing an annual rise of a metre.

We feel we have that area under control, but there are other areas in town where because of the age of the development there is not a problem yet. It is only a problem when the water table gets

to within about three metres of the surface, but unless we keep at it we will end up with the same problems in the newer part as we have in the older part of town. That is the advantage of having that network of piezometers: you know what is going on and you are warned; you have a bit of time.

Senator STEPHENS—Thank you.

Senator WEBBER—I will try and keep this relatively brief. When we were having an earlier discussion with the catchment management authority, one of the issues they raised was that they had identified potential solutions but that there was a fairly long lead time before people see anything positive out the other end. How is the community coping with the fact that while you have put all these things in place they are going to have to wait a while before they see the water table go down or the salt disappear or what have you? How are they coping with the fact that there is no quick or instant fix?

Mr Short—I will make a couple of comments, and then Tony, with his community contacts, might make a few more. The engineering solutions are expensive but they are a quick fix, and that is how we were able to allay people's fear. By putting in that bore field, we were able to get the water table down quickly. That was the only way we were able to avoid blood in the streets. We knew there was a problem there. If we did not have any programs up our sleeves, the real estate values in that area would have plummeted and people would have been locked in there and would not be have been able to sell or get out. You have to be careful when you identify the problem to go with the solution as well, and it has to be a solution that works in a reasonable time frame.

Mr Hepworth—There are two things at work here. It is always easier to rely on someone else than to rely on yourself, and I think the community is relying quite extensively on council. The other thing is that the drought over 2002, 2003 and 2004 lowered the water table—that is the only thing that drought is good for. That took it off the agenda quite a bit. When I first started my work here, I used to get a number of inquiries. I would be writing letters to people who were saying: 'I want to buy a house in such-and-such a street. What can you tell me?' I would look to see where the nearest piesometer was and say, 'The best I can do is this, and these are the measurements for the last three years of the water table.' I hardly get any queries of that nature now. It really has fallen off the agenda.

Senator WEBBER—That is interesting.

Mr Hepworth—For any home that is bought and sold here now there is normally a statement in the contract that says: 'You need to be aware that this is a saline area. Do you want to ask any questions about it?' When that clause first went in, I started getting some questions. Now, I hardly get any.

Senator WEBBER—That is interesting. I am interested in your annual status report. How long have you been producing that?

Mr Kimble—That has been going since before my time here. That came out each year from when the monitoring program began—eight years.

Mr Hepworth—There is a huge wealth of information out there. We would really like someone to pick it up as a postgraduate project of some kind and do some research and redraw that map to better refine the high saline areas. That map was drawn back in the late 1990s.

Mr Kimble—Getting all that information, putting it together and coming up with a model is something that was discussed only recently. If we did that, rather than drilling more holes, we could maybe predict what is happening underneath or with the groundwater, rather than spending all that money on the ground.

Senator WEBBER—Absolutely. It is eight years of very valuable data.

Mr Kimble—Yes, and it is good, consistent data.

Senator STEPHENS—What is the projected population growth of Wagga?

Mr Short—It is a bit up and down, but long term it is in the three-quarter per cent per annum range. We are a population of about 59,000 at the moment.

Senator ADAMS—Is it decreasing in the rural area at all?

Mr Short—Yes, there is some decrease in the rural area. Most of it has been picked up in Wagga, so in terms of the whole of local government area—

Senator ADAMS—It has not really changed; the population has just shifted a little bit.

Mr Short—Yes.

CHAIR—I want to ask a final, overarching question. Could the various pieces of assistance—data, departmental or financial—from state and federal governments addressing salinity specifically and perhaps resource management more broadly be managed in ways that would make your task easier?

Mr Short—One comment is that the application and reporting process is a chore. You have to get the balance between accountability and paperwork. I think the pendulum swings a bit to the paperwork side at the moment. I have also mentioned that at the moment in New South Wales, in particular, it is all about works on ground. We would like to see more of the NAP money going into education. But locally, as I have said, our catchment management authority has accommodated us by saying, ‘Okay, we don’t mind if a component goes into that sort of area rather than into works on ground.’ Philosophically, I think more effort should be made to get that money into education.

Mr Hepworth—When trying to get grant money, there is a bit of a problem. If you go for a grant for three or four years, which would enable you to have some long-term social change programs going on in that time, you do not have that much chance of getting it, because you are asking for too much and the bucket is only so big. Sometimes you just have to ask for a little less. A little less will get some little project up and running, as I have said, but it will not give you much follow-up on it. There is a real catch-22 here. The more you ask for, the less the chance that you are likely to get it but the better the work that you can do. The less you ask for,

the more the chance that you can get it, but you are limited in the kinds of expectations you can have.

Mr Kimble—Similarly, every now and then we get a state funded position, where a project officer will do not just salinity work but also other works. It lasts generally from six months to 12 months. An issue, I suppose, is publicised, we talk about it and it is put out to the community. But after that 12-month period, when that officer's employment has ceased, an employee at the council might have to take that up as an additional duty—but, more often than not, it falls off or falls by the wayside. That is what happens where there is no continuity of funding to put someone in that position or to fulfil that role.

CHAIR—Does council play a role in facilitating general voluntary community activities, such as those associated with the people we heard from at the start of today? It seems to me that part of getting maximum value out of anything that is happening is getting people at the community level—whether it is Landcare or anything else—more involved as well as the behaviour change stuff you talk about. Is that a key part of your position?

Mr Hepworth—Not of mine. There is a volunteer centre over there that council supports and that could be in helping the handicapped, after-school care or whatever the case may be. I just happen to be the secretary of the Urban Landcare Group as well as employed by council. It really has been very convenient having both hats and I think we have got some real synergies out of it that you normally would not get.

Mr Short—Throughout the life of the Urban Landcare Group, there has been at least one person from council who has always participated in that organisation; they meet in our old council chambers. There is a connection, but it is probably not a formal one.

CHAIR—Thank you once again for your participation. If there is any follow-up material that you want to provide, please send it through to the secretariat.

Committee adjourned at 1.33 pm