

**SUBCOMMITTEE OF THE STANDING COMMITTEE ON
ESTIMATES AND FINANCIAL OPERATIONS**

2011–12 AGENCY ANNUAL REPORT HEARINGS

WATER CORPORATION

**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
THURSDAY, 04 OCTOBER 2012**

SESSION THREE

Members

**Hon Giz Watson (Chair)
Hon Philip Gardiner
Hon Ken Travers**

Hearing commenced at 3.14 pm**MURPHY, MRS SUE****Chief Executive Officer, Water Corporation, sworn and examined:****GIORGI, MR MICHAEL****Manager Financial Management, Water Corporation, sworn and examined:****MOORE, MR PETER****Chief Operating Officer, Water Corporation, sworn and examined:**

The CHAIR: On behalf of the Standing Committee on Estimates and Financial Operations, welcome to the hearing this afternoon. Before we commence, I am required to ask witnesses to take either an oath or an affirmation.

[Witnesses took the oath or affirmation.]

The CHAIR: You have all signed a document titled “Information for Witnesses”. Have you read and understood this document?

The Witnesses: Yes.

The CHAIR: The hearing this afternoon is being held in public, although there is discretion available to the committee to take evidence in private either of its own motion or at the request of a witness. If for some reason you wish to make a confidential statement during this afternoon’s proceedings, could you please indicate that you want to make a confidential statement prior to answering the question. These proceedings are being recorded by Hansard and a copy of your evidence will be provided to you. The committee reminds agency representatives to respond to questions succinctly and to limit the extent of personal observations. To assist the committee and Hansard, if you could please quote the full title of any document that you might refer to during the hearing, and please be aware of the microphones and make sure they are pointing in the right direction. Members, it would greatly assist Hansard if you would please, when referring to the annual report, give the page number in preface to your questions.

Government agencies and departments have an important role and duty in assisting Parliament to review agency outcomes on behalf of the people of Western Australia, and we value your assistance this afternoon.

Do members have any questions?

Hon ALISON XAMON: I refer to pages six and 16 of your annual report, which state that the second stage of the southern seawater desalination plant will be completed in mid-2013. I also am aware that the minister has made a number of statements about when that plant is going to come on line. The report states also that the second stage is due for completion before the end of 2012. Exactly how much of that plant is intended to be on line before the end of the year?

Mrs Murphy: Contractually, we will have first water, which means that the plant is actually producing water, by the end of December 2012.

Hon ALISON XAMON: How much water are we talking about?

Mrs Murphy: It will be quite small quantities by December, but that will ramp up gradually over the next few months.

Hon ALISON XAMON: How much are you expecting by the end of December—how many gigalitres?

Mrs Murphy: There will be no gigs in the second stage. It will be small volumes. It is really proving that the plant is operating properly and that the first train can operate at capacity, and then it will build up, with full capacity—absolute commissioning—scheduled for the end of May.

Hon ALISON XAMON: When you say “the end of May”, are you talking about the full capacity of 100 gegalitres?

Mrs Murphy: Yes. Fifty gegalitres per annum is being produced from the first half now, and that will continue. That discussion about first water and full production is about the second 50-gegalitre tranche. There is 50 gegalitres—slightly above that at the moment, actually—coming out of the plant now. From December onwards, that will grow gradually from 50 to 100 gegalitres, with the full 100 gegalitres by May.

Hon ALISON XAMON: That answers, partly, my next question, because I did refer to page 28, which mentions first water being produced by the second stage. I had wanted to know what that was, and that is why I was trying to find out exactly how much water we are talking about by the end of December.

Mrs Murphy: “First water” is a contractual term as much as anything. It means that the plant works.

Hon ALISON XAMON: So it could be 50 gegalitres and one litre?

Mrs Murphy: Yes, it could, and that would technically satisfy the contractual arrangement, provided it is 100 gegalitres by May. But because it is the same team and the same people who are building the second tranche as are operating the first tranche, they are acutely aware of how much we really need to get water out of the plant —

Hon ALISON XAMON: We do.

Mrs Murphy: — so we are all working together to optimise that.

Hon ALISON XAMON: Yes, of course, that is the case. The minister, of course, has suggested that there might actually be more than the 50 gegalitres of the first stage available before summer, so I want to be absolutely clear about that.

Mr Moore: Sorry—of the first stage?

Hon ALISON XAMON: He said more than the 50 gigs, with the second stage. There have been a number of comments made through the media, sometimes in Parliament, generally talking about the hopes for what the desalination plant would bring on board. I am just being very, very clear that it will only be the 50 gig for this summer and 100 —

Mrs Murphy: No, no—not for this summer; to be really clear there is 50 gig per annum coming out now.

Hon ALISON XAMON: Yes, that is what I am referring to.

Mrs Murphy: That 50 gig will be produced in the period from 1 July this year right through to 30 June next year. Now, the second 50 gig will come on gradually from December to May, so we are budgeting on at least 10 gig of that coming —

Hon ALISON XAMON: Per month?

Mrs Murphy: No. It is coming on in that period cumulatively, and then from May to the end of June it will be at full capacity. When the minister talks about extra water, he is probably—I cannot be sure—I would assume he is referring to the Perth desalination plant, the first one that we built at Kwinana. That plant is designed to produce 45 gegalitres per annum, but virtually from the first day of production it has produced more than that. Last year, it produced 48.6 gegalitres or something, I think it was, and this year we are hopeful that we will get an extra maybe five to 10 per cent out of that plant as well. That plant is the one that is at over-capacity. The 50 gig from the first plant is

already at over-capacity, because to build the second part we have to shut the first part down occasionally to tie things in; so, if it produces 50 gegalitres in the year, it has actually produced more than it was designed to because it has produced 50 without operating for the whole year.

Hon ALISON XAMON: Again, on page 6 of the annual report, it said —

The proportion of desalinated water —

In the IWSS —

will increase to approximately 50 per cent when the second stage of the Southern Seawater Desalination Plant is completed in mid-2013.

Mrs Murphy: That is correct.

Hon ALISON XAMON: Again, I really want to be clear on this because this does contrast with information which has been on the Water Corporation website and also, as I say, numerous public promises by the water minister, including a press release that he put out in April this year, and in Parliament on 30 May when he said that stage 2 of the plant would deliver 50 billion litres of extra water into the IWSS from December of this year. That is what I am referring to.

Mrs Murphy: It will start delivering 50 gegalitres per annum.

Hon ALISON XAMON: He also said, “thus relieving the Water Corporation’s current unsustainable take from the Gnangara mound.” That is what has been talked about for quite a long time in the public domain.

Mr Moore: That is right.

Mrs Murphy: That is correct. It is just that it ramps up as it is commissioned, so from May onwards 145 gegalitres of desalination capacity will be producing water. If the planets line up well, we will get more than that, but that is the baseline. Perth uses around 280 gegalitres, so our baseline long-term sustainable groundwater take is 120 gegalitres, which is what we are looking to take as a baseline and the difference between 120 plus 145 and the 280 that we need—I am using very round numbers—we are hoping to get from the dams. Historically, the 10-year average in our dams is around 100 gegalitres per annum. This year so far we have got nearly 21, so we are well down on that. We had hoped to keep at that 120 level for groundwater, but this year it is probably going to be 15 to 20 more than that—maybe 20 gegalitres more than that.

Hon ALISON XAMON: So you are expecting that you will be making an application for a 140 gig pool?

Mrs Murphy: We cannot call till the end of winter and we have had a wet spring, after such a dry winter, so it is probably a bit early to call; we are hoping less than that. At the moment, it is probably still four weeks too early to tell. We have actually had more run-off in the last month than in the preceding two months.

Hon ALISON XAMON: Can I be clear: Water Corporation is yet to put in a VGAR request to the minister for this year?

Mrs Murphy: We have had many discussions.

Mr Moore: We are having some discussions with the Department of Water, but I cannot say whether we have formally put an application at this stage.

Hon ALISON XAMON: You are expecting that that will probably go in in about four weeks’ time?

Mrs Murphy: Yes, it is normally the end of October that we lock in the groundwater allocation for the following year—or thereabouts. I cannot tell you whether there is anything formally going in. There are certainly ongoing discussions.

Hon ALISON XAMON: At this point, bearing in mind we do not know how much rain will come in the next four weeks—I hope there will be a lot.

Mrs Murphy: So do we.

Hon PHILIP GARDINER: You must be optimists!

Hon ALISON XAMON: I have always loved the rain.

Mrs Murphy: The royal show people are not quite so keen!

Hon ALISON XAMON: But at this point you are saying that it is looking about a request for 140 ggalitres, because when I asked you these questions back in estimates, which was in May–June, you were still saying you were hoping it would be around that.

Hon KEN TRAVERS: I think you said 50–50.

Mr Moore: The wrong side of the 50 came up!

Hon ALISON XAMON: Do you think, even based on where rainfall is at now, there would be any chance at all you would be asking for the full potential pool of 165 gig?

Mrs Murphy: No.

Hon ALISON XAMON: If rainfall were to stop now, which is always, unfortunately, a possibility —

Hon PHILIP GARDINER: And a likelihood—we are finished.

The CHAIR: This is a farmer!

Hon ALISON XAMON: I am sad to hear you say that, and you would know more about this than I do.

What will be the maximum that you are going to ask for? What is the worst-case scenario you will be asking for this year?

Mrs Murphy: It is 139, 140—around that, maybe 141! It just depends. We usually get a bit more run-off, even when the rain stops. So 140 in broad terms would be probably the most, whether the 140 ends up 140.6 or something of that order —

Mr Moore: Bear in mind that would be our request, and obviously the regulator grants us —

Mrs Murphy: The regulator will do its own modelling and decide what —

Hon ALISON XAMON: I understand, but usually what tends to be granted tends to be in the ballpark figure of what it is that you request —

Mrs Murphy: Yes.

Mr Moore: A bit down on what we ask for, yes.

Hon ALISON XAMON: — so I am just very conscious of how much you are saying that you are going to need.

Mr Moore: Could I just add, that bear in mind this has been the second driest inflow record ever. It is something we are still hopeful is an unusual situation.

The CHAIR: Are you a betting man?

Hon ALISON XAMON: I suggest it is not unusual; I suggest it is the trend.

Mrs Murphy: That is why in our forward estimates we have some triggers for the groundwater replenishment trial, and we are still enormously hopeful that we will get a formal go-ahead early next year—the second quarter next year, let us be real—to proceed with that and to move ahead with groundwater replenishment with the aim, as Perth grows, of augmenting our scheme with recycled water rather than continual reliance on aquifers.

Hon ALISON XAMON: Good. I will move on to a related issue. I refer to the performance summary on page 44.

Hon KEN TRAVERS: In terms of the go-ahead that you are looking at for the groundwater replenishment, how many gigalitres does that call for initially?

Mrs Murphy: Our original plan was for seven gigalitres, but we are having discussions with our regulators at the moment to see if perhaps we could make the first stage maybe 10 gigalitres and go a little bit bigger. The aim is to get the trial completed at the end of the year and get our regulators to sign on approval for the whole process; and then whether it is seven gigalitres or 10 gigalitres, we will probably make that call depending on two things. One on what water we have left in the dams and what we think we have going forward; and the second aspect is that we are aiming to do as much of the work as we can fully on our site, which limits the time for approvals that are required, and we are doing a bit more engineering study now, and if we can build 10 gigalitres instead of seven in that same space that will be the plan.

[3.30 pm]

Hon KEN TRAVERS: Is the plan that you would then be able to immediately draw down an additional 10 gigalitres?

Mrs Murphy: Yes. That is agreed and has been signed off by the regulator. The science for that part is locked away. The water molecules clearly do not know where they came from, but if it goes in here, it comes out there. Remember that this is augmenting not the shallow superficial aquifers that are linked to the wetlands directly; this is using the very deep aquifers, so they are much less susceptible to movements due to climate.

Hon KEN TRAVERS: What is our annual growth in demand in terms of gigalitres?

Mrs Murphy: Demand has been flat for the past nearly five years because we are pretty much keeping up with population growth through demand management and working with the community, stakeholders and customers. Clearly, there is a law of diminishing returns on that eventually, but we are not there yet. The growth is pretty much flat at the moment. However, as we go forward, the modelling shows that even as the climate dries, there will still be some years when we will get rain. In fact, a lot of the climate work indicates that we may get years of more extreme events. Whilst the climate is drying, more extreme events are possible. In our forward planning we are hoping that we will get rainfall some years, and we will then have a banking ability to use that water first and take less groundwater in those years. Our groundwater replenishment—the water we are putting in—we can bank, if you like, and save for the future. There is no evaporation from those deep aquifers.

The CHAIR: For a not rainy day.

Mrs Murphy: Save it for a not rainy day, indeed. That is the model and the thinking going forward.

Hon KEN TRAVERS: Where do we see the long-term sustainable drawdown from the Gngangara mound ending up and when will we achieve that?

Mrs Murphy: In very simple terms, 120 plus whatever we put in. That is not all from Gngangara; that is groundwater in general, so it includes Jandakot and a number of other aquifers. So it is a somewhat glib statement.

Hon KEN TRAVERS: They are mainly deep ones now, too, aren't they; there are very few superficial ones.

Mr Moore: We will be injecting into the deep ones, the Leederville and the Yarragadee, and recovering from those aquifers and not from the superficial ones.

Mrs Murphy: In the longer term the only superficial ones that we really want to be taking from are those that are exactly on the coast, so that water is flowing out to sea anyway. That is the longer term model. In broad terms, it is 120 plus what we put in, plus 145 of desal, plus whatever we can

get from the dams. The groundwater replenishment—the bit we have put in—we can grow over time as Perth grows. We can augment that; it is not a billion-dollar augmentation. There are some significant costs up-front to build the basic infrastructure and then we can augment it in smaller bites as we go.

Hon KEN TRAVERS: If we continue to have the sort of rainfall that we have had over the last couple of years, we are still a fair way away in terms of infrastructure development before we are going to be working at 120.

Mrs Murphy: It depends what you mean by “we have had in the last few years”. If you mean this year, for the future, we are a fair way away.

Hon KEN TRAVERS: Every time I see one of your maps you have a new long-term average draw, so I am not sure what I mean by it either!

Mrs Murphy: It does bob around a bit. I know; I often feel that we could make more money by selling our graph than we could by selling water. Last year was not an average winter but not too bad, so they do bounce around a little. It is hard to project. If instead of being the second driest year on record this year had been the fourth driest on record, we would have been down to 120.

Hon KEN TRAVERS: Right.

Mr Moore: That is the sort of determinant. If you take 2010 and 2012 and say that is the new norm, we are in a different ballpark anyway and we have got to start thinking seriously about other things.

Mrs Murphy: With those very low rainfall years it is not just water supply; there are so many other issues that are connected to it. I worry that we focus on the water supply issues and ignore the fact that at rainfall levels like we have had, Kings Park will be losing trees. There are a whole lot of other things that are nothing to do with us.

Hon KEN TRAVERS: Even in areas where you are not drawing down water, the natural watertable reduces. Banksia woodlands will go.

Mrs Murphy: The community needs to think about what this means in a broader context than just water supply.

Hon PHILIP GARDINER: The trouble is that you will only get that rethinking when people see the trees dying. That is happening in the country.

The CHAIR: They might tell you if you go and have a look; they are dying.

Hon PHILIP GARDINER: In Kings Park as well?

The CHAIR: In the south west they are dying.

Hon KEN TRAVERS: It will depend on the trees. Banksias will go first because they do not have a particularly deep root system. Anyway, that is probably for another day.

The CHAIR: Big trees are dying.

Hon PHILIP GARDINER: Big trees are dying; there is no doubt about that.

Hon KEN TRAVERS: In terms of the capital works in the budget, how much of that money for the groundwater replenishment trial is currently allocated in the budget, or is that additional allocations that are going to apply?

Mrs Murphy: We have enough in the current estimate to do the seven gigalitres. For the 10 gigalitres, it is more money but it is not outrageous, and we could probably reprioritise and rearrange things to meet that. What we have in our current forward estimates is adequate to do the work we need to do in that period.

Hon ALISON XAMON: I will go back to the groundwater replenishment trial and then come back to my original questions. I am referring to page 28. It talks about the groundwater replenishment

trial in the future, and that by 2021 it will be contributing 10 per cent of Perth's total water supply. How many gig are we talking about by 2021?

Mrs Murphy: Thirty-five, from memory.

Mr Moore: Beenyup is 28 potentially, so it is 28 to 30—about that sort of figure.

Hon ALISON XAMON: Twenty-eight to 30?

Mr Moore: Beenyup has the capacity at the moment to go to 28. Alkimos, as you know, has just been built, so around about that time frame depending on the success of the whole thing and the viability. The potential is to go to more groundwater from there as it develops. If you use 28, that is about 10 per cent of the current demand.

Hon ALISON XAMON: That clarifies it. So what you were talking about is 10 per cent of the IWSE, not 10 per cent of overall Perth usage.

Mrs Murphy: IWSS.

Hon ALISON XAMON: That is what I was trying to get an idea of. It is 10 per cent of the IWSS.

Mrs Murphy: It gets increasingly difficult to separate out bits of the IWSS because they are so integrated these days.

Hon ALISON XAMON: I had some questions about restrictions and contributing more by 2021. I think this follows on from the line of questioning that Hon Ken Travers was following. The restrictions in terms of groundwater replenishment going into the future, presuming that the trial is successful, and we are all hoping it will be —

Mrs Murphy: There is no reason not to believe that at this point.

Hon ALISON XAMON: Early indications are that it will be. Is it possible that a more ambitious groundwater replenishment program might be considered for the future?

Mrs Murphy: It is unlikely. It is possible; all things are possible. The deep aquifers that we are recharging are more prevalent and more accessible north of Perth than south of Perth. We have built in access to waste water north of Perth; in the long term we will recycle virtually all of the waste water north of Perth. In the south of Perth, the groundwater formations are different and there are other uses. At Woodman Point it is highly likely that that water will become an increasing source for industry. There is not a lot of opportunity for groundwater replenishment down there; there is some, so we could look at elements of that. The Kwinana strip and that Cockburn area in the future will need water. Eventually groundwater may not be available to those industries and we see that using waste water for industrial use makes a lot of sense. Similarly, with the Subiaco waste water treatment plant, which does not have as much growth as the others—the growth tends to be on the perimeter, as we were speaking about earlier—we see most of that will be used more for public open space, realistically.

Hon ALISON XAMON: How many gig are we talking about?

Mr Moore: In Subiaco?

Hon ALISON XAMON: Yes.

Mrs Murphy: Eighty gig?

Mr Moore: It is 60 to 80 megalitres a day.

Mrs Murphy: About half you can recycle. The reason you can only recycle some is that the waste that you are pulling out of the waste water still has to be disposed of somewhere. If you are disposing of it in the marine environment, it does need enough water with it to flow to get the mix in so that there are no harmful events in the ocean. If you think of it simply, all we are doing is pulling the water out and leaving everything else in the waste water. You are concentrating that waste stream, so you need to keep enough volume of flow to get the correct mixing.

Mr Moore: In the case of Subiaco, though, we would be looking for public open space. It would not need significantly more treatment than it currently has; a bit of filtration and chlorination, for argument's sake, would be adequate. That has already been used in the immediate area.

Hon KEN TRAVERS: When you say public open space, are you talking about selling it to people for public open space or giving it away?

Mr Moore: It depends on the type of public open space. If it is community public open space, it is available free of charge at the gate. It is up to whoever wants to use it to move it from there to where they want it.

Mrs Murphy: Our policy is that if it is for public good and not for any commercial gain, at the gate it is at no cost. If it is for commercial gain—for example, we do sell treated waste water to Iluka in the south west—we charge a commercial rate for that water. That is a very different set of arrangements than for public open space.

Hon ALISON XAMON: With the commercial rate, how much per litre are you talking about?

Mrs Murphy: I think that is commercial-in-confidence. I do not actually think I can share that. It is a rate that is obviously cost effective to their business in comparison with other water sources or they would not do it.

Hon PHILIP GARDINER: Can I just ask a question?

The CHAIR: I will just let Ken go for a sec; I will try to direct traffic.

Hon KEN TRAVERS: What is the demand for the take-up of that water by owners of public open space? Even if it is free at your gate, they have to then provide the connections.

Mrs Murphy: We currently supply water for all that McGillivray complex; that is all watered with recycled waste water. They pay the extra over costs.

Hon KEN TRAVERS: For McGillivray it would not be much; it would be the same price as pumping it out of a bore, almost.

Mrs Murphy: You would hope so.

Mr Moore: It is actually a lot cheaper for them, because they save on fertiliser costs.

The CHAIR: They would!

Mrs Murphy: Seriously; they were shocked at the beginning, apparently, that the lawnmowing went up.

Mr Moore: Lawnmowing costs went up and fertiliser costs went down.

Mrs Murphy: There is quite a big tract of playing fields—there is sort of a band through there. We have not built it yet but it is in the forward estimates somewhere—I am not quite sure what year—to build metered stand pipes outside our plant so that council vehicles can come and fill up with treated waste water for verge watering and those sorts of things, which is attractive to a lot of the councils, firstly, as being good corporate citizens, and, secondly, because it reduces reliance on fertilisers.

Hon KEN TRAVERS: I guess one of the reasons I was asking that was that, as I understand it, under the original proposals for the Alkimos area, LandCorp was looking at this third pipe of recycled water that would be available both for households and public open space, because there is no groundwater available to water the —

Mrs Murphy: That is the advice so far.

Hon KEN TRAVERS: Yes; to provide for the playing fields or public open space across that area. My understanding is that that is now not occurring. Am I correct in that? I have heard rumours that that proposal has been dropped. Is that correct?

Mrs Murphy: That proposal does not stack up financially for a couple of reasons. One is that the development that was planned was to start as far away as possible and move back in towards the waste water treatment plant, which would mean that everything would have to be built in the first instance and that is not necessarily amortised over all of the development. The capital cost was quite high. The other reason is that for public open space or areas where sprinklers are above the ground or there are taps, the health department requires the water to be of gulpable quality, so it actually has to be treated to a greater extent than if it is subsurface irrigation in a public open space area. There were quite a lot of costs for that. At the end of the day, the costs were substantially greater. We potentially have some allocation of groundwater there. It would be easier and cheaper to do some sort of deal with that.

[3.45 pm]

The other problem is that the existing waste water treatment plan does not have great volumes of water going through, so there is not actually much water to recycle at this stage. We need to get the population in there to have the waste water, to recycle the waste water to water the gardens. There is a bit of chicken and egg in actually having access to treated waste water, and the developers would want the water before the people are there.

Hon KEN TRAVERS: I guess that is what I come to —

Mrs Murphy: At the moment, I cannot see it is going to get up.

Mr Moore: Finances just do not allow it.

Mrs Murphy: The finances do not work. The developers believe that the public will not pay the amount required to make that a viable scheme.

Hon KEN TRAVERS: What will happen to the water there then?

Mrs Murphy: While the plant is very small it will go out to sea, but as the plant grows, that site—we own enough land to have a recycling and reinjection facility on our property. We always envisaged that we could use groundwater replenishment there, and in the future we will be taking groundwater from that area for public drinking water purposes further north, so we would be looking at groundwater replenishment there as well.

Hon KEN TRAVERS: From the deep aquifer or the superficial aquifer in that area?

Mrs Murphy: Both; the superficial aquifer is proposed for water going out to sea; we would do that first. But later on we could be potentially —

Mr Moore: Most of our groundwater schemes are a combination of superficial and Leederville bores, with some Yarragadee bores in it. Even the coastal groundwater schemes have some Leederville bores, but it really depends on exploring the aquifer as to the availabilities of those.

Hon KEN TRAVERS: So where are we going to get the water for the playing fields and the like in that Alkimos area?

Mr Moore: It is an interesting question. We have been having a number of discussions with the City of Wanneroo and the Department of Water. There have been some discussions in recent times with the Department of Water on their now understanding of the availability of groundwater in that area. For many years the plans had shown quite a reasonable amount of groundwater availability, like sustainably 10-plus gigalitres, and that has dropped down now. We are having some debate with them about just how much is there. But we have basically said, “Look, if there’s a gigalitre and a half or something needed for POS, POS is an essential requirement for that area and it would come out of our allocation”, or should. We do not make the determination.

Mrs Murphy: We have also been working with most of the councils—the City of Wanneroo is a great example there—on how much water you actually need for public open space, because the historical way those new suburbs have developed is often quite wasteful of water. Lawn becomes a

de facto choice on every horizontal surface, and clearly if you have a playing field you need a grassed surface, but the surrounds and the areas around it and the rest of the public open space can be done differently.

Hon KEN TRAVERS: It is the whole issue about activated muddy water in active playing areas.

Mrs Murphy: Yes. The City of Wanneroo's initial estimate of how much water they need was about twice what the current thinking is. With a bit of better design, I think it is quite possible that, over time—it cannot happen instantly because councils cannot afford to do major things—over the next 10 years we are going to see changes in public open space in general and how much water we need. It is possible that the state and the environment can supply more public open space in a bigger Perth with the same or less water by better plantings and better landscaping solutions.

Hon KEN TRAVERS: This is probably not your area —

Mrs Murphy: It is out of our area.

Hon KEN TRAVERS: Yes. The other side of that though is that the developers come in and they are often the ones who do the development, put in that grass on every level surface as you have described it, and prepare an estate at a higher level; it has always been a problem that they develop their estates at a higher standard than the councils maintain. In some areas like Iluka they have special rates to maintain it at that same level. If the developers have enough licence to do that is there not a danger that they will just keep moving their licence up if there is not some other process going on to restrict the developers in what they do?

Mrs Murphy: Yes, but the Department of Water is looking at a whole lot of water efficiency for councils and those areas and putting some rules in.

Hon KEN TRAVERS: You are saying to get the developers —

Mrs Murphy: The developers generally will do what they believe the community wants, because that is where their market is. It is a matter of working with them, and some are very good and some perhaps less so. But you have actually touched on the nub of the Water Corporation's issue going forward: to make the changes in behaviour and the changes in water use that we need to deliver on the numbers we are putting to government, we need to influence people we have no control over. We need to influence planning; we need to influence developers; we need to influence householder choices; and we have no official mandate to do that. I can talk until I am blue in the face; no-one has to do what I say or what our people say. So that, to me, is the real issue for us as a state to think about; it is how we make this mental leap into a different future that will benefit us. We can save money by supplying less water, but we can only do that when everybody works together.

The CHAIR: You would probably have to go beyond tipping eskies of frozen ice blocks onto your front lawn, for example; I am not expecting an answer to that.

Hon ALISON XAMON: Just as an example!

Hon KEN TRAVERS: What I am hearing there is that you are trying to do it, but you are not the body that —

Mr Moore: No.

Mrs Murphy: No.

Hon KEN TRAVERS: You could be, but you do not have the mandate to do it.

Mrs Murphy: I do not think we ought to have the mandate to do it; I think what we need to do —

Hon KEN TRAVERS: Is there a body that is supposed to have a mandate but is not doing that?

Mr Moore: The Department of Planning, I guess.

Mrs Murphy: No, I do not think it is clear. The Department of Planning's remit is not to save water. No, I think it is an ongoing set of discussions we have to have with the community. At the

end of the day, developers will develop what people want to buy; our influence is with our customers, and as we work more and more with our customers they start to push for other things. If you go to a garden centre now, you struggle to buy a non-water wise plant, and if you do, it is a feature plant clearly meant for your bathroom or some little tiny thing in a pot. Those changes have happened in less than 10 years; they have happened very quickly.

The CHAIR: Surely the problem is lawns, not those individual plants?

Mrs Murphy: Lawn is not evil in itself —

The CHAIR: I am not sure!

Mrs Murphy: I am not a garden expert. My view is that nothing, in itself, is intrinsically evil.

The CHAIR: That is fair enough.

Mrs Murphy: There are more water-wise lawns and less water-wise lawns.

Hon ALISON XAMON: I would rather have a lawn than a plastic lawn.

Mrs Murphy: I would rather have a lawn than a plastic lawn as well.

The CHAIR: Sure.

Hon KEN TRAVERS: You have permission to do it; the Greens —

Hon ALISON XAMON: Plastic lawns actually require a huge amount of water to produce.

Mrs Murphy: Plastic has its place, but not always. In Kalgoorlie, for example, they use plastic lawn strips in the median strips downtown, and in an area where they are never going to have lawn it looks marginally better than dirt, but anyway.

The CHAIR: That was one of the characteristics of Kalgoorlie.

Mr Moore: If they go back and take an example in that northern corridor, the Brighton estate that we worked on with Satterley is brilliant —

Mrs Murphy: Good point.

Mr Moore: The City of Wanneroo use, in their public open space watering, 40 per cent less water than has been traditionally the position. They started off in the discussions there with, “This is how we have to water everything.” By the time we went through a process with them, as you say, looking at what intensive watering there needed to be in playing fields versus other areas, they got it down. They are now using 40 per cent less than is standard requirement in an urban development. A lot of that is being translated, I believe, into the Alkimos area with developers and discussions with those developers.

Mrs Murphy: There are some similar developments —

Mr Moore: There is a whole lot of stuff happening. When Sue was talking earlier about the water demand being reasonably flat, one of the reasons, I believe, for that is that block sizes now are much smaller, so watering the outside of the house is requiring less of the amount of water we supply people. In many cases there is not very much land out there to water, whereas historically there was quite a lot of external watering.

The CHAIR: Does it go into the swimming pool and get evaporated though?

Mr Moore: Most of those houses do not have room for a pool.

Mrs Murphy: But an interesting thing is that a swimming pool with no cover, which normally has some paving around it, uses about the same water as the equivalent area of lawn; if you had the average amount of paving around it, a swimming pool with a cover uses substantially less water than the equivalent amount of lawn. So we are not anti-lawn or anti-swimming pools; we are saying if you have a swimming pool, have a cover; if you want to have lawn, use the right sort of products and develop your soil correctly before you plant, use those water agents to make sure your soil is

not rejecting the water and drying out. So, you can do anything you like; you just have to do it in the right way.

The CHAIR: Interesting. I will go to Hon Philip Gardiner, because I think you were patiently waiting—or maybe you have forgotten what your question was by now.

Hon PHILIP GARDINER: I almost have, in fact!

Hon KEN TRAVERS: Phil thinks lawn is for sheep to eat.

Hon PHILIP GARDINER: I am an example of having a reasonably large lawn area, which you just cannot do in the country; it does not work. We are changing so that we can reduce it and all that kind of stuff. We are an example of being in the middle of change now.

There was a thing in *The Australian* couple of days ago—it might have been the one with a very good photograph on the front page; I cannot recall now; that was my son in Melbourne! But anyway, in there you have the lines coming down.

Mrs Murphy: Yes.

Hon PHILIP GARDINER: With the climate change predicted for the south west of Western Australia—those predictions being exceeded—are we looking at another bar going out the over the next 10 years that is going to be lower; and, are we then planning effectively for that eventuality?

Mrs Murphy: We used to have a bar at about 100 gigalitres; I think our current bars are at about 50. They do move down. We are planning to cope with some years of no run-off at all, but not sequential years of no run-off.

Hon PHILIP GARDINER: Yes. Again, you were right, and you may still get the heavy summer rainfall and you can get run-off and all that kind of thing, I know, but the averages of that graph—you are familiar with the graph to which I refer, aren't you?—are quite frightening. Then back to your question, Sue, about who is going to assist the change in behaviour. Should that be sheeted back to the ERA to take into a broader perspective what is required when they are considering the pricing of water to the public? Because you do not have any control over that—that is government and the ERA. Do they need to have an additional parameter in the way they are looking at things?

Mrs Murphy: Sydney Water have done a lot of work on price elasticity with water for public water supply, and generally they have found that price is not a major driver for water. The incremental cost of water is still reasonably low, and it is highly unlikely that price alone is going to make that difference. What we do find is that our customers are very keen to make a difference and their relationship with water is very different from their relationship with something like energy. They genuinely want to use less water and are generally working very proactively with us. So I think there is some moral high ground in there that is more than a financial transaction. I think the issues I raised earlier are not specifically issues of public water supply; they are issues where they affect public water supply and they affect our investment in the future, but they are far broader issues than that. They are government in the broadest sense of government. They are not particular parties; they are the broadest ideas about how people want Perth to look for the future

Hon PHILIP GARDINER: So are you suggesting simply a PR strategy and programs, or did you have something else in mind when you made those remarks earlier?

Mrs Murphy: We work very closely across government agencies—with the Department of Planning, with the Department of Water and the Department of Environment—endeavouring to influence some of their decision making; I think we are getting some traction in that space. I think it is a three-pronged attack: it is one to work with regulators and embed, sort of, sustainability in general in the process, and I think there is a huge appetite amongst virtually all regulators and planners in that space. The second is a PR campaign with our customers to help educate them, because our customers genuinely think they are on the cutting edge of water efficiency, but despite the per capita water use coming down, it is still higher than other capital city in Australia. We have

sandy soil and hot summers, so there are a number of reasons for that, but we believe there is still quite a long way to go in that space.

Then the final thing is really about looking in general at the population mix—at the urban form. We have already seen really big changes in the way people live. The family home on the quarter-acre block is not the norm anymore; we have a lot of people who live one person to a dwelling or in single-parent dwellings, and as the population ages we are going to see a different demographic. So it is about modelling some of that and working forward. As Peter said, block sizes have come down; I believe urban infill is the next step.

[4.00 pm]

Urban infill is very hard to get going in Perth. There seems to be an obsession with owning land that we struggle to shift, but there is a lot happening in that space at the moment. The Committee for Perth has done a lot of work in that space. Richard Weller from UWA is always saying Perth has to get over its fear of heights and look at densification. Densification is the most cost-effective way of using existing infrastructure. With the demographic change, the PR campaign, if you like, with our customers and with working cooperatively across all of the various decision makers—if we do all three together—we can probably achieve some pretty amazing things.

Hon PHILIP GARDINER: I have one more question in relation to the quantity of water in the dams. I was quite astounded when I saw your graph at the last budget hearings, in which you had a line showing that water below a certain level was not potable; it was just muddy water at the bottom of the dams. We all know that dams have to be cleaned out every X number of years —

Mrs Murphy: Ours are a bit big for that!

Hon PHILIP GARDINER: Yours are big, I accept that, but have you got a plan for how you can actually filter or use that water so that it is potable or is it just not used?

Mr Moore: You can use it.

Mrs Murphy: A bit.

Mr Moore: There is a very large expense to being able to filter all that water. It is water that is held in about nine different dams, so it is about 110 giganlitres spread over a series of dams. To utilise all of it, you actually have to get it through some sort of filtration plant. We can certainly utilise it in emergency circumstances—a bit more of it than 110 and we could probably get down to 100 or a bit below that—but there will always be a bit on the bottom where you are effectively sucking up the sort of mud that you see in most other dams, and the only way to utilise it is to put it through a filtration plant. We have costed that. We have looked at sites for such a plant, but there are very, very large costs.

Mrs Murphy: The more cost-effective way, and what we are doing at the moment and what we try to do, is to pump between dams to keep fewer dams fuller, if that makes sense.

Mr Moore: We are optimising them.

Hon PHILIP GARDINER: So then, actually, you could get to clean out your dams one by one maybe —

Mrs Murphy: It is not really dirt, it is mud.

Mr Moore: It is not a dirty situation, the basins are clean, generally. They will turn over and create some fairly minor water quality problems, but basically you have got so much cleared area that it just creates, with wind-blow, mud and whatever, turbid situations.

Hon PHILIP GARDINER: Still, it is not a bad build-up over 100 years though.

Mr Moore: It is not actually build-up, as I say, it is just the exposure of the banks washing in that creates wind-blow.

Mrs Murphy: Remember, we protect our catchments a lot; our catchments are pristine. We are very lucky that we have had that legislative control for many years, so Perth dam catchments have very good water quality. The other thing to bear in mind is that if we get these extreme events in summer, which are predicted potentially in the future—so cyclonic-type events—when you get an event like that when your dam levels are quite low, the run-off from those big exposed banks is quite a lot. We actually have what we call our first rains scenario in which we have modelled whether we could actually turn the dams off altogether for a period and supply Perth just from the groundwater and the desal to let those stabilise. It is nothing bad; it is just muddy and people do not like dirty water, so you would have to let it sit for a little while, and we can do that.

Hon PHILIP GARDINER: The other alternative is actually putting bitumen or concrete or something or other around, I know has been talked of. Is it not practical? It is not aesthetic; I know it is not environmental!

Mrs Murphy: Not practical and probably not popular with some of the other members over here!

Mr Moore: I was going to say there are couple of issues. The dams are also the forests.

Mrs Murphy: Bituminising is something we have not really explored.

Mr Moore: It is a brave governmental decision, shall we say!

The CHAIR: A courageous minister!

Hon KEN TRAVERS: It is a brave committee member to say that!

Mrs Murphy: We would not be suggesting that, no.

Hon PHILIP GARDINER: I guess you are quite pleased with the answer too!

Hon ALISON XAMON: I refer to page 44 and the performance summary—this is what I was on about half an hour ago. What is the reason behind the 20 per cent increase between 2008 and 2012 in electricity consumption per unit of output of water?

Mrs Murphy: Desal 2 coming online, largely.

Hon ALISON XAMON: That is what I thought. What is the reason behind the 21 per cent increase between 2008 and 2012 in electricity consumption per unit of output of waste water, which is the one directly underneath that?

Mrs Murphy: Where are we? Sorry I am not —

Hon ALISON XAMON: It is the line directly underneath what you are looking at. There is electricity consumption per unit of output for waste water and there has been increased electricity consumption per unit.

Mrs Murphy: It will be odour control, probably.

Mr Moore: Yes, there is a lot of odour control going on in the treatment plants now, and of course there are new treatment plans online. There are very significant amounts of odour control in all of the major treatment plans now that odour control has been upgraded in recent years. We are now getting the sort of 10 to 12 air replacements and they have both chemical and biological scrubbers on them.

Mrs Murphy: Odour control is like a cover and then you have got pumps that pump all the air that is coming out and then they go through scrubbers and air is pumped through again, so is a lot of air-blowing and pumping.

The CHAIR: Can I say on behalf of the residents of Floreat that we appreciate the odour control; it is a big difference.

Mr Moore: It changes one perspective, but when we take the covers off to do maintenance, it is much more noticeable, otherwise you do not notice it.

Hon ALISON XAMON: Is the electricity consumption because there is now more water going through or is it simply because it has improved the standard of odour control?

Mr Moore: In waste water?

Hon ALISON XAMON: Yes.

Mr Moore: Probably a little bit of both.

Mrs Murphy: But this is per megalitre, so whether it is more water or not —

Mr Moore: It will not make any difference.

Hon ALISON XAMON: That is what I am trying to get at.

Mrs Murphy: So both.

Hon ALISON XAMON: So it is really a bit of both.

Mrs Murphy: This is showing, irrespective of volume—of throughput—that we are doing more treatment.

Mr Moore: Alkimos has come online, for argument's sake, with a brand-new treatment plant. We have upgraded treatment plans in the Mandurah area and we have built other treatment plants outside of the Perth area, but we have also put a lot more odour control in, as I say. We have upgraded Woodman Point and upgraded the odour control at Subiaco and Beenyup.

Hon ALISON XAMON: When compared with the 22 per cent increase in total energy consumption, which is the line directly under that, over the same period, why have reportable greenhouse gas emissions increased so much, because that has increased by 48 per cent?

Mrs Murphy: I might have to take this on notice, but I believe it is because with reportable greenhouse gas emissions, even though we are buying renewable energy generated from renewable generator for our desal plants —

Hon ALISON XAMON: That was part of my question.

Mrs Murphy: We are, but the way it is calculated is they multiply your energy use by the average greenhouse emissions across the grid. I believe it is a reporting anomaly, but I can take that as a question on notice if you like.

Hon ALISON XAMON: I would like that as supplementary.

Mrs Murphy: There is an issue that has come out of the national reporting for us. They take your net energy and multiply it by the average across the grid, irrespective of where you are buying energy from.

[Supplementary Information No C1.]

Hon ALISON XAMON: Page 16 still refers to the zero footprint objective.

Mrs Murphy: Aspiration—we are a long way from there.

Hon ALISON XAMON: So you can understand why I —

Mrs Murphy: Yes.

Hon ALISON XAMON: It is a worthy aspiration and I encourage you to do it, but of course those figures are completely at odds with that, so obviously I will take that on notice and I would get more detail that, thank you.

Also, moving on, I want to refer to pages 6 and 26, which refer to waste water recycling and specifically country versus city, which I am sure Hon Philip Gardiner will be interested in. Given that Water Corporation already recycles 13.5 per cent of waste water, and given that waste water recycling in some WA regional towns is already much higher than that would it be feasible to set a

higher target for waste water recycling in Perth and Mandurah than the 30 per cent that is currently targeted for 2030?

Mrs Murphy: Probably not, because the volume of waste water in Perth compared with the volumes in the country is miles out. So, even if you recycle 100 per cent in the country, you could not move that overall percentage figure very much. When we get going with groundwater replenishment that will start to move more, but you will never recycle 100 per cent. With the higher-use recycling, as we are proposing at Beenyup, you still have to have water flushing through, as I said earlier. There is a level of how much you can sensibly get.

Hon ALISON XAMON: But I am sure you would agree that we could still do significantly better than we are doing now.

Mrs Murphy: We could, but it becomes a matter of money as much as anything. At the moment the biggest competitor to recycled water is groundwater; and there is cheaply available groundwater, and I do not mean for big industries, but for small industries or different things. So, there is no incentive for anybody to change from that at the moment.

Hon ALISON XAMON: I have got that we recycle nearly 51 per cent, on average, of waste water in country areas, but 7.9 per cent, on average, in the Perth–Peel region. Are you saying primarily that the reason for that is purely financial?

Mrs Murphy: It is a big component—probably the biggest single component. There are probably many components, but I think that is the biggest single component

Hon ALISON XAMON: Potentially, if DOW were to revise the VGAR, that would be a significant trigger, perhaps, to being able to encourage more waste water recycling.

Mrs Murphy: It could be, but there are consequences of those sort of decisions. I mean it is not just about water; it might be a cost that puts business to the wall. I cannot really comment on that.

The CHAIR: I want to just challenge using the term “recycling” in this context, because it is actually re-use.

Mrs Murphy: All water is recycled.

The CHAIR: It would be nice if the language could be used consistently, because people think when you say “recycling” that you start with one thing and you end up at the same thing, but you are not, you are actually providing a secondary re-use, which is probably how it should be described. I just wondered whether there is a reason that it does not get described in that way.

Mr Moore: We were just having a discussion about that earlier, because if you go to Singapore, it is new water or whatever else.

Mrs Murphy: They give it its own cute name!

Hon ALISON XAMON: They call it new water, do they?

Mr Moore: They have used water coming out of the waste water treatment plant and then when they produce in the plants it is called new water. We had some focus group activity on that here, and some other focus group responses have been, “Don’t play around with names like that, we know what you’re talking about.”

The CHAIR: I think it is telling people that they are getting something they are not.

Mrs Murphy: Focus groups have said to us, “It looks like you’re hiding things, so be honest.” So we try to be. We talk about recycling waste water or re-use water.

The CHAIR: But it is actually re-using waste water.

Mrs Murphy: Technically, the water itself is the same water, it is just what is mixed in with it at the time, be it seawater, waste water or water in a dam, what we are doing, repeatedly, is pulling out the bits that are not water and using that other bit. So, it is probably semantics. But, re-use water or

recycled water is not in itself good or bad, that is the other issue. It is not like desal water is evil and recycled water is good. Our view is that we know the energy involved and the costs of taking seawater and using it for drinking water purposes, so anything that is less energy and less cost than that is an absolute no-brainer, and anything that is more energy and more cost than that we think seriously about why we would do it, if we were on the coast. So, some of the re-use opportunities are very expensive and quite energy intensive, whereas some of them, like the McGillivray-type option are low energy and relatively low cost. We have found that it is really hard to have a blanket rule because there are all these very different options and different opportunities.

Hon ALISON XAMON: I want to refer to per capita scheme water use.

Mr Moore: Is that on page 44?

Hon ALISON XAMON: It is probably referring to the chairman's report on page 2, where there are references to reducing water consumption and also the sections on "Water Forever" on page 16 and climate resilience on page 26. I am sorry, it is sort of across the report.

Mrs Murphy: That is all right; we have got the gist.

Hon ALISON XAMON: What is Perth's current average annual per capita scheme water use?

Mrs Murphy: We believe that it is 135 kilolitres, but that is across the whole scheme, not residential—we are still fiddling around with the numbers on what is what.

Hon ALISON XAMON: I was then going to ask: what is Perth's current average annual per capita residential scheme water use exclusive of water used to supply commerce, industry, agriculture, parks, water treatment and firefighting activities? I am happy to take that on notice.

Mrs Murphy: It is just under 100.

Mr Moore: I think we are trying to respond to that question you asked recently.

Hon ALISON XAMON: I have. Do you not have that data?

Mrs Murphy: No; we are still working out the year-end, because remember at the moment, we only meter six-monthly, so you have to wait for the whole cycle.

Hon ALISON XAMON: You are right, I have asked this.

Mrs Murphy: You have asked that question and I believe it is under 100, but —

Hon ALISON XAMON: Under 100?

Mrs Murphy: Yes, but there is still some debate going on within the corporation's measuring team as to exactly what the number is.

[4.15 pm]

Hon ALISON XAMON: The "State Water Plan 2007" calls for a reduction in Perth's average per capita residential scheme water use to less than 100 kilolitres by 2011. I am interested to see where we are at with that target.

Mr Moore: Fairly close.

Mrs Murphy: It will be very close.

Hon ALISON XAMON: It sounds like I need to wait until I get those questions back.

Mr Moore: The same question has been asked. We are trying to respond to it.

Hon ALISON XAMON: I will ask about the showerhead swap. I refer to page 27 and the section on the Perth water efficiency program. How many inefficient showerheads are expected to be replaced by the time the showerhead swap program is completed and what percentage of all inefficient showerheads is this figure expected to represent?

Mrs Murphy: There were 120 000 in the first tranche and another few are going through. That is how many we have swapped. We are finding that the numbers are dwindling now. Despite them being free, there is not a big take-up rate. We do not know exactly how many inefficient showerheads are out there.

Hon ALISON XAMON: Of course, because you have not gone into every single person's house to check them out, but can you take an educated guess?

Mrs Murphy: We are getting close to saturation. We send a bill to about a million people around the state. In Perth, we sent a bill to 800 000 or 900 000 people, off the top of my head. We have swapped about 130 000 by now. It is dwindling down. A percentage of those people will already own a water-efficient showerhead, there will be a percentage who do not care, there will be a percentage who deliberately buy water-inefficient showerheads and there will be people who are just not —

Mr Moore: There is a percentage where the type of showerhead you have in the house is not compatible with the one we are swapping it with. Some people have a hose-based showerhead. They will not take one of these others. Most of those would be efficient anyway. It is difficult to know.

Hon ALISON XAMON: Do you think that program is pretty much towards the end of its life?

Mr Moore: Yes. It was running very smoothly at several thousand a week and the last couple of monthly reports show that it is very much a dribble.

Hon ALISON XAMON: What ended up being the cost for the showerhead swap program in 2011–12?

Mrs Murphy: It was funded 50–50 by the federal government. I have no idea; it is not in the annual report.

Hon ALISON XAMON: No, it is not; I am sorry.

Mrs Murphy: It is not vast sums of money.

Hon ALISON XAMON: I am really interested in knowing how much it ended up being.

[Supplementary Information No C2.]

Mr Moore: Were you asking for the 2011–12 figure?

Hon ALISON XAMON: The 2011–12 figure for the showerhead swap program for the Water Corporation. You have just advised me it is 50–50 in terms of the federal government, so I will be able to figure out how much the federal government component is. In terms of the annual water savings in billions of litres per dollars invested in that program, how does that program compare with investment in new water supply infrastructure such as desal?

Mrs Murphy: It is cheaper. I do not have those numbers here; I am sorry. We only brought the annual report.

Hon ALISON XAMON: But you refer to it.

Mrs Murphy: We did some calculations of those water efficiency numbers recently. It might be on our website.

Mr Moore: No, it will not be there.

The CHAIR: Perhaps we will add that to C2.

Mr Moore: To be honest, I am not entirely sure that we can provide that information because time is needed for that to go through. We will see what we can get out of the report.

Mrs Murphy: Theoretically, every time a showerhead is swapped, we make an assumption that from now on that showerhead uses less than the one it was swapped for and we embed that into the

future forecast. We have savings like that that we assume will last forever and then we have other savings that are seasonal. You take the showerhead swap off the baseline and then you ask what we are using lower than last year month by month. You cannot necessarily attribute a litre saved to one particular thing. Someone may have chosen to use less water because they saw one of our ads or they may just have chosen to use less water or they might have been on holidays and did not use any water. But with the showerhead swap, we know that for every minute that shower runs, less water is going through it. It is like a dual-flush toilet versus a more water-inefficient toilet. It gets difficult to pin down the reason for some of the changes. How do you know that the person who has the new water-efficient showerhead does not take a longer shower? You have to make some assumptions and nail a few things down.

Hon ALISON XAMON: But you must have an idea about the cost in the same way that you decided it was not cost effective to subsidise rainwater tanks. There are always assumptions around this.

Mrs Murphy: We can tell you based on the assumptions but when we do the showerhead swap, we scan people's bill. We have a record on which billing addresses have the new showerheads. Our aim is to do a more longitudinal study to see what their long-term water use is by comparing those bills with the bills of people who did not do the swap to get long-term numbers. We have theoretical savings but the real proof will be when we get the results of the long-term study.

Hon ALISON XAMON: I refer to page 27 and the section on reducing water use. Specifically, the integrated regional water efficiency program mentions the installation of 13 650 smart water meters in Kalgoorlie–Boulder. I am aware that 13 000 properties in the Pilbara will also receive smart water meters in six months. What are the reasons for rolling out regional smart water meters in regional towns first?

Mrs Murphy: The cost of water supplied in those towns is significantly higher than the cost of water supplied in Perth but we charge our customers the same amount and the government pays an operating subsidy for the difference. If we can save on expensive water, it saves money for not only the Water Corporation but also the government.

Hon ALISON XAMON: I have to say that I have seen some of the stuff that the Water Corporation is doing on water conservation in Kalgoorlie–Boulder in particular. I think there are a lot of things that we could be doing in Perth that are being done there. How soon do you think it is likely we will see these smart water meters rolled out in Perth, Peel and the south west?

Mrs Murphy: It will be a long time.

Hon ALISON XAMON: When you say a long time, how long?

Mrs Murphy: We do not have a particular plan. It is very expensive; it is not cheap. The Kalgoorlie program was funded 50–50 with the federal government. We came in well under budget and were able to access the rest of the funds that they had allocated to us, which is how we could afford to do the Pilbara. When it is funded 50–50 with someone else, it stacks up, but the cost of a smart meter is more than 10 times the cost of a manual meter. Manual reading is quite cheap but the payback period for a smart meter is longer than the life of the meter.

Hon ALISON XAMON: Have any calculations been done about the relative value of smart water meters in terms of annual water savings per dollar spent compared with up-front capital costs and ongoing operational costs?

Mr Moore: We anticipate having that information from Kalgoorlie–Boulder in 12 months after it has been run for a full year.

Hon ALISON XAMON: Do you have some early indications?

Mrs Murphy: The early indications have been about leakage removal. We found that one in five customers appear to have an internal leak.

Hon ALISON XAMON: One in five?

Mrs Murphy: Some are quite small. With a smart meter people can see that water going all the time, even in the middle of the night. We will never have the resources to go through every bill and every bit of smart meter data to find that out but if a customer has access to it, they can look at it and ask why 10 litres is going through all the time.

Hon ALISON XAMON: Do you anticipate that one in five Perth households might have a leak? Do you have any comparative data at all on that?

Mr Moore: There is no data of that nature.

Mrs Murphy: The leaks depend on the type of garden you have or it can be a dripping toilet. If it is a cracked reticulation pipe under the ground in the sand you might never find it. A smart meter would help them find that but at a couple of hundred dollars a meter, you would have to be saving a lot of water.

Hon ALISON XAMON: A couple of hundred dollars a meter?

Mr Moore: I think it is less than that.

Mrs Murphy: By the time it is installed.

Mr Moore: I was going to say, you need the communication equipment to go with that.

Mrs Murphy: It is a little phone, really.

Mr Moore: We are doing work with Western Power to look at their smart meters and our smart meters to see whether we can bring the information back through the power network. We are continuing to explore opportunities but the way it is sitting at the moment, it would be quite expensive to roll it out through metropolitan Perth.

Hon ALISON XAMON: When you say a couple of hundred dollars a meter, approximately, is that including the federal government subsidy?

Mr Moore: That is the total cost.

Hon PHILIP GARDINER: Hon Alison Xamon talked about the country supplies and you talked about the cost and operating subsidy. Are any of those regional supplies at a lower cost than the cost of city water?

Mr Moore: Yes, but I cannot tell you which ones they are.

Hon PHILIP GARDINER: Would you mind taking that as a supplementary question?

Mrs Murphy: They vary. You calculate the scheme each year and often it is parts of schemes, not whole schemes. We do not receive operating subsidies—the old CSOs—in Geraldton. Geraldton is largely cost reflective at those rates, so it must be about the same as Perth. If you have a stand-alone bore scheme, some of those schemes are okay. It is one or two small schemes.

Hon PHILIP GARDINER: I was thinking of the one at Moora.

Mr Moore: Moora? I would be surprised.

Mrs Murphy: I would be surprised too.

Hon PHILIP GARDINER: I would be interested to know. I always assume that everything is more expensive in the regional towns. It would be useful to know that that is not totally the case. I am sure that the goldfields supply is more expensive.

Mr Moore: Operating subsidies are recalculated every three years. The information I can give you today or next week on what the situation is now is based on the last review that was done three years ago. If we spent any capital in some of those locations in the intervening period, it will then attract an operating subsidy going forward. I am happy to provide you with the information that we have on the basis that it might be changing after the ERA does the next review.

Hon PHILIP GARDINER: That is fair enough.

Mrs Murphy: A very small capital investment can make the whole scheme unviable.

Mr Moore: Do you want us to take that as a supplementary?

Hon PHILIP GARDINER: Just any of the regional towns at the current time, with the qualifications you might apply, that are either less than or equal to the city cost.

Mr Moore: That are charged at less than the city cost.

[Supplementary Information No C3.]

Hon KEN TRAVERS: On page 12 of the annual report you have the operating efficiency annual target, which shows that you actually exceeded the two per cent target and got 2.3 per cent. Can you tell us what that is in dollar terms and how you achieved that? Also, how did you achieve the efficiency dividend of \$20.8 million?

Mrs Murphy: You are aware that our board has required us, and the ERA holds us to account for, the two per cent efficiency dividend, accumulative year on year. As at the 2011–12 financial year, the cumulative savings through that two per cent alone from 2004–05 when it started were \$324 million. The operating costs if we had not done that would be \$324 million higher than they are today. It is a substantial amount and significantly greater than the operating efficiency dividends—whatever they are called—that were imposed on us by government.

Hon KEN TRAVERS: Is that since 2005?

Mrs Murphy: That is right. This only goes up to 2011.

Hon KEN TRAVERS: That was last year.

Mrs Murphy: That was last year, you are right! This says under “efficiency saved” that it was \$29 million last year. Over and above that the efficiency dividend we were required to provide back to government was \$20.5 million, and we provided all of that.

[4.30 pm]

How did we do that? Well, the two per cent—we do it a number of ways. Firstly, we apply half a per cent blanket across all parts of the corporation, and we say to everyone, “You’ve just got to do that through continuous improvement and running your business tighter.” There are some efficiencies of scale. As our scheme grows, you can do more with the same, which is one of the ways we return some of that two per cent.

Mr Giorgi: Strategic contracts.

Mrs Murphy: Yes. We have a couple of large contracts, such as power—there are a few of them—chemicals; some of our big contracts. We have been able to strategically amalgamate numbers of small contracts and negotiate better deals, so we look at strategically how we contract to make savings on those things. The efficiency dividend, over and above that—we did the usual trawl through of any discretionary costs that we could rein in. We have actually stopped some internal programs on things, which might be perhaps some of the work we were doing on culture change and some of those things. We have slowed some of that work down to make sure that we were keeping our spending at the right rate. Because the two per cent has been in place for five years now—more than that; this is the seventh year now—seven years, that concept of continuous improvement and watching costs is fairly firmly embedded, so sometimes it is very hard at the end of the year to pinpoint exactly where a saving has come from. We can see that things have come in under budget, but it has been a bit uniform last year. There was not a particular success in some areas over others.

Mr Giorgi: That is right.

Hon KEN TRAVERS: But in terms of the five per cent efficiency dividend of government, there are non-discretionary —

Mrs Murphy: We were asked for three on top of our two, plus two, plus two, plus two.

Hon KEN TRAVERS: All right. So the 20 is only a three per cent for you.

Mrs Murphy: Yes, because, remember, two, plus two, plus two is actually 15 now, and this year it is 17, if you go back to the 2004 numbers, whereas the three is a one-off forever. A one-off forever is much easier than cumulative.

Hon KEN TRAVERS: But you have got the one from last year —

Mrs Murphy: Yes.

Hon KEN TRAVERS: — and have you not got another one for this year?

Mrs Murphy: Yes, another 17 million for this year. What we have said is if you take our two per cent that we are required to do for the ERA, that is part of the 17 million, because that sort of got lost in the system. So we are doing some of that anyway. The extra bit, we are looking at reformatting the way we manage our debt and some of our debt portfolios, so there are interest savings we are working toward. We do a fair bit of reimbursable work. That is one of the reasons it is always hard to assess our actual cost when you just look at the top-level numbers, because people take our total cost of operations and divide by the litres of water supplied, and that is actually not necessarily a valid cost. For example, we manage the water and waste water schemes on Christmas Island for the federal government. That is reimbursed by the federal government, and last year, or the last couple of years, there has been significant work and expense and capital being—a lot of stuff happening on Christmas Island that we have been doing, so that work has grown. So what we have put to government is that to look at the operating line alone is somewhat short-sighted, because if we are doing more work for someone else—for the private sector or for the federal government—that has a reasonable rate of return, we would be better to spend more on operating and do more work and make a profit on it. So we have undertaken that we will supply that 17 million, but it will not be all from reducing operating; it may be from increased profit due to doing extra work; it may be from changing the way we manage our debt portfolio to reduce interest; and there are a few other extra revenue lines.

Hon KEN TRAVERS: I want some personal tips here. How do you change your debt portfolio to reduce your—is that in changing your risk and —

Mrs Murphy: No.

Mr Giorgi: We have our debt portfolio through the Western Australian Treasury Corporation, and it is structured so that it is currently 70 per cent long term and 30 per cent short term. By changing the mix of the portfolio based on the interest rate, you are actually getting a cheaper interest expense.

Hon KEN TRAVERS: That does have a risk, though. So, have you moved more into short term rather than long term, or more into long term than short term? Which way have you moved it?

Mr Giorgi: We are moving currently more into short term, but that process has stopped because of the way that the interest rates are at the moment. We have been doing quite a lot of work with Western Australian Treasury Corporation to actually optimise our debt portfolio to align it with the pricing through the economic regulator. So, based on the outcomes of that extensive review that was over an 18-month period, we are repositioning our total debt portfolio, which will take some time to actually change the total mix to get to the right proportions that have been proposed in conjunction with Western Australian Treasury Corporation.

Hon KEN TRAVERS: As I would see it, one of the issues there is obviously that you are changing to some degree your risk. We are at probably what could arguably be seen as historically low

interest rates, so, yes, bringing all of your debt into short term means you get it at a cheaper rate, but then there is the risk that you do not have a locked-in long-term debt.

Mr Moore: No, we always have a combination.

Hon KEN TRAVERS: So I would imagine that that would need to be some fairly sophisticated risk modelling that is going on to underpin that.

Mrs Murphy: Yes.

Mr Giorgi: Yes, there has been a lot of modelling that has been undertaken to manage that.

Hon KEN TRAVERS: That we are not just deferring the cost to future generations rather than picking up our fair share in this generation.

Mrs Murphy: What we are trying to do is actively manage the thing instead of being a passive—just somebody else does it. Interestingly, we have actually —

Hon KEN TRAVERS: That is what Treasury Corp is supposed to be doing for the whole of government anyway, is it not?

Mrs Murphy: Yes, but we are a biggish single customer, so we have probably got more to win or lose by getting it right than some of the people using this.

Mr Moore: It is certainly not done on whims; it is done on very detailed modelling.

Mrs Murphy: And our board have been heavily involved. This is an area where I think a private sector board brings some real value, and Mike himself and his team have done some amazing work in this space.

Hon KEN TRAVERS: Do you do benchmarkings of other organisations —

Mrs Murphy: Yes.

Hon KEN TRAVERS: — both in Australia and internationally?

Mrs Murphy: Internationally is a bit—I mean, if you are comparing yourself with a Greek water utility, I would not get too excited.

Hon KEN TRAVERS: A which?

Hon ALISON XAMON: A Greek water utility.

The CHAIR: They have got lots of problems with water.

Hon KEN TRAVERS: Yes.

Mrs Murphy: And no money.

Hon PHILIP GARDINER: Just on the debt, is the debt all in Australian dollars or is there any foreign currency component?

Mr Giorgi: Australian dollars.

Mrs Murphy: It is all in Australian dollars.

Hon PHILIP GARDINER: So when you are reducing long-term debt with the lower interest rates, you have got to have an up-front cost of some kind that you have got to pay, I think. If you are going from a high rate, long-term debt —

Mrs Murphy: No, they just roll out.

Hon PHILIP GARDINER: So you are not swapping out; you are just rolling out as it goes.

Mr Giorgi: We are not swapping out. As we are rolling over our existing debt or as it is maturing—we have short-term debt and long-term debt, so the short-term debt is rolling over on a monthly basis—we are repositioning the portfolio at that point.

Hon PHILIP GARDINER: So now you are in the game of—the long-term rate is going to rise again, and some time between now and probably a couple of years you are going to have to decide —

Hon KEN TRAVERS: I have not actually looked at that specific issue. I assume that is all listed in your annual report, though, the debt profile of how much you—I cannot remember the break-up, but it is normally less than three months, and then —

Mrs Murphy: No, it is not because —

Mr Giorgi: Most of all our debt is shown as long-term debt, because we do not repay any debt; we are continually rolling over or borrowing new funds, so effectively it is all classified as long-term debt in our balance sheet.

Hon KEN TRAVERS: So it does not actually list how you have borrowed it; it is just listed as long-term debt. Are we able to get a bit of a breakdown of the different profiles you have applied in terms of where you were and what you were doing and what you intend to do with the profiles? I am not asking for a sophisticated document—just a general —

Mrs Murphy: All the documents on this topic are an enormously sophisticated.

Hon KEN TRAVERS: They are very sophisticated; I can imagine.

Mrs Murphy: Can we take that on notice —

The CHAIR: You can take that on notice.

Mrs Murphy: — because I am not sure if Treasury Corp allow—how much we are allowed to share. I do not actually know where the confidentiality or where the lines are for that. I am sorry; it is not really my area.

Mr Moore: Because we borrow through Treasury Corp, it is a sort of owner's borrowing rather than a bank arrangement.

The CHAIR: Let us give that supplementary information a number, and you can let us know how much is available.

[Supplementary Information No C4.]

Hon KEN TRAVERS: Are we able to get—I will take it on notice—the actual efficiency dividend, the 20.8, broken up into how exactly it was achieved—into what categories?

Mrs Murphy: Yes. We can give you the broad headings and where it came from. It is a report that we did at year end for the Treasurer, so we can certainly give you a copy of that.

Hon KEN TRAVERS: Sorry; I realise the other question I wanted to do, just in this area, Chair, was on page 45, I think it is.

The CHAIR: Sorry, member. I need to give a number to that last question on notice.

[Supplementary Information No C5.]

Hon KEN TRAVERS: The debt to equity ratio is what I am looking for. Your target was 40.6 per cent and you actually achieved 49.8 per cent. There is clearly an increase in your debt to equity ratio. One, how was your target established; and, two, what is the reason for you not meeting your target?

Mr Giorgi: The target was set —

Mrs Murphy: Too early.

Mr Giorgi: — when the SCI was actually sent through to the minister. Subsequent to that we had the upgrade to the desalination plant that was approved, and we got approval for additional funding, which was borrowings effectively, so that is why that is actually shown as an increase.

Hon KEN TRAVERS: But that is almost more a case of what your target is going to be —

Mr Giorgi: It is.

Hon KEN TRAVERS: — rather than: is there are a scientific figure that you work out—for an organisation of your structure and size, a realistic debt to equity ratio would be 40 per cent? In fact, I remember it was not that long ago that I think the Water Corporation held no borrowings —

Mrs Murphy: Correct.

Hon KEN TRAVERS: — and there was then a debate about what was the appropriate level of borrowings in terms of intergenerational equity. Have we done that work as to what is the reasonable debt to equity ratio in terms of us not transferring costs to future generations and accepting our own costs in this generation?

Mrs Murphy: The ERA, in their recent pricing review and their earlier pricing reviews, treat us as if we were a nominal privately owned water utility, and they assume a 60 per cent debt to equity ratio for this nominal, fictitious water utility that is what our pricing is allegedly based on.

Hon KEN TRAVERS: And then they give you an average weighted cost of capital!

Mrs Murphy: Anyway, there is a review underway, there is a draft report out, and I cannot comment on any of that.

Hon KEN TRAVERS: That was going to be my next question.

Hon PHILIP GARDINER: You were going well for a while!

Mrs Murphy: No, I have nothing that I can say about it. But the 60–40 debt to equity has been common all the way through in the ERA, and it is very common—it is the same break-up that is used by most economic regulators of water-type utilities and water businesses around the world. So that 60–40 seems to be about the nominal level. In simple terms, if you take the state growing at two and half per cent per annum, if you take our asset base and multiply that through, our current asset base—not the written-down value but the replacement value—is about \$29 billion. If the state is growing at two and a half per cent, two and a half of \$29 billion is \$725 million, so you would think you should be spending about that every year to keep supplying, in very rough terms. The depreciation in our accounts is \$348 million. If you add \$725 million and \$348 million, you get roughly \$1 billion—\$1.073 billion. So, in very simple terms, to keep up with growth and keep our assets where they should be, we should be spending around \$1 billion a year in capital. So we have mapped that out of what that does to our debt to equity going forward, and it does max out at around 56, 57 per cent, and then it starts to stabilise. The reason it has gone up so fast is that if you look at our book value of our assets, we have built \$1 billion worth of assets a year for the last few years, which means that we have sort of doubled the size of our asset base very quickly with a lot of add-in debt. So it does plateau out as you keep spending.

[4.45 pm]

Hon KEN TRAVERS: The other source of that \$1 billion would be retained earnings?

Mrs Murphy: We pay 85 per cent dividend, plus tax equivalent, so our retained earnings are seven per cent of our profit.

Hon KEN TRAVERS: What does that work out in —

Mrs Murphy: Not much. It depends on what our price is.

Mr Moore: \$600 million.

Mrs Murphy: This year.

Hon KEN TRAVERS: Virtually your whole expansion is debt funded.

Mrs Murphy: When the Water Corporation was created—it was before my time—when we were corporatised, I understand there was a lot of discussion about where the debt should lie and we were created with no debt, with the conscious plan that debt would grow in the corporation and we would basically self-fund our own capital through debt to approach a debt to equity more along the lines the ERA had suggested was appropriate. Does our board spend a lot of time worrying and do we spend a lot of time worrying about the increase of our debt? The answer is: absolutely, because there is a real fear that it is not sustainable. But it is not sustainable compared to a zero base; it does plateau out, so it is sustainable. Of course it depends on what your price structure is and what the WACC is, and there are a whole lot of other things in there.

Hon KEN TRAVERS: If you are losing 85 per cent, even if you increase your price structure that is a greater return to the government. Unless you then get an equity injection from your owners, I am not sure how that goes. If you are retaining only seven per cent, it is not really —

Mr Moore: It depends how you set the pricing structure up that goes with that. The model that has been historically in place matches all that out, because it was based around us providing an 85 per cent dividend. You will note that successive governments have focussed on the dividend from utilities. Most of them have now been pushed up to closer to 85 per cent. Western Power was down a bit. Now it has been pushed up higher, which has really affected the government saying to utilities, “You’re the revenue earning agencies; you take more debt.”

Hon PHILIP GARDINER: That is ridiculous.

Mrs Murphy: At the end of the day, where government holds its debt is its call, not the Water Corp’s call. We are kind of a wholly-owned subsidiary, if you like. As a wholly-owned subsidiary the debt can be in different places.

Hon KEN TRAVERS: The end result of that, of course, is that the consumer of your product has to pay higher fees to cover all those costs.

Mrs Murphy: Which is not inappropriate.

Mr Moore: At the end of the day it is the same consumer that pays any other taxes. It is the same as WA. The government of the day can make the choice, as Hon Phil Gardiner said, to put the debt where it chooses. It has chosen in our case that we hold quite a bit of debt.

Hon PHILIP GARDINER: It does have to be paid back.

Mrs Murphy: Yes.

Mr Moore: Somewhere along the line you would hope so.

Hon KEN TRAVERS: That is the issue. You say you are not borrowing. You said earlier you are not repaying your debt, so it is all considered long term,

Mrs Murphy: But, technically, we are repaying a bit and borrowing more. We are borrowing more than we are repaying.

Hon KEN TRAVERS: I guess that is the issue. Over the long period, if you are constantly growing your assets, that makes sense. But I guess the question is: are still, over the life of an asset, repaying the debt on each individual asset or are we ending up with assets at the end of their life, that have a debt attached to them with no value left in the asset. I assume you break it down into—there would be some aggregation—but big assets like your dams or whatever.

Mrs Murphy: We break it down into a lot.

Hon KEN TRAVERS: Fairly small? Are we covering the cost of each asset and paying that debt?

Mrs Murphy: Yes, and that is where the depreciation comes in. Remember, that depreciation is, of course, money that is paying down your debt. That is really where it is. Our depreciation schedules are asset by asset.

Mr Giorgi: By asset class. That is right. Within each asset class we componentise components of the particular assets. Over the page it shows ranges for the asset lives, and it can be quite a wide range.

Hon KEN TRAVERS: I think the dams used to be 100.

Mrs Murphy: The dams are 100; a pump might be five.

Mr Moore: Dams go from three years to 200. In three years some of the small components wear out of dams.

Hon KEN TRAVERS: Did you say page 55?

Mr Giorgi: Page 58.

Hon KEN TRAVERS: Yes. There are still sufficient amounts being put into depreciation. So, in effect, we are paying off the assets as they are depreciating?

Mrs Murphy: The problem is, we are growing and we have the climate issue. If the climate had not changed some years back or we were not seeing a drying climate, our capital spend would be significantly less. In simple terms, we have built 145 gigalitres of desal by the end of this financial year at a net cost of \$2 billion. That does not replace what we have lost from rain. We used to get 300-plus gigalitres out of rainfall for almost free, so we have spent \$2 billion to replace about half. We are getting 50 gigalitres now and we used to get 350 gigalitres.

Hon ALISON XAMON: The not-so-hidden cost of climate change.

Mrs Murphy: Yes; it is not very hidden.

Hon ALISON XAMON: No.

Mrs Murphy: It is an absolutely overt cost. In a steady state, it would be a very different set of financial numbers.

Mr Moore: A couple of billion you would not spend.

Mrs Murphy: When people ask: why are we paying more and we have not got better service? The answer is that we are paying more to try to get the same service.

The CHAIR: Which is actually the cost of climate change, is it not?

Mrs Murphy: It is.

Mr Moore: Without doubt.

Mrs Murphy: Growth is also difficult, because growth is not all in the right place—that is subjective. We have big growth in the Pilbara, say, where the capital cost is very great to supply water and it is not a place with cheap, abundant and easily accessible water. If we had a big mineral boom somewhere—I do not know where in Western Australia—Kununurra —

Mr Moore: I am not sure that there is any water in Kununurra.

The CHAIR: Do not suggest Margaret River.

Mrs Murphy: No; Margaret River does not necessary have a lot of water.

Hon KEN TRAVERS: Where will you get water in Kununurra; it is fully allocated?

Mrs Murphy: We have some allocation.

Mr Moore: Not much.

Mrs Murphy: No much, but there are problems. In the north of the state our capital is driven very much by growth and in the south of the state, it is driven very much by climate.

Hon KEN TRAVERS: You made a comment that you could not make comments on the draft report.

Mrs Murphy: It is a draft report for comment.

Hon KEN TRAVERS: You are still working through your —

Mrs Murphy: From our point of view, we go with the flow.

Hon KEN TRAVERS: Do as you are told sort of thing?

Mrs Murphy: If our price goes down, our dividend goes down. If our price goes up, our dividend goes up. Our job is to manage the business for our shareholder, our customers.

Mr Moore: It is ultimately a report for government to choose to do with as it wishes.

Mrs Murphy: To make a call.

The CHAIR: I am mindful that we are running a little over our scheduled finish time, but as we started a little late, I will allow us to go through till five o'clock.

Hon ALISON XAMON: I refer to “Aiming for greater dam inflows” on page 22 about the Wungong thinning trial, which states that during the first decade of the trial, which began in 2005, it is expected to produce an extra seven billion litres of water. How many billion litres of extra have already flowed into Wungong Dam since the trial began?

Mrs Murphy: It is very hard to answer that question because we have not had the rainfall that all the models were predicated upon. It took us two years working with all our stakeholders to agree on which areas to clear. The preliminary results were not particularly conclusive at the clearing level, so there has been a lot of discussion about higher clearing levels. At the moment the bulk of the work has been about replacing alien, I think they call it, vegetation, where areas that had previously been reforested with the wrong species —

Hon ALISON XAMON: They have been forested and they are so thick, they are useless.

Mrs Murphy: We have been working on those areas where there is not any debate about the level of thinning that is required. We have done some measurements, but it is pretty inconclusive, so with hand on heart, I would not be able to say whether any amount has been saved particularly until we get a reasonable rainfall year so that we can map it. We are comparing what we are getting now with a very different rainfall pattern than the preceding 10-year-ago catchment.

Hon ALISON XAMON: Is it fair enough to say that seven billion litres of water is not particularly realistic after 10 years? We have been talking at length here about how we have nothing but reduced rainfall to look forward to.

Mr Moore: It is reasonable to say seven billion, although the rainfall pattern we have had in the past three years is somewhat unrealistic, because we are finding groundwater levels in those catchments dropping very dramatically.

Mrs Murphy: This is not Gngangara-type groundwater.

Mr Moore: That is having a pretty significant impact on any run-off. I think it has been very difficult to measure.

Hon ALISON XAMON: Is there any suggestion the trial will be extended further?

Mr Moore: It is being debated at the moment to some degree in that the science is suggesting that we need to reduce the basal area by a further 50 per cent to get value. That is being considered as part of the current forest management plan review. It would be in selected areas and people are reasonably confident from a scientific point of view that that is satisfactory but it has not been agreed to yet?

Mrs Murphy: We will be reviewing the whole program at the end of this financial year.

Hon ALISON XAMON: By the end of June 2013?

Mrs Murphy: I think there is a review due around that point. I think it starts then to work out how long we continue and whether we continue. There are a number of other players involved with this; it is not just the Water Corporation.

Hon ALISON XAMON: Yes, I am aware of that. You are anticipating that over the next year or so you will undertake the review.

Mr Moore: The review —absolutely.

Hon ALISON XAMON: And the further logging? I understand. I have, myself, seen the trees you are referring and they were poorly planted. My understanding is that it was an Alcoa reforestation, which was —

Mrs Murphy: Yes. We will continue that area until we finish those areas that were reforested. I think that we come to the end of that area soon. The rest of the catchment is the bit we are talking about, whether we continue or whether we stop at the end of that.

Hon ALISON XAMON: That area is certainly more controversial.

Mrs Murphy: Yes. Alcoa reforested and other areas—we will do that bit anyway. The other area is more controversial and we need to be really convinced that there is a benefit.

Hon ALISON XAMON: I suppose it is hard to see what the purpose of the thinning trial would be at this point on considering that it looks like —

Mrs Murphy: It does not rain.

Hon ALISON XAMON: Yes, it does not rain, and the early modelling was so out of whack.

Mr Moore: That is fair comment. That is one of the things we are looking at.

The CHAIR: You mentioned that the groundwater levels dropped in the hills. Can you give us a quantum on what that drop is? I have heard it is up to six metres in some places.

Mr Moore: I cannot give it off the top of my head, no.

The CHAIR: Can you take that on notice?

Mrs Murphy: You will have to ask the Department of Water. It is not really our business.

The CHAIR: Fair enough.

Mrs Murphy: A study has been done by CSIRO on that. It is not that we are extracting any water, the ground levels there are purely climate. CSIRO has done some work in that space.

Mr Moore: The groundwater reductions impact on the initial run-off, which has always been an issue for us.

The CHAIR: It is obviously deeply related to what run-off you get; it has basically been sucked down to —

Mr Moore: You mentioned earlier the depth of trees in the forests. A lot of that is in relation to the groundwater levels dropping and the moisture not being there.

The CHAIR: To go to a different part, can I talk about the state wastewater treatment in Denmark. Is that your area?

Mrs Murphy: Yes.

Mr Moore: Yes.

The CHAIR: Are you aware of the concerns about the water quality in the Wilson Inlet?

Mr Moore: Yes.

The CHAIR: What, if any, are the plans to upgrade or alter—obviously not the treated water in Wilson Inlet—or have a different treatment process? I gather there are some discussions with the shire about that. Can you tell us where that is at?

Mr Moore: We are at tender at the moment to extend the treatment plant. Part of the DEC works approval for that is a requirement to come up with an environmental management plan for the effluent, going forward. We intend doing that over the next couple of years. The upgrade will improve the quality of the treatment slightly. You may well be aware that we have a slight disagreement in the science about what the impact from the treatment plant is compared to others in the Wilson Inlet area.

The CHAIR: Compared to other nutrient inputs?

[5.00 pm]

Mr Moore: Compared to other nutrient inputs and whether the actual input from the treatment plant is having much impact at all, but that is a source of debate that is ongoing. Nevertheless, we are looking at that and one of the requirements is at the existing infiltration gallery should not be used for flows in excess of what the plant agreed flows would be, which would be an average of 600—I have got the terminology wrong—whatever it is a day through the year rather than a maximum of.

Mrs Murphy: The treated waste water goes into like a pond, basically, and drains through and then the reeds and things in the pond are stripping the nutrients out. At the moment, because the plant is under stress with extra capacity at times, it is probably being exceeded. So, the concept is if you keep it to the level that it should be operated at, then the nutrient levels should be okay.

The CHAIR: I am aware that in Denmark you have high peak loads —

Mrs Murphy: It is a real problem, yes.

The CHAIR: — at Easter weekend and Christmas and those kinds of things. Would you not have a system where you could —

Mrs Murphy: Hold it sort of.

Mr Moore: Or use it elsewhere? That is what we are looking at.

The CHAIR: I know that there is a conversation about looking at irrigating inland—or secondary re-use actually it is.

Mr Moore: We are certainly looking at various options there, including the shire's favourite golf course option, but that would be all part of the environmental management plan that is being looked at for the future.

The CHAIR: But that assessment is at least two years off. That seems like a long time.

Mr Moore: It will be about two years to get the full assessment on what we would do in various locations. But we do not believe we will need to do anything after this plant upgrade until about 2018 to 2020, based on existing demand.

Mrs Murphy: So the plant upgrade removes more nutrients anyway, which buys us time, as the town grows, to come up with other solutions.

The CHAIR: Has there been a sort of cost-benefit between upgrading the plant to take more nutrients out as opposed to basically doing the bigger job of diverting?

Mrs Murphy: Yes.

Mr Moore: You still need the treatment capacity and that is what the upgrade is also to handle.

The CHAIR: So you would do that even if you were putting it on a tree farm?

Mr Moore: Yes, you would have to.

The CHAIR: You would have to do that upgrade even if you were pumping it into —

Mrs Murphy: Yes.

Mr Moore: Even if you were putting another treatment plant in, because right now we have not got the treatment capacity to handle the expansions for the town, so we need to do that anyway.

Mrs Murphy: So, there is a volume issue and a nutrient stripping issue and then a final effluent disposal issue, and they are all linked.

The CHAIR: In terms of using it to irrigate trees, for example, is that —

Mr Moore: That is one of the considerations, yes.

Mrs Murphy: We are looking at that. That is what we do in Albany, as I am sure you are aware.

The CHAIR: I know; after I suggested it, I have to say, a long time ago!

Mrs Murphy: The problem sometimes is that —

Mr Moore: I point out that Albany was a, I would say, particularly well-chosen site because I chose it! But it is actually a treatment process. The sort of profile there was really well picked in that it is very deep to groundwater, groundwater does not move through the area very well, the clays in the soil will hold the phosphorus for a very long time and then nitrogen is used by the trees pretty heavily. Most of the other tree farm sites we use are more in the way of growing trees and disposal of the water. I am not sure in the Denmark area we are going to find a treatment process that you can use in a tree farm site. We are certainly looking at tree farm irrigation as the disposal mechanism and the vegetation will take up quite a bit of the nutrient, yes.

Mrs Murphy: The trouble is you have got to have a site close by or the cost of pumping it and the energy in pumping it becomes counterproductive.

The CHAIR: Sure. I am going to give the last question to Hon Alison Xamon.

Hon ALISON XAMON: No, that is okay; I am conscious of time. To be honest, I have got lots of questions on notice that I am just going to —

The CHAIR: Hon Phil Gardiner.

Hon PHILIP GARDINER: In a related area, the biosolids area, on page whatever it was there, roughly what is the wet weight of biosolids that you would need to dispose of from your treatment plants in the metropolitan area?

Mrs Murphy: In total?

Hon PHILIP GARDINER: Total—just roughly.

Mr Moore: I have no idea.

Mrs Murphy: I should have researched biosolids just for you!

Hon PHILIP GARDINER: Thank you! I do not know whether I should ask my next question. Just so I do understand, where the biosolids are being disposed of now into agricultural areas, am I correct that it is all by pellets now—pelletised biosolids?

Mr Moore: None of it is.

Mrs Murphy: A bit.

Mr Moore: There is no pelletised plant.

Mrs Murphy: You are right, no, so it is all —

Mr Moore: From Subiaco there is a lime-amended sludge —

Mrs Murphy: BioClay, which is probably the one you think because that —

Mr Moore: No, not the BioClay. From Subiaco, it is a lime-amended sludge that is carted to the farms near Moora and that is applied on the ground and mixed into the soil by the farmers.

Hon PHILIP GARDINER: Under the original method that you had —

Mr Moore: Yes, spreading and then incorporation.

Hon PHILIP GARDINER: So it has got to be incorporated within so many hours or whatever it is —

Mr Moore: Yes, that is it.

Hon PHILIP GARDINER: And away from streams and all that kind of thing.

Mr Moore: And that is still predominantly the way most of it is being disposed of.

Hon PHILIP GARDINER: Okay, and is there a vision to try and see whether the pelletisation process can work; and, if it does, would it be economical?

Mr Moore: We have had a pelletisation process at Subiaco previously. It was not economical at the time. We continue to look at all options, to be honest. But that has not come to light as a considered option at the moment because the options that we are using—what we are looking at, and Sue was getting on to, was the lime-amended biosolids being mixed with a clay to become a soil ameliorant. We are looking at some work with that in the Ellen Brook catchment at the moment. That seems to be getting a fair bit of favour at the moment.

Mrs Murphy: It is very prospective because the lime that you use to kill the bacteria is a great adjunct in acid sulfate soils —

Hon PHILIP GARDINER: That is right, yes.

Mrs Murphy: The clay helps the sandy soils, and the trials are very, very —

Hon PHILIP GARDINER: Yes, it would have a lot of ancillary benefits if you can build it up that way as well.

Mrs Murphy: It is looking very prospective at the moment; we have got —

Hon PHILIP GARDINER: The only issue then is still the stable fly issue. Are you on top of that with this?

Mrs Murphy: There is no issue.

Mr Moore: For the lime-amended with the clay mix there is no issue of that.

Hon PHILIP GARDINER: There is no issue with that?

Mrs Murphy: Once the lime is in there, it kills the pathogens and there is nothing —

Mr Moore: No, there is still an issue, though, in the bulk dumps —

Mrs Murphy: Yes, with the bulk ones. No, I say the BioClay is fine, but with the big ones there is an issue.

The CHAIR: It is a good place to end, I think!

We will forward any additional questions that we have to you via the minister in writing in the next couple of days together with the transcript of your evidence, which includes questions taken on notice. Responses to these questions will be requested within 10 working days of receipt of the questions. Should you be unable to meet this due date, please advise the committee in writing as soon as possible before the due date with the advice to include specific reasons as to why the due date cannot be met if it cannot. Members, if you have got unasked questions, please provide them to the committee clerk at the close of the hearing. Finally, on behalf of the committee, thank you very much for a very enjoyable session.

Hearing concluded at 5.06 pm
