

CORRECTED VERSION

ENVIRONMENT AND NATURAL RESOURCES COMMITTEE

Inquiry into Melbourne's future water supply

Melbourne — 8 September 2008

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Mr P. Harris, secretary, and

Mr D. Downie, general manager, Office of Water, Department of Sustainability and Environment.

The CHAIR — I declare open this hearing of the Environment and Natural Resources Committee's inquiry into Melbourne's water supply. In doing so I welcome everyone and ask you to turn off your mobile phones if you can — they interfere with the Hansard recording. I welcome our first witnesses to the first public hearing of this inquiry. I welcome Peter Harris, the Secretary of the Department of Sustainability and Environment, and David Downie, the general manager of the Office of Water at the department. I remind you that all evidence taken at the hearing is protected by parliamentary privilege under the Constitution Act 1975 and is further subject to the provisions of the Parliamentary Committees Act 2003. Any comments you make outside the hearing may not be afforded such privilege.

All evidence given today is being recorded, as you are aware. You will be provided with a proof version of the transcript with instructions on it. I thank you very much for joining us. We look forward to conducting this inquiry and having a look at where we are going as a state and the opportunities for the future. We welcome you to the hearing and ask you, Mr Harris, to present on behalf of DSE.

Mr HARRIS — Thanks, Chair; thanks to committee members. I am Peter Harris, secretary of DSE; with me is David Downie. I will just run through the brief presentation I have got here. I think the committee has had the benefit of seeing quite a few of these slides and backgrounders before in informal briefings, but we will just run through this quickly and perhaps that will set you up for subsequent questioning.

Overheads shown.

Mr HARRIS — People are broadly familiar with the nature of the industry structure. There are three licensees in Melbourne, and Melbourne Water is the bulk supply water corporation. In regional Victoria there is a bit of a different situation, but you are focusing today on Melbourne. Water use in Melbourne is 30 per cent non-residential, 60 per cent residential, and water that is lost in terms of system operation, meter inaccuracies, theft and fire services makes up the other 10 per cent.

We are all quite familiar, I think, with the fact that over the last 30 years or so there has been a clear shift in rainfall patterns; that map there exemplifies it quite well over the period 1970 to 2007. As you can see, Victoria is a very dark chunk of brown at the bottom there. This is the more recent rainfall map from the Bureau of Meteorology showing the current wet season — 1 April through to 17 August. As you can see from the brown colourations, those numbers on the side of the slide are 20 per cent to 40 per cent of the average in terms of rainfall in those darker brown–orange colours there. Things continue to be quite bad.

In terms of drought and climate change for Melbourne, this shows you the annual inflow to Melbourne's main harvesting reservoirs. The important thing is not so much the 100 years shown in the vertical lines but the averages across the top. The average of the last 100-odd years is a figure there of 590 gigalitres of inflow a year. The average of the last 10 years, across on the right-hand side, is 387 gigalitres a year over the last 10 years. The two vertical coloured bars furthestmost to the right show the 2006 extreme year with 163 gigalitres inflow versus, as I said, the 100-year average of 590. It then shows you the 2007 inflow, which at 374 gigalitres was slightly less than the last 10 years.

The most important point about that is whilst it was a significant recovery from the 2006 most extreme year this next slide shows you in terms of lines where that got up to. If again you go further to the right you see the two intersecting lines at the lowest level and furthestmost to the right that is effectively where we ended up the year. That second-bottom beige–brown line that is intersecting with the black line shows you how we recovered with that 374 gigalitres in 2007. The bottom line is we did not recover at all in Melbourne. We coped through the year last year with roughly the last 10 years inflows, but we did not recover at all. As you can see, the progress through 2008 is shown in that red line which is deviating from where we were this time last year.

This graph is quite important. It is probably the most significant of the graphs that we are producing in support of the desalination plant and will be considered further, I think, in the panel hearing on the desalination EES. This graph basically shows you the forecast for long-term storage recovery if we use different sizes of desalination plant. Starting from the left and moving across to the right, we start at 2008 and move out to 2050 odd, but the important thing for the next five to seven years is the shape of the graphical representations as they intersect. The wavy dotted lines are the levels of water restriction in Melbourne and the dotted line at the bottom — the bottommost line — is the stage 4 water restrictions. The representation in this graph is comparing the green line, which is without anything — no supply from a desalination plant — with the blue line, which is when we tested a 100-gigalitre

plant, versus the red line, which is a 150-gigalitre plant. You will see that testing recovery shows that without anything at all the green line continues to trend down in a very unfortunate way.

The blue line, with 100 gigalitres of desalination water added in, shows us recovering slowly but not sufficiently to avoid going into stage 4 restrictions and some quite serious potential impacts. Remember, this is forecast on a particular scenario — you can put different scenarios against this. Against the forecast we have chosen to use for planning for long-term security, which is the last three years — 2004, 2005 and 2006 — repeated, that shows us that 100 gigalitres just simply does not recover and we move back into a situation where quite soon we will need to provide supplementation. This is the rationalisation for why a 150-gigalitre plant will at least give us a recovery out to about 2030 odd. That is the red line. We can bring this back up later on if you want to ask further questions about it.

In terms of policy structure and planning, there have been a lot of planning documents in the last few years, some more successful than others, but the long term is we are now running with a very large-scale augmentation program as a result of needing to provide very significant levels of additional water resource to Melbourne to secure our long-term future. I note at the bottom there we have done some assessment of other alternatives in the course of developing that plan. We are certainly not ruling out the sorts of measures that are listed in your terms of reference here today. All those measures are still available and are supported, but in terms of a quantum augmentation of what we need to manage Melbourne's water future, the desalination plant and the augmentation from the north and the potential use of major recycling water resources in the long haul — those three central elements of the Victorian water plan announced last year — are what we are primarily relying on.

It is probably important to remember the commonwealth involvement in the national water initiative. The commonwealth is very strongly interested in urban water supply. The commonwealth's involvement to date has not been significant in terms of large levels of funding, although it has offers on the table to support desalination plants and the like. Its primary focus, I think, is that price in the market be utilised more effectively long term to provide signals to ensure that supplementation occurs at an appropriate point. We continue in discussion with the commonwealth on urban water reforms — COAG has a process which is picking some of that up at the moment — but under the national water initiative all governments in Australia are signed up to an arrangement which encourages increasing use of water markets, best practice water pricing, integrated use of environmental water, proper accounting, and support for the Living Murray.

This is the quantum of addition in *Our Water Our Future*, the next stage of the government's water plan from June last year. The 387 gigalitres is shown there in terms of the last 10 years average of inflows and then supplementation is the blue blocks: Tarago, which is due on line next year, with 15 gigalitres; the pipe from the north, 75 gigalitres through the Sugarloaf interconnector in 2010; and the desalination plant after 2011. It provides a net increase there of 240 gigalitres of water.

The grid is my favourite element of the water plan by a long chalk, because in terms of long-term planning the purpose behind the grid is to enable us to move water from where we have it to where we need it at any point in the long term. The value of those red lines there is they are effectively interconnectors between different storage capabilities and the communities that might depend on that water in the future. Obviously where the red lines do not intersect with each other they are connected either by channel systems, which are already in place, or river systems.

You can see from the bottom of the map up that the desalination plant down at Wonthaggi will enable support from the Melbourne water district to not just cover the western Gippsland areas through which the desalination plant pipeline will run but also enable, through interconnection with Geelong, support from the desalination plant via Melbourne's other water sources around and onto the Great Ocean Road growth corridor for the long-term future of this area. I like to use the example, although it is not fundamentally absolutely precise, that we can pick up about 80 per cent of the population and about 80 per cent of the employment in Victoria under that one set of scenarios and interconnected pipes. Thus the grid becomes particularly important in the underwriting, if you like, of future development. That is just another iteration I guess of what I have just been talking about with potential supply options down there in western Gippsland to both Western Port and South Gippsland Water.

The northern Victoria irrigation renewal project is important in this context because it is providing the 75 gigalitres of water we will be using the north-south pipe for to bring into Melbourne. That project is going ahead, with quite

a lot of good support now from the commonwealth government as well as the successful implementation of early works in this current non-operating period for the irrigation system.

The eastern treatment plant upgrade is also relevant because once the upgrade is completed in 2012 we will have the option of utilising up to 100 gegalitres of class A recycled water annually from this plant. There is a business case under examination and due for completion by the end of this year to potentially look at supplying that water either to the Latrobe Valley to underwrite future energy use or to what is known as the Yarra River option, which will enable us to supply water into the upper reaches of the Yarra River and potentially increase the reservation of water either in the Thomson system or in some of the other storages. This business case, as I said, is expected to be completed in November 2008.

That is the Latrobe option. There are complex variants on the Latrobe option which have been suggested by different parties. The purpose behind the business case will be to strip this down to its bare essentials and see how well it stacks up in terms of the utilisation of that water. There are other options obviously for supplying the Latrobe Valley generators, and they are having direct input into this study. The alternative is substituting that recycled water for flows in the Yarra River.

Conservation and efficiency is important. Our medium-term objectives have in practice already been met. We set the requirement to reduce per capita water consumption by 30 per cent by 2015, and that target has been exceeded already with a reduction of 34 per cent on the 1990s average per capita water consumption — that is the brown bar there, with the objective for 2020 below it. We moved that up in the central region SWS statement — the Central Region Sustainable Water Strategy statement; I have got to stop using the acronyms — to 2015, but it has already been achieved. That is a substantial amount of credit to both industry and householders in Victoria.

This is the state of the storages potentially without the water conservation measures introduced with permanent water savings in 2002 and subsequently supplemented by later policy activity. The most important element in that is we would be 250 gegalitres worse off — that area between the light blue and the dark blue curves is worth 250 gegalitres to the storages over that period 2002 to 2007. Those measures have been particularly successful. As you can see on the right-hand side charting of this, that is our storages at 30 per cent or just about 30 per cent, and that is our storages down at around that 15 per cent level if those measures had not been undertaken.

These are the sorts of measures involved in conservation and efficiency. I am particularly keen on WaterSmart, which is an idea adapted from a number of other areas, particularly from when I was in public transport. TravelSmart is a direct marketing to households of options that were available to them that they either might not be aware of or may not be aware of support programs behind this. As a tool for behavioural change it has proved particularly effective in other areas, and we are now trying to roll it out in water. It enables people, for example, to understand what they can do inside houses rather than outside houses where our household restrictions primarily apply. On top of that, we have free shower head exchanges — you will be very familiar with these — rebates for water-saving products, changes to pricing structures, the 3a water restrictions which have been successful to date, 5-star rating for new dwellings, and water efficiency labelling.

Industry has also contributed. This is sort of sight unseen, but industry is quite a strong contributor here, with 9 gegalitres saved in 2006–07. Water management plans have been provided by all industries; there is 100 per cent compliance. SmartMeters have been provided to the top 200 water users so they can track their water use, and it can enable us in particular to spot where leaks are occurring and have annual reporting of water use. We have public scrutiny and therefore the utilisation of moral suasion, if you like, to manage water, plus targeted programs, particularly for cooling towers and recycling.

I will probably go over the top of that except for the last element of the slide. Improved responsiveness is quite important in repairing water main bursts, and Melbourne's water businesses are among the best in the world.

We are quite supportive of integrated urban water management, and programs exist to do that. I will exemplify the Smart Water Fund which has been in place for a significant amount of time now and provides support for projects like the sewer mining demonstration treatment plant at Flemington racecourse. The Stormwater and Urban Water Conservation Fund has been updated, if you like, with the Stormwater and Urban Water Recycling Fund, so one fund succeeds the other. They continue with rounds of funding being considered right now under the most recent program.

Groundwater gets quite a bit of attention. It is relevant to Melbourne only in a sense of the fact that there are aquifers, but they are primarily limited in their utilisation around Melbourne, both because of salinity impacts and because of relatively low yield. I think current utilisation for bore extraction licences around Melbourne is a total volume of 17 000 megalitres — 17 ggalitres — but only three and a half of that is actually being used because of low yields. The aquifers, as I said, already have a problem with low yield and a ban on extraction where you get heavy salinity level impacts.

We could also use aquifers as potential storage around Melbourne in some places, and that would be potentially storage of stormwater, but they have the same limitations I have just mentioned. Low yield means relatively low capability of storage but also means salinity impacts, so if you have a saline aquifer, putting recycled water in there is not necessarily going to help you take that water back out in the future.

As to recycling, we aim to have 20 per cent of recycling of wastewater by 2010. That shows you the growth rate in recycling, and I have some subsequent data which you can use on recycling in terms of how we break up that 20 per cent — or that 22.5 per cent — which shows a quite creditable performance there.

Possibly the final slide which you might be interested in is one done for the Prime Minister's department in 2006 as it developed the national water initiative. The comparators for effectively what the dollar per kilolitre cost of propositions — and this is genericised across Australia, you have to bear in mind, so that is why there are very large range numbers in there — show what the dollar per kilolitre cost of different initiatives was seen to be at that time. We do not think the relative data has shifted although individual quantum will shift from time to time depending on, for example, the buy rate, if you like, for larger technologies.

Catchment thinning is right down at the left-hand side as a potential contributor, and right up the far end of the scale is rainwater tanks, but you will see if you choose to look at the bottom numbers there, they are quite small costs per kilolitre, but if you look at the top, at the outlier, if you like, cost of potentially using some of these initiatives, some of them are very expensive.

Desal, which you are probably looking for — I do not have the right copy marked here. Which one is desal, David? In the middle, 350 at the top, 115, the one before basics. You can probably see basics there. That is the desal cost, the 2006 data, as I said, genericised across Australia for the national water initiative.

Finally, in terms of water for the environment, we have enhancement programs within the Melbourne catchment areas for improving environmental water flows. The difficulty we have is obviously being mugged by reality. We do not have a lot of water, so it is hard to do the enhancement at the moment. We have substantial monitoring programs in place to ensure that if we do have outbreaks of blue-green algae or other environmental issues that will affect the rivers in their current state, we can put reserve water into effect and address those environmental impacts, but to date things have been managed fairly well. I might stop there to give time for questions.

The CHAIR — Thank you very much. We look forward to asking some questions. I might go first. There is a bit of a view around that Melbourne Water customers have not been as efficient in conservation measures as they could be. Your submission states that there has been a 34 per cent reduction in water use per person in 2007 compared to the 1990s. I was just wondering whether you could provide us with two bits of information. One is what percentage of that is from the formal water restrictions that we have, the household water restrictions, as compared to other government programs around conservation measures, say, the rebate programs et cetera; and the second bit of that is: is there a view about what extra water efficiency measures households can take in Victoria and what volume that could achieve over a period of time?

Mr HARRIS — If I can just clarify that, you are asking how much formal water restrictions have contributed to — —

The CHAIR — To that 34 per cent reduction in households.

Mr HARRIS — I will try to exemplify at least a map that will tell us that. There is 2002 through to June 2007. The formal water restrictions came into place in June 2006, so you will see the incremental increase — a substantial incremental increase in the light blue area, which we will show you. We will get that measured for you. I do not have that as a number, but as you can see, it is quite substantial. It is pretty hard to tell from that, so I will have to get the data for you, but it is quite a significant contributor, without a doubt.

The CHAIR — If you can provide that, that will be good. And the second part of the question: is there a view about what extra efficiency measures or conservation measures can be taken by Melbourne households if we are on the same trajectory or if we go a bit tighter or more supportive programs — —

Mr HARRIS — As I mentioned, I am quite keen on the idea of the WaterSmart initiative because the greatest difficulty with households right now is we are doing a very large amount outside the house in terms of saving water and we are providing what I might call technological improvement-type solutions for inside the house, so that in terms of the promotion of water-efficient household products — shades being a very good example but also washing machines and the like — but changes in behaviour inside the household, I think, is probably the area where most could next be done.

This program to date has been relatively successful. We have had about a 50 per cent take-up rate of households when we have offered them the opportunity to participate in this program. Some people have said to me that 50 per cent does not sound terribly impressive by comparison with most other programs of this kind but when you ring up a household and, for a start, you irritate someone by ringing them up, and then you try and sell them on the idea that they should save some water, 50 per cent is a very good take-up rate, and a lot of active participation, and we will measure the impact of that and then potentially that program is quite capable of substantial expansion in the future should we need to take further measures in directly selling to households. As I said, I have personally seen this sort of concept of behavioural change work in public transport quite well, so I think we could probably apply it quite well in water as well.

There are probably other enhancements that are available in terms of improved technological solutions for households, and I think you find the water authorities have research programs working along those lines. I am not as familiar in detail with them, but when you discuss those with the retailers, I am sure they will be able to give you some background on that.

Mr WALSH — Thanks for your presentation, Peter. In your presentation you focused on the fact that modelling of Melbourne's water needs in the future is based on the last three years as being the average going forward. Why is it that we are doing all the modelling for northern Victoria based on 100 years of history rather than the last three years, which, if you did that, would substantially change the creature in the north as far as the potential savings go?

Mr HARRIS — I can give you a very practical answer to that. If we take the last 10 years and we did sensitivity testing, we are fine. We actually do not need to do anything, if you take the last 10 years. It is actually shown in the graph that was published with the water plan last year. By 'fine' I mean we will cope. We are not going to be in a great state, but we will cope. Relying on the averages even of the last 10 years seems to be a reasonably unrealistic thing to do, but you have to choose a new benchmark if you are not going to rely on the averages of the last 10 years. Choosing a new benchmark is quite tricky, and so the new benchmark, the three years, that is used here was put together by saying, 'Well, what are the set of circumstances where we would actually have to start to do something to go into changing our current policy?'. Remember we were developing this in a set of circumstances where everybody was of the view policy needed a change collectively. Experts can argue about what measures you actually use, but something had to be done, some substantial change had to occur. And that is why the three-year scenario is in place, because that is the best exemplar of something you could use as a benchmark. If you used a five or a seven-year scenario, you were still in a position of just coping; in other words, you plug Tarago back in and you continue some more measures and you hope it is all right. That is the rationale.

Mr WALSH — That was not the question. You have done that, and I accept that you have done that, but in the food bowl project to the north where you are going to get the savings for the north-south pipeline you are basing all that modelling on 100 years of history. If you actually put the three-year scenario on the irrigation area of northern Victoria, you would have a vastly different creature than you are modelling as far as the potential savings, given that the government has promised nearly 520 000 megalitres of savings and in the last couple of years we have not had losses to that amount. If you are modelling it on three years of Melbourne, why do you not do the same in the north, or are we going to get more rain in the north?

Mr HARRIS — The chairman would obviously want to call me to order if I strayed outside the terms of reference, but because the NVIRP (northern Victorian irrigation renewal project) is a source of 75 gegalitres, the rationale is still fairly straightforward from our perspective. The source of the 75 gegalitres is from the 225 gegalitres that the government estimates will be saved by the initial \$1 billion that the Victorian government

committed. That 225 gigalitres will be delivered in any circumstances in practical effect when the system actually runs, so even in the last three years when the system runs those savings will be found, and the system has run in the last three years.

I think the only area where there is a question about would the savings be actually made is if the system does not operate. In future scenarios, potentially under climate change, there may well be a year in which the system does not run, but we did not have that in the last three years so I do not think it will make a great deal of difference to the objective of achieving 225 gigalitres of savings and thus the 75 gigalitres.

The reliability factor, though, which is what we will have to use after 2010 to estimate when we will be able to use that 75 gigalitres and how much of that 75 gigalitres will be used, will be affected by those scenarios, as you know, and we have actually published, I am sure, information to that effect. I think the certainty, if you like, that has been attributed to that 75 gigalitres is a certainty that in 2010 we will provide 75 gigalitres via savings we have made from the irrigation renewal project, by saving some water even from other related projects and by other sources. But post-2010, we will be providing 75 gigalitres based on a reliability factor which is actually reflective of the operation of that system as we are now expecting it to operate under climate change.

Mr WALSH — Will that reliability factor have the same value as agricultural water or will Melbourne get a higher reliability?

Mr HARRIS — No, I think we have been clear. Mr Downie confirms I am right. Thank God for that. We are planning that post-2010 — I keep emphasising that — the 75 gigalitres will effectively have the reliability that the water created under that savings strategy has, so inherently the other recipients of that water will get the same reliability factor. It will be very high reliability water because it is the water that substantially is going to be coming from water you use to start the system up and operating, therefore in every year it operates that water will be saved, as it were, so it will be very reliable, but to the extent that under climate change the seasons are shortened as, for example, has been pointed out, in those circumstances the reliability factors are less and the water saved will be subject to that reliability factor in Melbourne as it is in other parts of regional Victoria.

Mr WALSH — So there will be higher reliability water for farmers as well out of those savings?

Mr HARRIS — Yes, they will get the same reliability factor. The committee, you might have noticed — I think everybody did who was working on it at the time — that was put together to assess this project and was drawn from irrigators and environmental representatives and community representatives from that region in Victoria, actually said, ‘And if you get more savings, we want more of them’, and of I think the 50-odd recommendations put forward by that committee that was only one of two that the government did not accept because there seemed to be a view at the time that we wanted to actually do better than the 225 gigalitres with our \$1 billion. I notice since then all the argument has gone the other way and the suggestion is we will not, but I think there is quite a lot of expertise amongst the people who were representatives on that committee, and the view is we might actually do better.

Mr WALSH — For the component of savings that is allocated to agriculture, that will have a higher reliability than normal high security water in the future, will it?

Mr HARRIS — That is what I am advised by experts. I am just going to ask David to comment on that.

Mr DOWNIE — The savings will be shared one-third, one-third, one-third equally between the environment, irrigators and the urban sector. The government has made that clear. The reliability of that will be the same also for each of the three participants, and on the basis of the modelling because savings are coming from savings, they will have a higher reliability than normal high security water that is allocated now. Irrigators have indicated at this stage that they wanted that water to be allocated as high security water rather than as the share for savings as it comes out, so there will need to be a conversion of that, but it will have higher reliability than existing high reliability water.

Mr WALSH — So it will be a separate product?

Mr DOWNIE — The irrigators have indicated that they want it in the form of the existing high reliability product, though. They have not asked for a separate product. They have asked for it to be converted.

Ms DUNCAN — Thanks for that presentation. I just wanted to follow up on the argument that we hear constantly in the media about we could just build a new dam, and again and again what is raised is that the Mitchell River would be an appropriate location for a dam, contrary to the abhorrence from the local member. Can you just go through — and I know you have in your submission — and outline in a bit more detail what your summary of a dam on the Mitchell River was and why in your view it is not a viable option?

Mr HARRIS — We did look at dams. Prior to my coming into the department there had been some work done and some of that work was updated and it was certainly considered last year amongst the concepts of what big augmentations were possible. I might say even beyond dams, we also looked at interconnections between river systems involving drilling 14-kilometre pipes through mountains and connecting river systems that way, so it was not as if augmentations of what you might call the historic engineering kind were not considered. But the amounts of water that were going to be made available from them and the potential costs involved in those projects and the length of time that it would probably take to provide them made particularly desalination look tremendously attractive and we announced we would have a desal project in June last year, and we will have it at the end of 2011, and to date the environmental assessments have come back and shown that there will be quite minor environmental impacts and quite manageable.

By comparison with the Mitchell River, a significant heritage river, we will have environmental impacts and therefore we will have significant mitigators required to meet those environmental impacts, plus the amount of water that is available. In the end, desalination by comparison with a river-based solution, the river-based solution relies upon it raining and raining reliably, and our problem is we are here now because it has not been raining reliably; therefore a dam is inherently a more risky solution. As I said, it has more environmental impacts by comparison with a desalination plant in terms of the local environment and the pipeline effect from the Mitchell River. The pipeline would have had to have been longer. I think pumping costs, well, they did not show pumping costs, so I think you could probably say it is much of a muchness. I am not sure. I am sure there will be data available if we need to find out the pumping costs, but it is certainly a longer pumping journey from the Mitchell River site to that connecting with Melbourne storages.

Finally, even under a 10-year scenario, so not now the three-year scenario that we are using for Melbourne, but even on a 10-year scenario, the quantum of water available from that dam was about half the water that you would get from a desal plant of the 150-gigalitre kind that we went for, so our estimation is that the dam option was unlikely to stack up in the same way. I have left this up there so there is a 100-gigalitre plant, so if under the last 10 years a dam on the Mitchell River was only going to give us 70-odd gigalitres of water, 70-odd gigalitres of water does not get you the kind of response we have got there, plus it does not get you it in a reliable fashion, meaning that sea water is always there and as long as we are prepared to invest in the desal plant and keep it operating we can take 150 gigalitres from it once we have got it. It is that thoroughness, that certainty and reliability that is particularly important for water as a product, and that was quite influential in our consideration in the lead-up to the Victorian water plan last year.

Mr INGRAM — Just comparing Melbourne to cities in the UK where there is a high investment historically in basically putting wastewater and sewerage water back through a recycling plant and back into the potable system, stormwater capture and second piping putting that water through separate recycling and treatment processes back into potable use, what investigation has been done on the cost of retrofitting a city like Melbourne, where you do not necessarily have that same infrastructure history, to utilise that water for potable re-use?

Mr HARRIS — Indirect potable re-use, as you know, is not part of government policy, so I put that on the record pretty clearly. Notwithstanding that, the recycling data we put up here is quite relevant. We have got 20 per cent of water currently being recycled and used effectively for purposes which otherwise have to be met by potable water under our current supply arrangements. In other words, if we want to keep watering those golf courses and supporting those irrigation districts rather than shut them down, which is another option, if we want to keep them going then we are using recycled water, and that is considered to be an effective recycle use, in my book anyway.

We have got quite a reasonable amount of recycling going on, but as I said after the eastern treatment plant comes on line with its class A recycled water production Melbourne will have available the potential utilisation of that, and these business cases we are talking about are not minor exercises; we are expending north of \$10 million on those two business cases. They will be an exceptionally thorough examination of the utilisation of potential class A recycled water.

The reason we are looking at them rather than at some of the more popular recycled water schemes, which we are also supporting particularly through the recycled grants program — and I think at the back of our submission there is a list of some of those; I am pretty sure that is on one of the pages — is because bulk supply, which is what you were talking about, of class A water utilised within a city's water system is the most efficient way to go if you are trying to replicate the distribution network across Melbourne with purple pipes, if you do not want to mix the water, if you know what I mean, in households. What goes to a household right now? You turn on the tap, you drink it and you flush the toilet with it. If you want to substitute the flushing of toilets across Melbourne with recycled water then you will have to have a separated supply.

Mr INGRAM — I was actually talking about the disposal of stormwater. It runs off the roofs and through the streets and disappears down the stormwater drain. In many other cities throughout Europe that water is actually captured and also sent to a treatment plant to use. Clearly historically that has not been captured in Melbourne. Have there been any investigations looking at that as an option and costing it?

Mr HARRIS — Yes, we do some of that in Melbourne now. I think there is a probable enhancement of that in new suburbs as they are developed because the infrastructure can be put in as they go. But what I was trying to get across was that retrofitting, if you like, the city's existing water distribution system in order to supply even cleaned up stormwater requires a separated system. The concept would have to be to put in purple pipes as they are called, for the recycled water. They would have to be re-laid across the entirety of Melbourne in order to do that unless you decided that it was okay for everybody to have the recycled water mixed in with the potable water in the system that gets you water when you turn on your tap, which I do not think is going to be acceptable.

Whatever it is that water has to be separated and remain separated, and so the distribution system that would be needed to utilise that in a mega way across Melbourne has to be different. What happens in the European cities that I think you are talking about is that effectively whether it is recycled water or stormwater or whatever else it is, after it is cleaned up it is put back into the water treatment system. It goes up at the head works end and then having been turned into potable water it is then sent back down through the distribution system across the city. That is what these two projects are looking at: ways in which very large amounts of recycled water, regardless of the source of that recycled water, can be put back into storage systems, be treated and then put back into the existing distribution system, because that is where big capital costs will come from. If the idea is that you want to get into the mega enhancements of recycled water, regardless of the source, you have to have a way to keep down the capital costs, and the right way to keep down the capital costs is to clean it up and distribute it in a way that takes it back into the treatment system and then back into the standard water pipes that run out across Melbourne.

We have looked at stormwater options. There was a significant proposal for utilising stormwater from the Dights Falls storage, and there is some infrastructure in place. It just became incredibly complex on the existing system, and a feasibility study has been published on this which shows that it became incredibly complex to address those very issues that I have just outlined. To use large amounts of stormwater is the same as using large amounts of sewage; you have to have a storage facility. You have to take it somewhere in order to pre-treat it, to then send it off in a clean enough state for the fact that it is going to be poured into a dam and then treated as it leaves the dam and put into the potable water system.

Mr INGRAM — How much of the focus of the eastern treatment plant will be on — and I know it is not government policy — looking at the option of actually putting it back into potable use rather than back as environment flows or —

Mr HARRIS — Directly into a dam. That is not part of the examination because it is not part of government policy. Future governments may well want to utilise water in such a way; that would be a matter for them. But the important thing is that the business case will show you what you can do with it without having to put it back into those storages directly, as you just suggested happens in other parts of the world.

Mrs PETROVICH — Thank you for your presentation today, gentlemen. In your submission you noted that Melbourne residents have responded to the need for water restrictions and have achieved a 34 per cent reduction in water use as at 2007. Have you done the modelling on the savings that would have been achieved on stage 4 restrictions, and can I ask why Melbourne is still on stage 3A water restrictions when we plan to take water from the north out of areas which are on stage 4 water restrictions?

Mr HARRIS — The practical difference between 3A and 4 lies in the employment of people. There would be businesses that would have to close down if we cut off the water, and the estimated saving — and I am looking at David as I say this — 2 gegalitres is the number that is in my mind. When you say water from the north, that is 75 gegalitres. I think the number might be slightly higher than that — let us say a range of 2 to 5 as a difference between 3A and 4. What we have really done with 3A, and I notice quite a few other localities have effectively copied this, is said, ‘If we were in stage 4 but we did not want to have the employment impacts what would we exclude from it?’, and roughly that is what we have done.

There are some other small areas where we would increase social disharmony by telling everybody that they simply cannot ever water their gardens, but they are not the primary source of water savings that we would get in moving to stage 4. The quantum of water available from doing that is not significant enough to substitute for the major augmentations that we are talking about here, and the importance of those augmentations is that they enable us to continue to underwrite, if you like, Melbourne’s future development by saying reliably that, ‘Water will be available to you’. It is very important to us that we do not say, ‘Let’s underwrite Melbourne’s future development by keeping ourselves on stage 4 restrictions’. That is not the policy intent here. The intent here is to say, ‘We are going to have permanent water savings in the future, but those were the sorts of measures before 2006. We are not going to have a perpetual reliance on water restrictions’.

I note that the commonwealth bought into this urban water debate through the secretary to the Treasury who has made a number of scathing public comments about how water businesses really are not operating in the appropriate market economy because they rely for their ultimate underwriting of supply on the kind of restrictions that we would accept in no other business. The secretary to the Treasury, who I know quite well, is a person who holds strong and passionate views. I would not necessarily agree that that is what we are relying on as a business tool in the future, but we certainly do not want to turn policy around and say that is what we will be relying on in the future. We do not want to say that it is necessary for Melbourne to continue to develop for us to have water restrictions.

Mrs FYFFE — Thanks, Chair. We will have an opportunity to ask another question of Melbourne Water, won’t we?

The CHAIR — With Melbourne Water, yes.

Mrs FYFFE — If I could just go to the recycled water from the eastern treatment plant and the two major options of pumping it to the Latrobe Valley or the substitution of recycled water into the Yarra River. You have a business case going through at the moment. Has there been research into, and do you have any findings yet, in answer to the concerns that are expressed that the processes the water must go through before it is pumped into the Yarra will actually have a detrimental effect on all living organisms in the river?

Mr HARRIS — Yes. That is a key element of this. When I put forward this idea, back when we were developing the water plan, that we could potentially utilise the water in this way, my expectation was, of course, that the pumping cost and the piping cost would be the killer. It does not look like that is the largest issue. The largest issue is what you have just outlined, that this water is effectively too pure to be put into the Yarra, and will not encourage the right kind of environmental responses. The concept of creating an artificial wetland and allowing the water to, if you like, take up naturally some of the organisms — and I am not a biologist as I am sure you will understand — but some of the things that are taken out which should not be taken out when we clean all the poo out, allowing that to get back in is an essential part of the assessment. That obviously creates an expense and a land use issue.

Mrs FYFFE — Have you identified where you could establish wetlands of the size that you would need for this?

Mr HARRIS — Yes.

Mrs FYFFE — Are you going to give us a hint where that could be?

Mr HARRIS — In the study when it comes out.

Ms LOBATO — Yesterday the *Sunday Age* reported that since 2003, 25 000 Victorians have installed water tanks compared to 240 000 Queenslanders since 2006. The differences obviously go to the substantial

difference in rebates available between the states. I was wondering whether DSE recommends any increased rebates or perhaps has even looked at free water tanks being supplied to high rainfall areas.

Mr HARRIS — We certainly have, in regional areas, supplied substantially larger subsidies than in the urban areas for water tanks where people have been completely dependent on that, and particularly the Wimmera Mallee water tank subsidy schemes that have operated in the last couple of years.

In terms of Queensland's performance versus Melbourne's performance, I guess in Queensland the take-up has been significant, as you say, and in part driven by much larger subsidy support. We have not, though, planned on enhancing any of the rainwater tank support schemes that we currently have in place.

We have an option — and I say 'option' — in the 5-star building code for people to install rainwater tanks in new homes, but there is no plan in place to consider an increasing level of subsidy, and indeed if you go down the path that we are going down with the major augmentations the idea is that after 2012 we will be in a position to vary our water restrictions quite soon after that. We think that providing supplementation in terms of water tanks is important in the next three or four years but it will be a less significant contribution after that.

Mr VINEY — Just on the water recycling levels, I think you said in one of the slides that it was a bit more than 20 per cent of the water material used?

Mr HARRIS — Yes, it is 22 per cent. That is right.

Mr VINEY — Presumably that does not include what is happening with the eastern treatment plant, so do you have any estimates of what that will be once the work at the eastern treatment plant comes on site?

Mr HARRIS — I do not have an estimate of that, in part because the key question is what will be designated as recycling. If it goes to the Latrobe Valley and we bring in fresh water, I can see a definitional debate emerging as to what is recycling and what is not. Another argument might be that that will potentially be the creation of a new water source.

If it were utilised in the Yarra, there would probably be a fairly good case for saying that is a substantial enhancement in recycling but we were not doing this in order to hit the recycling target. We were doing this simply because with this amount of water, if we clean it up to class A standard in terms of what I might call a social policy response, which is, 'We produce a lot of waste in society and we should clean it up', it would be pretty irrational for us to say, 'Let's just dump it at sea', without examining what we could otherwise use it for. That is the default case here. If this water is not used in some way the default case is that we will have to provide some mechanism for dumping it out at sea, and it will be fresh water.

I have discovered some very interesting things in this job as head of the environment department, and one of them is that fresh water and salt water should not be mixed in a way that simply says you take no account of the impact on marine creatures. For that reason we will probably have to do something about the fresh water we put into the sea just as much as, in answer to the earlier question, we will have to do something about the fresh water or class A water if we try and put it in the Yarra. All water is not the same, but we were not trying to undertake this in order to hit the recycling target. I can see definitional arguments emerging, and I am not sure I really would like to claim a role for this in meeting recycling targets.

In our submission — I think in one of the attachments — we did actually itemise the sources of water use for that 22 per cent.

Mr INGRAM — Attachment 4 I think it is.

Mr HARRIS — Yes. I am just trying to find it, but I have messed up my papers, so I cannot find anything. Anyway, the sources for the 22 per cent are mentioned in there.

The CHAIR — Thank you very much, Mr Harris and Mr Downie, for your submission. We thank you for that. You will receive a copy of the transcript.

Witnesses withdrew.

