PUBLIC

THE JOINT SELECT COMMITTEE ON PREVENTATIVE HEALTH CARE MET IN COMMITTEE ROOM 1, PARLIAMENT HOUSE, HOBART, ON FRIDAY 19 JUNE 2015

Dr NICK COOLING, FACULTY OF HEALTH, UNIVERSITY OF TASMANIA WAS CALLED, MADE THE STATUTORY DECLARATION AND WAS EXAMINED.

CHAIR (Ms Forrest) - Good morning. Everything is being recorded by Hansard and you are giving sworn evidence. So it will be transcribed and form part of the public record. We will prepare a report and your evidence may contain that. You are covered by parliamentary privilege while you are inside the committee, but not once you step outside. The media are aware of the meeting today, so they may turn up. If they do, they may grab you on the way out. We are aware that you were hoping to attend with the Asthma Foundation witnesses on a previous hearing, but could not make that.

Dr COOLING - Yes, that is right.

CHAIR - We are happy to discuss any aspect of preventative health that you wish to. I know that is an area that you have particular interest and expertise in. Perhaps if you could give us an overview of your experience and background, and provide any opening comments, then committee members will have questions for you following that.

Dr COOLING - Thank you for inviting me back. I was part of the delegation from the Asthma Foundation of Tasmania. My main brief is around the area of allergies. I am coming at this from a number of different backgrounds. I am a GP and have been for 25 years, practising only in Tasmania in both the north-west region and southern Tasmania. I also come to this as an academic. I work at the University of Tasmania full-time in the school of medicine. I am on a number of different committees and associations - the Australian Society of Clinical Immunology and Allergy and I am also on the Allergy and Immunology Clinicians Advisory group.

I guess allergies are not talked about a lot when it comes to this sort of committee. You might have done asthma or cardiovascular disease or arthritis, and prevention of those problems. Allergies are not discussed a lot. It has a fairly low profile and yet it has a huge impact in terms of prevalence. About one in five Tasmanians has some sort of allergy. What I am talking about is eczema or hay fever or asthma or a food allergy or an insect venom allergy or a drug allergy.

There is quite a range of conditions. They are very common conditions. Because they are not usually life-threatening - although some allergies can be - people do not spend a lot of time talking about them. So they are common. They are also part of a chronic condition. Allergies often seem trivial, but these are often lifelong and people have to manage them over a long period of time. The third point is they often occur together in clusters or groups. In other words, you do not usually just have asthma by itself. You often have hay fever as well, and you may have a food allergy as well, and you may have an insect allergy.

They often accumulate over time. That is, as you get older, you add on to that morbidity process of additional allergies. That adds to the complexity. In terms of the impact on Tasmania and in fact, anywhere in Australia, it affects people's ability to work, particularly. It affects productivity. It also affects their need to have health services. Finally, it affects their day-to-day quality of life. I think we need to spend more time considering allergies for that reason.

They can be prevented, which is the purpose of this committee, I presume - looking at preventative aspects of this condition. I know you already have probably had lots of people talk about primary, secondary and tertiary prevention. I presume you are all over that now. I will not explain that, but allergies can be prevented in all those three areas. Obviously, primary prevention is stopping the allergy occurring in the first place and is the most efficient way of doing things. However, once people have that condition, how do you control it and reduce the impact on their work and life? Then, finally, how do you stop them accumulating these additional allergies over their life? That is tertiary prevention. I can look at aspects of those. I guess this applies across all the western world, not just Tasmania. I guess you might be interested to ask about some questions regarding Tasmania specifically. I can talk to that if you like. Do you want me to perhaps leave it there and ask some questions? How much further do you want me to talk?

CHAIR - From my memory, no-one has actually mentioned the word 'allergy' in this committee so far. I could be wrong on that, but I think you are absolutely right in that. It does flow across a whole range of issues and areas that we have already talked about, like asthma and some of the other chronic conditions. It would be good to drill down a bit more into the primary prevention, and the secondary and tertiary after that . Primary prevention is the key. Babies are born almost with eczema at times and often there is a family history. When we talk about preventative health, how can we address this issue in a way that has an impact?

Dr COOLING - These are general concepts applying to Tasmania and anywhere in the western world. It is not specific to Tasmania. We do not have a preventative strategy that is perfect for allergies unless you change people's genetics. It is very genetic-driven, as you know. There are some things to do both in utero and in early childhood that can prevent the development of allergies, particularly generic things such as smoking, and that has been proven. I know you have been discussing smoking a lot. Avoiding smoking both in pregnancy and during early infancy from secondary smoke is evidence-based to prevent allergies.

CHAIR - Do you understand the mechanism of that link?

Dr COOLING - As a general pollutant and irritant of the immune system, particularly of the developing immune system, it seems to trigger a change from being non-allergic and tolerant to being intolerant or allergic. It is to do with T cells as they develop in utero. I will not go into specifics. That is the same mechanism of how we develop allergies through life. You are usually born being tolerant to allergies and at some times during life we then become intolerant and switch from what is called a T1 to a T2 response. It is the immunology of how we become reactive to allergies through life. That can be trigger in utero or in the first few months of life by smoking as an irritant.

Mrs TAYLOR - Does that apply to all allergies?

Dr COOLING - Pretty much that is the mechanism of how that works.

Mrs TAYLOR - Even an insect bite reaction?

Dr COOLING - With all allergies, you develop a response to one episode of the allergy and it is the second response as you have developed antibodies that causes the illness. That switch to being intolerant is due to the T cell changes and that applies whether they have venom allergy or food allergy or eczema or inhaled allergens like house dust mite or pollen.

Smoking is one. The other ones are general. We think that healthy lifestyles generally prevent allergies. That would be early in life - having good nutrition and particularly breast feeding is the very big key. We know that children who are breast-fed have fewer allergies by a significant amount, and often half.

CHAIR - How long are we talking about?

Dr COOLING - We are talking about a minimum of four months. That is recommended, generally. Exclusive breast feeding, especially for those who have a family history of allergies, if you want to reduce the impact on the next child, breast feeding is really encouraged. I am sure that something you would not disagree with. We all recommend breast feeding for a whole lot of other reasons as a good way to start life.

Mrs TAYLOR - Does that carry on longer?

Dr COOLING - Yes, it has a lifetime reduction in prevalence. That four-month investment is worthwhile in the longer term.

Mr BARNETT - Does it block particular types of allergies?

Dr COOLING - Eczema and asthma - those two particularly because they develop early on, and food allergies. We now know that breast feeding has an impact on peanut allergy and other food allergies.

Mr BARNETT - Do you have evidence you could point us to that says it blocks it with breast feeding? If there were, that would be useful.

Dr COOLING - Yes. I can table a couple of papers from ASCIA, the Australian Society of Clinical Immunology and Allergy; Susan Prescott has most of the data on that. She is from Western Australian and she has done most of the work on preventing allergies in early life. I will table that document in a minute.

Healthy lifestyle, breast feeding and smoking; there is a lot of controversy about some others. One is about our gut bugs - our germs in our bowel - and there is a lot increasing evidence that getting healthy germs in your bowel early in life prevents allergies and this is to do with the stories with probiotics and things like that.

Ms FORREST - Colostrum works well.

Dr COOLING - Colostrum is wonderful. That is a natural probiotic. There have been lots of studies now, where we are adding additional bugs, apart from what is in breast milk, to infants. The data is not completely in yet. There have been some very good studies but we cannot go to the community and say, 'You should all be having probiotics', but it looks promising and I think that is something we will be looking at in the future. Maybe some natural probiotic such as dairy products and other healthy Tasmanian food may be a very useful thing in that regard.

Mr VALENTINE - There will be an explosion in Kefir intake.

Dr COOLING - Indeed, there is a lot of that. We know all the foods you get in the dairy section now - Yakult and all those yoghurts that have high levels of lactobacillus, especially Tasmanian yoghurts - are a very useful thing to have in the first few months of life. After you are weaning the child, you won't be using them usually until after four months of age.

Mr VALENTINE - This is just to populate the gut?

Dr COOLING - Yes, with healthy good bugs. We think that affects the T cells and the development of allergy. That is also in the pack I will table.

CHAIR - Obviously, babies and children need milk and dairy in those formative years, but once we get to adults we just get fat if we have too much dairy.

Dr COOLING - Yes and no. If you have low fat versions of dairy - milk has 2 per cent fat in it; it is not that high in fat. Low fat milk is 1 per cent.

CHAIR - Low-fat milk has more sugars than full cream milk.

Dr COOLING - That is true. As part of a balanced diet, I think the advantages outweigh the negatives. It has calories and energy in it and fat has more calories than protein or carbohydrate. As part of a balanced diet, you are getting all the other goodies - calcium, protein and lactobacillus, et cetera. It is part of a healthy life and you need to have a certain amount of dairy for your bones. We usually recommend two to three serves of dairy a day. As long as you are not overweight and have other competing issues, that is a very healthy way to go.

Ms O'CONNOR - We are interested in your take on Tasmanian-specific allergy indicators and how much of a role socio-demographics plays - poverty, lack of access to fresh fruit and vegetables. What does the data tell us about the particular circumstances in Tasmania and what contributes to those circumstances?

Dr COOLING - I thought this would be a very important theme of this committee. We know social and socioeconomic determinants of health are significant anywhere and they are very significant in Tasmania because we have a population that has some challenges in that area. We continually talk about our ageing population, our population that has challenges regarding employment levels and income, and education levels and those sorts of thing. Moving on to how that affects allergies, we know our rates of asthma and allergies are not much different from the rest of Australia - they are perhaps slightly

higher. We have the same level of allergies generally - about one in five or 20 per cent. Our asthma rate is up to 5-10 per cent, depending on which population. Our food allergy rate is about one in 10 of infants or young children. It is an enormous problem, but fortunately many of them grow out of that. These tend to occur a bit more in clusters around groups that are socioeconomically challenged. They also have less resources to sort out those problems. Smoking levels are higher in that population; access to health care is more difficult; their rates of breast feeding are less - maybe because of various issues with health promotion messages; their access to healthy fruit and vegetables - so a healthy lifestyle generally in the first few years of life is less accessible. It is part of the overall process I am sure you have been discussing for the last few months. Cardiovascular disease, arthritis and obesity are more difficult in this population. We need to target some of our preventative strategies more keenly in this group but also be more understanding of how we can get the messages across or provide a more transformative approach to the indicators that make it difficult for them. It might be that we encourage people have better access to education, and different quit smoking programs for this group. I am very interested in the program of a tobacco-free generation and how that would impact this group, for example. I think it is very innovative and could be a ground-breaking way of targeting that population from lower socio-economic groups because it will send a signal to them that they won't be able to access tobacco until they get older in life. I think if we get them through that initial phase till they are into their 20s we can certainly stop that uptake a lot more than our current strategies.

Ms O'CONNOR - You talked earlier about asthma and about 5-10 per cent of the population having asthma depending on which population you are talking about. Do you see a difference in asthma rates between children, for example, who grow up in South Hobart and those who might grow up in Ravenswood? With asthma, is there a clear socio-economic link between rates?

Dr COOLING - I do not think we have that data specifically for Tasmania. We have some global population data but I do not think we can bring it down to suburbs or even into small regions. We have some data at the Menzies Institute, where I partially work, that shows that asthma in Tasmania is certain increasing. As a population we know therefore that that also adds on to other comorbidities as people carry their asthma through. They add hay fever to that and we know that we are going to double your risk of getting additional allergy problems if you do not treat it early.

Getting back to your initial question about whether there is a difference between some suburbs, we know that smoking in Tasmania is very correlated with allergies and we therefore know where smoking is more prevalent, which would be in certain groups that are lower socio-economically or have high levels of smoking, and therefore it could translate to higher levels of asthma. We do not have that data though on the actual regional instances of asthma or hay fever.

Ms O'CONNOR - Has there been any unpacking of why it looks like asthma rates in Tasmania are increasing and what is the extent of the increase? I was not aware of this.

Dr COOLING - They are not screaming up, or going at a great increase. They are a slight increase. What we think are some of the driving factors remain smoking but smoking rates are going down as you know. Air quality - I am sure that Fay Johnston talked about that when she came and spoke to you regarding the asthma presentation. We know that

air quality has a role in that and we know some pockets of Tasmania such as, say Launceston - although things are better there now - did have high rates of asthma because of the air quality from wood heaters and that sort of thing, and also the geographic nature of that region. We know that has a role.

We have some data on other pollutants and we are about to launch a study as you know, the Air Rater study. I think I have heard Fay mention that as well. The Air Rater study will measure pollution and also at least 20 pollens in five parts of Tasmania using devices mounted on buildings. We have sites in Launceston, Hobart, probably Campbell Town, one in the north-west and a fifth site which we are not sure yet, where on any day in Tasmania we will be able to tell what the air quality is like and also the other aero-allergens pollens, and we will be able to feed that to people for free on a smart phone app and they can determine day-to-day what the air quality is like in their region. That might be about 50 kilometres away but roughly in their region.

Mr BARNETT - Is that happening now ?

Dr COOLING - That is starting in September. We have the funding. We are starting that process. That will be delivered very shortly.

Mr BARNETT - Who is funding it?

Dr COOLING - It is funded by Sense-T. It is a federal government funded but via the Sense-T organisation at the university. The big advantage there is it will put people in control of knowing what is happening in their region. They will see daily what is happening in terms of their air quality.

CHAIR - If the EPA can have a current live monitoring air quality site on their website as well, will that link it all with that? Is that going to be a separate thing?

Dr COOLING - It will be a separate trial in the sense that this will be much more specific and much more designed for people with health problems. The EPA do produce data but it will not be as good a quality as this particular study. There are five sites and that will give people a much more local approach to what is going on. At the moment we are using some EPA data but many people are using data from Melbourne. It comes out in their weather reports - pollen counts - and that is totally irrelevant to what is happening in Hobart or anywhere else in Tasmania.

CHAIR - There is a little bit of water in between.

Dr COOLING - Yes, and what we hope is that this particular study is going to allow us to do crowd-sourcing for people to feedback how their health is going on a day-to-day basis. We can say we are noticing that people's hay fever, asthma or other allergies are getting worse on a particular day in a certain region and that will feed back to that population so they can see what is happening to other people in their region.

We hope over at least a year to then be able to tell people we know what days seem to be affecting you the most. You can prepare and look after yourself better by having some prevention around those particular days as they come through out the year.

Obviously, people at the moment have a hunch about why they are unwell but this will give them some real data on whether it is an increased smoke amount or increased rye grass or a weed or particulate matter generally, because some people respond to things in the air and not just purely allergies.

The bottom line with your question is that we need more data. We haven't drilled down enough to look those social indicators to see how they are related to health. This a great challenge for the Menzies Centre because the data is there; we haven't mined it, though.

Mr VALENTINE - I am wondering whether you have done any work in the wood smoke area in terms of impact on communities.

Dr COOLING - It generally does and I guess Faye Johnstone would be the person to ask that question because she is certainly Tasmania's expert in that area. Part of the Air Rater study I have just mentioned will look at that.

Mr VALENTINE - There is nothing significant apart from Faye? You are not aware of whether asthma is currently related to smoke?

Dr COOLING - It definitely is. Internationally we know that. There are Canadian models and models in Australia and there have been some studies in Tasmania which Faye has done which show that the smoke does increase to 30-50 per cent your chance of having an asthma attack, so it is a large amount. It is usually a non-specific factor in terms of affecting people.

We also looked at wood burnings so burn-offs and fuel reduction burns from Forestry Tasmania. There is some good data there on how that has increased the access to emergency departments on those days and the need for GPs on those days. So there is data on that in Tasmania. Again, that shows on those certain days in those micro-regions such as Geeveston or wherever that there is certainly an increased presentation to health professionals from asthma.

Ms O'CONNOR - Sorry to interrupt here but we had evidence from the Asthma Foundation that indicated woodheaters were much more of a problem than burn-off fires, whether they be Forestry Tasmania fires or fuel reduction burns. The argument was put that those bigger burns actually burn hotter and higher. Did you have anything to say about that?

Dr COOLING - That is true. Certainly the micro-environment of a house is much worse than the particulate matter in the stratosphere which tends to rise and have less effect, although it certainly is still correlated to some extent.

Ms O'CONNOR - So you can see the link between, say, a forestry burn or a fuel reduction burn and presentations at the hospital?

Dr COOLING - Absolutely, in a microclimate area. However, as you say, there is not as much as an individual woodheater would be in a house because it is a much greater concentration in the air there, and you have the blow-off effect from a burn.

This is why we are doing this Air Rater study because you cannot always tell from what you see what is happening on the ground. Our monitors that we are going to be using will be close to the ground but they will be monitoring not what is happening 100 metres up there but literally what is happening on the surface.

CHAIR - At mouth level.

Dr COOLING - Yes, at mouth level.

Mrs TAYLOR - Are allergies, particularly, say, food allergies on the increase? Or is it just that we are more aware of them? Now you get asked, 'Are you gluten free? Are you dairy intolerant?', and all that sort of stuff. That is one question.

The other thing is that we talk a lot about socioeconomic factors and I know that that is true. However, is there some truth in saying that well-off families are also not getting sufficient gut bugs because their children are not playing outside as much and therefore not eating dirt or things like that?

Ms O'CONNOR - We are eating too much processed food.

Mrs TAYLOR - Eating too much processed food or not getting the outdoor lifestyle stuff. Related to that, we have become such an antiseptic and sanitary society that we kill a lot of the good bugs in our houses so that they are not available.

Is there truth in that or is that all a myth?

Dr COOLING - You are on the money there. Just in terms of your questions, food allergies are actually increasing, but also we are more aware of them. You are both right there. As I said, it is about a one-in-ten prevalence now across Australia. People tend to grow out of allergies as they get older in terms of food allergies. Children become tolerant.

Mrs TAYLOR - Every school now is almost nut free whereas when I was child mothers were not aware. Did people just die?

Dr COOLING - There was some of that. There are a couple of reasons. As you have mentioned, there is the hygiene hypothesis. We think more allergies are occurring because we are cleaner now. We are using more antiseptics, et cetera, and wiping every surface down with various sprays. We are also not exposed as much to animals and to dirt. So that does affect the gut flora, absolutely. We have more antibiotics in the system - both in our animal system and also our human system, so that is also killing our bugs.

The hygiene hypothesis has really ever been proved it but it certainly has many strong associations. I think that is one factor. We know, for example, that people who have pets have much less allergies because they have more bugs and other things with them. We certainly would encourage people to have pets. It is not a strong association. The other think is that our food is being prepared differently. Cassy has mentioned about processed food and that sort of thing. It is true; but even the way we are preparing nuts is different. For example, 50 years ago we were not roasting our nuts. Now we are roasting nuts, we are releasing different proteins and so they become more allergenic. So

our food preparation, because the food industry is processing more things, does release and make proteins more available to be allergens.

CHAIR - We should eat more raw food - raw nuts.

Dr COOLING - Maybe. There is a whole controversy around nuts and I could talk for a long time. The thought is if you have got probably a mild or very little nut allergy you should not be avoiding those because you should be challenging you system and not avoiding it. I think we have gone too far, basically. We have now got good evidence from a study called the LEAP Study in the UK which says that children with mild allergies should not be avoiding food completely. We should be introducing them early and challenging their system because the longer they go without them, if they have only got a mild and not a severe anaphylactic, the more allergies will develop. They found that if they gave children peanuts at the age of six months to a year by a peanut paste or peanut butter, they had four times less, a quarter less allergies at the age of five if they challenged their system. There is quite a controversial area but I guess what we are saying is that it does not mean avoidance and we have gone a little bit too far in the hysteria around allergies. Yes, there are food allergies that need to be worried about. Kids with anaphylaxis need to be very carefully looked after, but we just do not need to completely avoid complete food groups for kids with very little allergy.

The other thing is that we are very concerned about some of the alternative practitioners around this area who will say, 'Go gluten free'; or 'Just go dairy free'; or, 'Just go wheat free'. I think this needs a careful view as to why people should be cutting out whole ranges of foods out of their diet. It needs to be done with a proper practitioner who knows what they are doing. I think we have been a little bit too careful in the past of avoiding foods and kids then have nutritional problems. They have very little food they can choose from. They get a lot of anxieties over that.

Mr VALENTINE - Is it born out of the propensity for people not [inaudible].

CHAIR - Risk averse.

Mr VALENTINE - Yes, antibiotics, for instance - a new experience now with your antibiotics - allergic reaction. Next time you take them it can be fatal. That is what they are told by their GPs. Is it aligning to that too much?

Dr COOLING - I think families generally want to be risk averse. There are issues regarding litigation, but also people want to be cautious. This whole problem leads to lots of issues. For example, the penicillin allergy issue, I reckon a third of the population say they have got a penicillin allergy, and it usually isn't. Yet we do not have the facilities in Tasmanian or in fact many places in Australia to test for that, so for people left with a lifelong label, 'I have got an allergy to penicillin'. We have not got the facilities to challenge that. People are left with a 'I have got a nut allergy' for the rest of life where they do not need to have that label. One of my messages today is that we do not have a system in Tasmania. We are the only state in Australia that does not have a clinical allergy system. We do not have a place where people can go as a on-stop-shop to get their allergies sorted out in Tasmania. There are lots of services here and there, fragmented, but there is no coordinated services for allergies in Tasmania. One of the

recommendations of the clinical immunology and allergy commission's group was to get that on the table for the health minister through the white paper and that has been tabled.

Ms O'CONNOR - How might we set something like that up and through what institution or vehicle and which state does it best?

Dr COOLING - Good question. Probably WA and New South Wales are my two recommended areas to study. We mainly need to work through our public health system that exists - through our hospital system. We already have a children's allergy clinic at the Royal Hobart Hospital which is well run. We also have a Jack Jumper venom clinic which you would all be aware of and it is world famous. We are the epicentre for Jack Jumper allergies and treatment. We have a little centre in the north-west region at the hospital there, run by one of the paediatricians. However, it is extremely fragmented with very little in services in the north of the state.

I will table a report to this committee which talks about kids often having to go to Melbourne to get treatment or advice regarding nut allergies or other allergies, including asthma and going through the Children's hospital there, rather than using Tasmanian services because they do not know where to go. What we need is a clinic that is linked between the four major teaching hospitals who can refer to each other. Wherever a person lives, they can access that service, a statewide service, from their public hospital system and it can then link in. We could move nurses and practitioners around that whole service and it would be more flexible if it was one system. That is the way to go.

We have very little in the private system. We are gradually increasing our allergists. We have two allergists in Tasmania at the moment. Mostly, we need to have a public drug allergy system and also a better system for testing and challenging kids for food allergies. We have that in Hobart but not in Launceston and it is very limited in the north-west. We do have a little clinic there run by Heinrich Weber, one of the paediatricians.

We need more opportunities to challenge kids with foods and that way we can reduce the anxiety over that and allow the parents and the schools to be more secure and confident about whether it is a food allergy or not. If we could get a robust system of food challenge clinics, that would be an enormous help for Tasmania.

The Western Australia and New South Wales models are good in that regard. They have a very easy access system wherever they are, and we could learn from them.

CHAIR - It was popular a while back to have to go through a desensitisation program. Is that still an option and when and how does that work?

Dr COOLING - What you are talking about there is trying to change the natural history and progression of allergies. What we call desensitisation or immunotherapy is the only treatment we have that can change the natural progression of allergies. There is a condition or what we call 'the allergic march'; it is a phenomenon where kids are born with eczema and then, after a few months, they get a food allergy, and then when they get to three or four, they get hay fever, and then when they get to seven or eight, they get asthma, and that is called the allergic march. The only thing we definitely know that changes that natural progression is desensitisation or immunotherapy. That is where you

give a child or an adult small amounts of the allergen and challenge them weekly or monthly over a few years and make them move back to when they were tolerant again.

CHAIR - Is that effective for most people?

Dr COOLING - Very effective; it has about 80 per cent effectiveness. It is easily available in Tasmania orally or by injection. It is delivered by either GPs or specialist allergists or sometimes lung doctors - respiratory doctors - but mostly allergists and GPs. It is widely available but we would like it to be more. It is not available in the hospital system much. It is through Brendan McCann at the Royal Hobart Hospital through the Children's Allergy Clinic and a little bit on the north-west but not available much in the hospital system in the north. We would love that to be more available. It is expensive and that is one of the barriers for it; certainly for lower socioeconomic groups it can be expensive. It is a long process, up to three years of desensitising.

For jack jumpers, it is often a lifetime desensitisation program. The jack jumper desensitisation program is extremely effective. Prior to 1999 we had five deaths and in the most recent years we have had no deaths. It has reassured people and made them feel more confident to get out and work if they are a beekeeper or working in the field, forestry workers for example. That has been a terrific success. That is what happens when you have a good public clinic, good research and people know about it and know how to access it. However, general desensitisation, usually for pollen or dust mites or foods, is only just coming in; it is still experimental. If we had greater accessibility to that it would make a real difference to the trajectory of this disease process.

Mr BARNETT - As to the cost, you said it is quite expensive. Can you explain how it is funded at the moment and how people access it?

Dr COOLING - There is a little bit of public funding through the hospital, but very little. It is mostly private - they will be seeing their private GP and or the private allergist. It is not funded by the Pharmaceutical Benefits Scheme.

Mr BARNETT - If I go my GP and the GP says, 'You need this', then you have to fund it yourself?

Dr COOLING - That's right. The cost can be not too prohibitive. It can start at about $170 for the initial course and then there will be some maintenance with another $170, so over two years it might cost people $340, up to $3 000 or $4 000, depending on what they are having. It is much more expensive for the oral course and cheaper for the injection. One problem is that only a few GPs do this. There are only four of us in the south, two in the north, one in the north-west, and two allergists. There is not open access to it in the sense that they have to know where to go. It needs to be more available. It is used much more on the mainland where there is more of a network of allergy clinics that can work with each other.

Mr BARNETT - Are GPs not aware of this, are they not picking up on it?

Dr COOLING - No, they are aware, but it means referring to another specialist or specialist GP. They can't do it themselves because it involves some expertise.

CHAIR - You also have to be well set up for an anaphylactic reaction, don't you? The risk is someone will have an anaphylaxis on you.

Dr COOLING - That's true. An average GP shouldn't be doing this because you need to have oxygen and all the resuscitation gear. That is why only a few people do it, you need to be in a place of safety when you are having the initial diagnosis and treatment. Many GPs roll out the desensitisation in their clinics, as long as we have checked them and we support them.

CHAIR - You have talked about the importance of healthy food, lifestyle and the importance of young children getting access to good food. They start school fairly young so what are your views around foods available in schools?

Dr COOLING - Do you mean in their tuckshops?

Ms FORREST - Yes, the food that is provided at the school. You can't control so much what parents put in their kids' lunch boxes but you can control what is provided through the school.

Dr COOLING - You can. There are not a lot of school programs that deliver food apart their tuckshops. There are breakfast programs in a few places and at lunchtime there are canteens. I think there is now a Healthy Canteen program that has been rolled out in some places in Tasmania and schools will be accredited for that. All schools should be looking at reducing their sugar and fat delivery in the tuckshops and that would generally help allergies. Some schools have their own vegetable garden and can supply the canteen, and that is terrific. We should all support that.

CHAIR - I want to go to the issue of mould. Many people are allergic to mould but it tends to occur more commonly in the lower socioeconomic housing areas.

Dr COOLING - Many people talk about house mould as being a big issue but it is not such a potent allergen compared with mould in the stratosphere and the air, and that comes from composting mulch and soil. They are actually more virulent allergens than the black mould you'll see in your house, which does not tend to aerosol much. Many people complain their house is damp, they have mould and they must get allergies from it. They usually get respiratory illness because it is cold or they get not enough humidified air, but mould in houses is not such a big issue. As I said, there is mould in our air outside that is much more toxic. It is just as bad as pollen and dust mites if you are allergic to it, but if you are not allergic to it it is not usually a big thing.

Mr BARNETT - Yes, a two-part question. Are there any Tasmanian-specific concerns regarding allergies? You mentioned that we are similar to the rest of the nation, can you name any Tasmanian specific allergies? I also refer to vitamin D deficiency in Tasmania because of where we live. The second part of the question is about iodine deficiency - is there anything we can do about that?

Dr COOLING - Firstly, Tasmanian-specific problems. Our general amount of wood smoke is higher. Our smoking rates are higher than anywhere else in Australia, as you know, so cigarette smoking has a secondary knock-on affect. Our pollen counts are high in some areas, particularly rye grass is very high in Tasmania, and this new study we are going to

do is going to work out exactly how we fit in. We know that some of our grass pollens in Tasmania are particularly high but we have not a lot of research yet on that.

They are some of the factors. Our lack of access to some healthy food might be another thing to think about, and also our access to health care to prevent the progression of our allergic problems in Tasmania because we do not have access. I hope I answered that.

Mr BARNETT - I mentioned vitamin D.

Dr COOLING - Vitamin D is important though because vitamin D has a very strong role in immune systems and strengthening our immune systems. If we have low vitamin D, that is one of the risk factors in Tasmania. That needs to be in the mix. There are not many studies done yet on that though, on whether if we increase our vitamin D levels to prevent allergies. I do not know the answer to that yet, but I think it would be a good bit of research to do.

Iodine is a tricky area. I would like to bring my colleague, John Burgess, here who is the world expert on iodine in Tasmania. We have less of a problem now than we did because, as you know, Tasmania has many iodine-leached areas. Our iodine levels in our soil and other plants are less. We need iodine probably more in our food chain and that has been in milk in the past through using products to wash our cups with Iodoform[?] and that sort thing. That is important to continue. I have not seen an increase or a problem at the moment with iodine deficiency but I could be wrong here. I think it is off the radar a little bit but I am not an expert on it.

Mr GAFFNEY - You mentioned about pollen and rye grass. Are there any crops that are coming now into Tasmanian agricultural industries that are maybe a new crop that have a high correlation between that crop and pollen that could be a problem? I am thinking of something like pyrethrum or any of that. Is there any assessment of that?

Dr COOLING - I do not have any studies on it. They are not usually tested for generally. When we test people with allergies, we do not usually have them on our panel so I do not know if we even know whether people are allergic to those things, let alone whether a crop might do that. Certainly in looking at the common crops such as rye, wheat and oats we can tell with both the impact and also whether people are allergic to them, but some of the rarer crops, whether it be poppies or pyrethrum or canola, I do not think we have the data anywhere in Australia on that, let alone Tasmania. It is a very important point.

Mr GAFFNEY - It is interesting with the irrigation systems that are opening up now for new land to have new crops how that it is going to impact on those areas which may not have a high count of pollen.

Dr COOLING - This study that we are doing will tell us total pollen counts. We will be able to see increasing counts. If a cropping area starts to happen in the Midlands and then our total pollen count goes up, that will be able to be correlated, but I will not be able to tell you individual ones yet because our 20 that we are going to be looking at won't include some of those more commercial crops. I will put that on my things to do list.

CHAIR - I think we could probably talk to you all day about a whole range of issues because you are a wealth of knowledge in this area. Thank you for that. I would ask as we wrap

up, if there was one take-home message you wanted for the committee or one thing that you think is the priority to start dealing with this, what would it be?

Dr COOLING - I guess put allergies on your list of problems. They are chronic and life-long but they are to do often with a healthy lifestyle - breastfeeding, not smoking, et cetera.

The final thing is that if we don't have a better health system in Tasmania for people with allergies to access, they will continue to march on and have additional morbidities added to their list of allergens. We need better access to services to provide understanding and care of people with allergies.

Ms O'CONNOR - Nick, are you on the Healthy Tasmania Committee?

Dr COOLING - No.

CHAIR - Thank you.

THE WITNESS WITHDREW.

PUBLIC

Ms JACQUIE MAGINNIS, MS KIM BOYER AND **Mr ATOK NIGOR**, TIME TO BE CREATIVE, WERE CALLED, MADE THE STATUTORY DECLARATION AND WERE EXAMINED.

CHAIR (Ms Forrest) - Welcome, everyone. It is sworn evidence you are giving and it is all transcribed in *Hansard* and will form part of our public record, published on the website. You are protected by parliamentary privilege while you are speaking in front of the committee but if you did speak to the media or someone later on you are not covered at time. We will report at some stage and some of the evidence you provide may be included. We have a copy of your submission from 2013.

Ms MAGINNIS - Thank you very much for inviting the arts to speak for itself. It is a very exciting area of work and it is often very difficult to understand what they mean unless you have some experience of it.

I am presenting as a member of the general public, a member of what used to be called the Time to be Creative Network, which is what the submission was written as. That has now morphed into the Arts and PALS network. I have expertise in arts and building partnerships with arts and the health sector. I do that as part of my work as the health promotion coordinator.

The opportunity for Tasmania to lead the way with arts and health is not only exciting but is very doable. We have already been very involved in the development of a national framework for arts and health. It was a Tasmanian evidence document that was used as a basis to start the process of developing the framework. We know a lot about arts and health and wellbeing; we know a lot about the physical benefits of arts, music, drama, theatre and the direct health benefits. The world is changing, and we all know that, and the challenges for the health system are very dramatic. That is not just here in Tasmania, it is all over the world. It is much harder for people to stay physically active and eat healthy food. Often people are disconnected from their families and communities. The arts have the power to help us to imagine a different way of doing things. It is very much about how it can lead us to use our imaginations to think of different ways of doing things and different ways of living.

I have chosen four ways the arts can do that, and it challenges our mainstream ideas. I think some of you will have been involved in the MOFO education forum. That challenges and opens up space for critical thinking of different ways of doing things. The arts also is able to present complex information that is difficult to understand and address in a way that is very accessible. The arts brings hope to people and it can transform individuals and communities. Lastly, it tells powerful community stories, especially from people who don't have their stories told. It helps us to understand other people's experiences.

To begin with challenging ideas, I want to use two examples: belly dancing in Bridgewater, and Clowns in Hospitals. There are a couple of pictures of people belly dancing in Bridgewater where they made costumes and performed for their community. They did a performance for a health and wellbeing expo. Then they had a special thing called a 'hafla' which is where they all came together and danced and invited their family and friends to come, and they donated money to the community. This is something people said they gained from the course. The two most important things for this

presentation are, 'I am doing something I never thought I would do, and I know I can make changes'. This is the power of the arts, to take you outside of what you normally would do, exercise programs, and do something unique.

The next thing is clowns in hospitals. Most of us know about the clown doctor program, but imagine when it first happened, how the health system would have said, 'Clowns in hospitals?' Now they are known all over the world and they are doing wonderful things. There are some photos of clown doctors here in Hobart and an important quote from a family member, 'Laughter does not change what is happening to you, but it does change the way you handle things.'

It is this opening up of new ideas and new ways of thinking. The next part is about the fact that arts can present very conflicting and complex ideas. This is linked very much to health literacy. Health literacy is a huge issue in Tasmania and other parts of the world, but particularly here because we have such low literacy rates. If you use the arts to help people to understand, then you are making it more accessible and memorable.

This is, 'Think Before You Ink.' The question is to tattoo or not to tattoo? Young people in the Bridgewater community were concerned about their friends tattooing themselves in sheds with little packets of needles and getting very sick. They wanted to do something about it, so they have brought the community together. They provided some safe alternatives, and it was accessible and attractive. That is a sign that the young people created themselves with help from their community. That is some people taking in the messages, and these were pictures of tattoos that young people took. They went through the whole community and asked everybody, 'Can I have a picture of your tattoo?' That generated a tremendous amount of interest, so when the event was put on for Youth Week, it was very accessible and also there was lots of good health information about how to make sure you do tattoos safely, and how temporary tattoos are often the best option.

A couple of other examples, which I do not have slides of, are the *Die Laughing* comedy in the Central Highlands. That was held recently with funding from the palliative care grants program. It went really well. *Four Funerals in One Day* is another arts process, a play that is run and performed to encourage conversations about death and dying. We have had sexual health screening for chlamydia on the north-west coast. We have had Creature Tales, an arts organisation -

CHAIR - Was that in Smithton? Rural health?

Ms MAGINNIS - I think so, yes.

CHAIR - They do a lot of work up there.

Ms MAGINNIS - The last is Arts can Bring Hope and Transform Individuals and Communities. It is so important at the moment. People's sense of where the world is headed and what is happening to our planet and what is going to happen to my children? Will they have jobs? Will they be able to have a house? That sense of hope is starting to kind of fade away. What the arts does is gives us hope to imagine a new future. I have focussed mostly here on arts in the prison. That quote is from somebody involved in the

prison arts plan that I am working on: what has arts to do with prison, they are there to be punished.

This is a quote from a prison governor. We have lots of information from the UK, New Zealand and America, in particular, about the benefits of arts in prison. That is why it is taken from Arts Alliance, which is an English organisation: 'I do not do treats for cheats. If I did not believe this was reducing reoffending, I would not be doing it.'. We know that prisoner health is a massive concern, that mental ill health, drugs and alcohol abuse are major issues. Making changes can be difficult.

There is a spray paint arts activity that was held. Artists with Conviction is an exhibition that is held regularly in Tasmania. We have folders here to give each of you and one of them has a picture of that. You will be pleased to know the theme for this year is going to be a health-focused theme. At the moment we are coming up with the words to inspire people. The exhibition is being held at the Moonah Arts Centre and is coinciding with the national education and prisons conference, which is going to be held in November in Hobart. We are hoping we can show the way arts in Tasmania can link with health and education of prisoners and inspire the rest of Australia.

Creativity comes in many forms and opens the way for a different future. Art tells powerful community stories and helps us understand other people's experiences. The Find Your Voice Clarence Plains Singing Group recently performed at the Grand Chancellor Hotel. There is the Express Yourself Stroke Foundation Choir, which is struggling but keeping going. The choir is now writing a song about Clarendon Vale and Rokeby. The Express Yourself Choir, even though the funding ceased a long time ago, it is now called the Victors Social Singing Group. It is very much about reducing the stigma of mental illness, which is half the problem for people wanting support.

The last bit is about hearing the voices of people with Alzheimer's disease within nursing homes and making a difference about how we care for them. Many of the people in nursing homes are suffering from dementia but sometimes we are too busy to hear what they have to say. And because we are sometimes so busy, we have emergencies and getting things done, we sometimes forget what the overall vision for that person is. Sometimes we don't recognise what people are doing or understand that maybe they are telling us something and how important those feelings are. People with dementia find a lot of information coming at them constantly is very difficult to understand. The Farnarkling exhibition talked about how we always sit around discussing that something should be done but sometimes nothing happens.

The final slide is the Tasmanian Symphony Orchestra. That slide is taken from their work in the prison. They volunteered to be involved in family day in prison, which is about keeping families connected.

Ms BOYER - Jacquie was going to play - and the TSO reminded me of this - a part of the Hush Collection while she was talking but I said it would be too confusing because I cannot listen to music an concentrate at the same time. For those of you who have not heard the Hush Collection, we can play some at the end, if we have time. The TSO has recorded one of the Hush Collection for kids and their families in hospital as a part of the process of them adjusting to hospital.

I was a former senior bureaucrat, so I am talking from a former bureaucrat perspective but as a member of the Arts and Health Network. After the submissions was put to you in 2013, the state and federal governments both in arts and health, signed the National Arts and health Framework - a copy is part of your folder at the end.

My submission to you goes strongly on the basis that this is an excellent framework and provides the potential for the 'top down' rather than the 'bottom up' approach to how to implement an appropriate arts and health program or set of programs in the state. The dilemma that this was adopted in 2012-13 by arts and health ministers across the nation, including this state. However, there was nothing put in place about evaluating its progress, about having strategic plans for its implementation, or having resources dedicated to it. If your committee could make one recommendation, having appropriate resources put in both the arts and health bureaucracies to implement this national framework would be one of the most wonderful things that could happen.

At the moment in the state, people who are dedicated to this process, like Jacquie, are doing it off the sides of their desks, often without the support of their senior managers because their senior managers have so much other stuff on their plate that they do not see it as important.

My perspective is that if ministers of both arts and health signed off on it, they should be asking for reports; they should be having strategic plans about how to implement it and it is a wonderful way ahead. If you see yourselves free to looking at implementation, and it would be part of a handout at the end, that would be really fantastic.

The other thing I can say, as a member of this group, is that I am not artistic. I am a consumer of the arts and for me it is absolutely critical that Atok is going to talk. He is only 17 and you would not believe what he has done in his 17 years. He will speak from an individual perspective. My view, from a community perspective, is that there are lots of things the arts can do to help make us a healthier, more vibrant and more exciting community.

Atok is going to talk about, for him, what film-making has done for his mental wellbeing and his sense of purpose.

Mr NIGOR - I am from South Sudan. I came to Australia in 2007 and when I came here I was interested in poetry, drawing and stuff like that. It was a way for me to express myself because I did not speak English or write at all. I had to learn and adjust to the environment that I found. A couple of years later I was introduced to acting and I started acting; that was a huge passion of mine. From acting I was invited to a film set by director, Robert Woods, to observe things. I went in and observed, and I really liked the idea of directing. I said, 'I am going to be a film director'. Since then, I went on a long journey to become a film director and went on to do projects like short films and commercials.

For me, what has been really important is the help I have received from the Migrant Resource Centre or from Youth Art. Youth Art is great example of something for young people to go to. Youth Art do some amazing stuff for young people. They do magazine releases and stuff like that. So Youth Art and Hobart SYC created a base for me to become the person I am today. Without their help I wouldn't be here today because I

think that I would be talking to different people. I might have even been involved in bad stuff. It created a thing which somehow was in me that you can do creative stuff; it is all about creativity.

It is hard to say that I would be here without their help because film-making to me is very therapeutic. I came from a war-torn country so doing films is creating something more than me. When I am doing the film, it is not about me; it is about who I can inspire. It is about the young children seeing the film. Maybe I can do something for them. That is the most important thing. That is my goal.

Also, there are not that many opportunities to develop young people in the community. There is community support but there is no funding involved in the arts. There are people who are sacrificing their lives to draw a picture that will take six months or whatever, and they love it. That is the most important when it comes to the end of their life. That is why they do what they do and that is why I do what I do - because I really love it.

The mental health side is highly important because when I create a film, it gives me confidence. It is not just saying that I can make something, but a confidence within me that says that somehow I have a voice. That voice can come out beautifully sometimes and I hope it does come out from me like that. Any art you create can also harm people but I hope that the art I create during my time here will not harm anyone but will inspire people.

More than anything, I think there are a lot of young people in Hobart that need places like Youth Art. If places like Youth Art could be put together in Hobart or in Tasmania, I think every child - your children or your grandchildren - would all benefit from it. Not only would they benefit individually, but you and I would benefit from it too. The whole community will benefit from it.

Ms MAGINNIS - I wanted to add too that the Youth Arts Activity Centre was a really good connection. A few years ago I was approached by the young people's diabetes educator from the hospital who was really concerned about young people not maintaining their diabetes treatment. When you get to that age, as teenagers, you get pulled in different directions and sometimes to have to maintain it is really important.

What we did was found out that some of those young people were really interested in photography, painting and drawing. The hospital had no facility for that so I linked them into what was the Youth ARC. I am not quite sure but I think that that group has still be using that facility ever since. It is really powerful because there is an opportunity for them to express themselves but also to be able to tell the young people with diabetes that you can still be a young person and take risks and do creative, exciting things and maintain your medication at the same time and stay well.

Mr VALENTINE - Perhaps it should be explained that Youth ARC is the Youth Activities Resource Centre that the Hobart City Council runs at the end of the City Hall.

Ms MAGINNIS - And it is not anywhere else in Tassie.

Mrs TAYLOR - Pulse?

Ms MAGINNIS - Yes, Pulse Youth Health Centre do a lot of creative things. The centre recently held the Red Carpet project where they took young filmmakers, dancers and singers to Moonah Arts Centre. It was great.

Ms BOYER - When people think about, for example, refugee health, they think about screening and all those assessment processes. However, they do not think about what Atok has talked about - the extension of that to mental wellbeing and those sorts of things. I think there are some really interesting things about changing the way people think about health so that creativity and arts, both as consumer and creator, are intrinsic to people's health outcomes.

Mr VALENTINE - Something Kickstart Arts works on.

Ms BOYER - Jamie has talked to you about that, hasn't she?

CHAIR - Kim, you mentioned that all the states and territories agreed to signing off on the framework. Are you aware of any other states dedicating resources to their programs?

Ms BOYER - I was at a session of the National Rural Health Conference last month in Darwin, and I think South Australia has gone a bit further from its arts portfolio than most of the other states. A dilemma is that a self-created institute of arts and health has set itself up in Melbourne, but it has no government relationships. In fact, it is desperately trying to divorce itself from government. My view, which is very conservative, is that if ministers sign-off on things, while they should not necessarily be the only people involved, the capacity for some planning in consultation with the arts and health communities in the broader sense is really important as part of implementation. My understanding is South Australia has gone a bit further than most of the rest of us.

CHAIR - Is it the arts or health ministers who have signed off?

Ms BOYER - Both.

CHAIR - So arts and health. It is a collaborative approach in all states.

Ms BOYER - Absolutely. As Jacquie said, Tasmania has had a lot of impact in the planning process. A terrific evidence base is attached to it, which is really helpful. I have been involved in Art Mix stuff for ages and I have never seen something as important as this which has gone through without any of that framework.

CHAIR - Is there any indication of its costing?

Ms BOYER - No.

CHAIR - If the committee thought it is a great idea, but there is no understanding at all of what the cost would be?

Ms BOYER - No. In my view it would need to start with a state-by-state strategic planning framework, which would then be appropriately costed and have resources dedicated to it, but the level of the resources is clearly up for discussion.

CHAIR - We have a lot of funding cuts at a federal level in the arts at the moment.

Ms BOYER - Absolutely. I do not think Senator Brandis is going to take it on his shoulders as part of his responsibilities.

CHAIR - No, I don't think so, not when he is coming out with straight ideas.

Ms O'CONNOR - Do you think it is possible that what is required here to implement the framework is not a huge amount of resources - it is having the coordinating capacity in place? If you think about culture in Tasmania - the artistic riches we have from a community level through to Dark Mofo, from the smallest to the very largest - isn't it about coordinating? Sometimes ministers get scared of cost.

Ms BOYER - I quite agree. I think the richness is already there. It is the linking of the two and the coordination of the two. You are totally right. From my perspective, to have a dedicated resource in both health and the arts, and a very small budget to facilitate in areas where there is nothing at the moment - to identify gaps and look at the strategic planning framework, some of which has already been done by arts - would be terrific. You are quite right, the infrastructure is often already there - the Theatre Royal has it, the Tasmanian Symphony Orchestra has it - most of the other organisations have it. It is about pulling them all together and filling the existing gaps.

Ms O'CONNOR - Has there been any communication with the health minister about taking it up at a ministerial level? Perhaps getting some key performance indicators and follow-up processes? Taking it back to the ministerial council for a bit more discussions?

Ms MAGINNIS - Not that I am aware of.

Ms BOYER - The issue that no-one is driving it. I certainly understand that the current Minister for the Arts, Vanessa, is extremely supportive of the process but there is no driving force. We need coordination and a driving force.

Ms O'CONNOR - Atok, I am interested in your state of mind before you started making films and art. You said before you might have headed down the wrong path if you had not been given the opportunity to let your creativity shine. How has that journey to being a filmmaker changed your state of mind?

Mr NIGOR - I think it has changed dramatically. It has made me more confident in myself, in what I do in life. I did not fit in before; I had no vision or passion. To be honest, it was one the worst moments you have - .you have no direction, it is like you're driving but you don't know where you are going. That has changed for me. I am going to North Sydney and I think having that purpose, and knowing where you are going, is very important. It has changed my mindset and made me more positive and stronger.

Ms MAGINNIS - I reiterate what Kim said: it would not actually be a lot about resources - it is much more about coordination. Having a coordinated approach also means it is possible to access funding outside of arts and health. There are philanthropic opportunities, but because we do not have a coordinated approach and a plan, these opportunities are much harder to get. We also need to train people. In Tasmania there is

no training whatsoever for artists who want to work in community art. That is appalling. If you have artists or musicians who want to work with people with Alzheimer's or work in rural communities and they do not have the skills, there is no way you can train them. Training is a huge issue and building an evidence base is also a very important issue. We do not do good evaluations.

Mr VALENTINE - Have you had collaboration between other groups, such as Kickstart Arts?

Ms BOYER - Yes, it is all part of that network.

Ms MAGINNIS - There are at least 500 people around the state connected through email and attending network gatherings.

Ms BOYER - Cassy's perspective is that leadership, ownership and coordination are the key issues. The energy is already bubbling.

Ms MAGINNIS - We also have lots of research grant cost-savings to government, which I did not mention. That has been happening around the world - there is good research that shows how it saves us money.

THE WITNESSES WITHDREW.

Mr MIKE BREWSTER AND **Mr LANCE STAPLETON**, TAS WATER, WERE CALLED, MADE THE STATUTORY DECLARATION AND WERE EXAMINED.

CHAIR - Thank you both for coming. Everything you say is recorded on *Hansard* and will form part of our public record and possibly part of our report. Everything you say is protected by parliamentary privilege while you are in front of the committee, but not if you speak to the media afterwards. If there is information you wanted to provide of a confidential nature, you could make that request to the committee and we could consider that request and make a decision on that. Otherwise it is all public.

Mr BREWSTER - A bit of context about where we are with drinking water quality. I have prepared six dot points. Then my view is we are here to answer questions so then we can move into that. I was working back through where we have come from and where we are at.

If you go back to 2009, since the commencement of the water corporations, prior to TasWater, and we have had three years of the water corporations and two years of TasWater, 48 towns have been identified as requiring major drinking water quality or supply issues to be resolved. That excludes fluoridation upgrades for major cities. I have targeted this a bit at the small towns.

Of those, 13 towns have received major upgrades that have resulted in potable drinking water solutions since the commencement of the corporations in 2009. There are 23 more towns with drinking water solutions underway right now. That will be completed in the next two years and there are two about to go to the board for approval.

That leaves us with 10 small towns in two year's time to be dealt with and they will have to be dealt with as a program and that is what we are doing at the moment. The reason for that is there are a small number of connections and the cost per connection is quite high to resolve the quality issue. Connection a 20 mil pipe that goes into the house.

To round out the picture, there are currently 26 towns subject to boiled water notices or public health alerts. By the end of the next regulatory period, that is June 2018, we will have a maximum of eight. Largely that eight is those small towns I talked about with high cost to resolve the water quality issues because of a very small number of connections.

CHAIR - On that point, we are talking about a very small number of connections. What are we talking about?

Mr BREWSTER - About 40 to 50, 20, ranging in that area. Once they reach about 100 the economics start to work. It is not a perfect rule of thumb but usually once you start to get down to 40 or so, and you need a major water treatment upgrade, it starts to become tricky.

Ms O'CONNOR - Mike, where does TasWater test water quality? At what point in the supply chain, to water in the tap, and what does it test for?

Mr BREWSTER - I might pass that on to Lance who is our product quality head.

Mr STAPLETON - We have designed monitoring programs around all of the drinking water systems that TasWater manages and we monitor the raw water and we monitor the reticulated water as a minimum. There are a range of programs. The main thing is with potable systems we monitor in the reticulation weekly, as a minimum, for ecoli, microbiological, and then there are other programs that come in quarterly for things like metals, pesticides, and things like that.

We are not monitoring for everything at every point all of the time but there is a program that has been put in place. That program has been designed around the principles of the Australian Drinking Water Guidelines and it is something that we keep going back to and fro with the Department of Health and Human Services for their endorsement. We would beef up a program if we had a particular concern so we could gather some more data to help with the solution or if we have a particular issue. There is a base line program and then it varies up above the program depending on the issues of that town.

Ms O'CONNOR - Where in the flow of water does TasWater test? Does it tests at the point of supply to the household?

Mr STAPLETON - We cannot test every household so we pick representative points within the network. There is a bit of a methodology about that, which is bit tedious to explain, for picking a representative point within a supply zone. We establish those for every supply zone for every system to get a really big program. That is in the reticulated side. That should be representative of what people are receiving. We also do other testing in the raw water and other parts of the network.

Ms O'CONNOR - Is there anywhere in the upper catchments or in mid-catchments that TasWater tests for pesticides? Mike was in budget Estimates last week when we were having this discussion. The Department of Primary Industries, Parks, Water and Environment was to regularly test at 51 sites in the state and that testing regime has ceased. It is moving to a risk-based regime but at the moment there is no regular testing. Where in the catchments is TasWater able to monitor?

Mr STAPLETON - Pretty much at the point of where we extract the water; that is where we would monitor for things like that. If we had a particular concern, we may do an investigation. You get problems with going onto people's properties. Generally, when we do an investigation, it can be quite awkward sometimes. We used to work closely with DPIPWE on those matters and receiving that data they used to generate. At the moment, that main program is about a rural water program at our point of extraction.

Ms O'CONNOR - How often would you test for pesticide contamination or concentration of any sort?

Mr STAPLETON - We have gone from a whole lot of regimes from the three corporations now to more standard regimes. The standard is quarterly but that can vary from site to site.

Ms O'CONNOR - It could be once a year, twice a year or once every three months?

Mr STAPLETON - The standard is now quarterly. With some of our historical testing from the three different regional corporations, not necessarily quarterly but the minimum is annually, now it is looking at the quarterly rural program as quarterly pesticides levels. Where with think there is a risk or an issue, we may beef that up, depending on what we find.

CHAIR - On that point, at a time when farmers have been out fertilising their paddocks and there was a major rain event and someone was concerned about the water going into the river or creek and it ends up in the drinking water system, do you respond to that sort of concern or is that more of a DPIPWE problem?

Mr BREWSTER - Where we tend to have issues, in my experience here, we sometimes get calls and Deloraine is a classic example where people have phoned and it is mostly about the taste of the water. Then the difficulty we have is, we then start working our way up the river and it is not always obvious. Ultimately, most of these things come down to providing a solution at the plant. If you think about the recent Hobart water geosmin and methylisoborneol - MIB - issues we had, the problem was solved by applying carbon at the plant. That is usually where we land.

As to pesticides et cetera, if someone phoned, we would follow it up but we know anyway because Blanche gets the data. If they come into our call centre, we respond to every call. How we respond there depends on the nature of it.

Mr GAFFNEY - The Ombudsman said that in 2012-13 there were 182 complaints against TasWater and that has improved in 2014-15 when there were only 60 complaints. What are the majority of those complaints about with TasWater? Is it to do with water quality or sewage, or is it to do with issue handling?

Mr BREWSTER - Most of them are about billing. Most of them are associated with the complexity of the pricing. People will say, 'Hang on a minute, you have published a target tariff that says, my price usually falls on [inaudible] target tariff, I should be paying $400 and I am paying $800, can you explain that to me?' Then you start the concept of AAV and how it is all being wound down and it gets very complex very quickly.

Odour in sewage treatment plants, odour releases, have been another problem and we track them independently and individually now. When we get an upset in the plant that often occurs as a result of trade waste. If someone puts trade waste down that the biology of the plant cannot cope with, then we get a smell for weeks. That is an issue.

We do not see a lot of water quality issues because mostly they know. This year is exceptional because we had the water quality complaints associated with what I discussed earlier, the geosmin and MIB in Hobart, so it gives it that earthy taste. When you are not getting that, it tends to be billing and odour from sewage treatment plants.

Mr GAFFNEY - We hear sometimes in the paper about water quality at certain towns and other places. You have mentioned how you worked on that program. Has TasWater in its current form, or when you were the four corporations, been into a town or a water supply and undertaken similar work, and then that work has not been satisfactory? The complaints I am hearing now, I think those complaints were around 10, 15, 20 years ago

when it was owned by councils. You often get that it should go back to councils because they can do it better. If they were doing it better, we probably would not be in the situation we are in at the moment. Sometimes I get concerned that TasWater bears the brunt of a smaller community now wanting first-rate water, which they deserve, but they do not pay enough. They pay cheap prices for being there in the first place, and so they cannot expect the same quality of water, I do not think.

Mr BREWSTER - I think the way the act is set up and certainly the regulatory framework underneath it, first of all, it is now postage-stamp pricing, and the future variability will be in the service levels, the time it takes to respond to an issue. That is just the way the pricing works. You are absolutely right. What has happened is, most of the towns are largely either being dealt with or have been dealt with. The solutions that we put in - I cannot think of any, but there might be some. There are always things you have to go back to, post-commissioning, to fix.

I cannot think of any water treatment solutions that have been a fundamental failure. Probably the only one we would have to go back with, which is an inherited system, is at Scamander. That was handed over partway through.

If you go to what the real challenge is, which is I think where your question is going, we will get more complaints and more challenges around these small towns, the last of the small towns. When you start to get up to $40 000, $50 000 or $80 000 per connection, it is hard to justify fixing those. Obviously when people in small towns see towns 20 kilometres away getting treated, fully compliant water and they are not, that creates an issue. That is our main focus now. When I look at our program, as I laid out earlier, we have basically a solution underway for nearly all of them.

These last 10 will be tough because that question you raise about what happens when it almost becomes unaffordable will be the noise. We have to get better at service replacement, which is the tank replacement. There are some learnings from our recent Pioneer experience.

Ms O'CONNOR - Why did that take so long, Mike, two and a half years?

Mr BREWSTER - It was probably some decisions I made, to be frank. October 2013 was my recollection of when the business case was approved. We were proceeding through that. I could not give you the date off the top of my head, but maybe eight months in.

Can I just go back to give you some context. When you are doing this, it is not like you have a design - you can have a globo[?] design. You have to get at every house. You have to assess every roof. You have to assess their consumption. You have to assess the state of the plumbing et cetera. Then you have to do an individual design for each house. Then you have to get them to enter into a contract. That in itself has been challenging, because if they are not prepared to enter into a contract, you cannot do anything.

That is part of it. The second element of it are the decisions I made. We got into it. Prior to actually starting to roll out the tanks, I went to a meeting in the north-east at another town, another community meeting, and concerns were raised with regard to the amount of rainfall and the capacity - the number of refills. I gave my word that I would go back and look at this and go through the business case again. I went through it and I

had some concerns, so I put the program on hold for a period until I could have those concerns addressed.

Ms O'CONNOR - Does that sort of decision-making go to a management group or to a board, or is it ultimately left on your shoulders?

Mr BREWSTER - I would inform the board in that case, which I did.

Ms O'CONNOR - What kind of engagement did you have with your senior advisory team or your management team about making that decision that you knew would have an effect on the people in Pioneer?

Mr BREWSTER - What I would normally do is come back having had that and I will say, 'Can you bring a briefing note together to brief me on the whole thing to convince we have not missed anything', which they did. Then I raise a whole bunch of questions, which is typical of an engineer, and when I got the questions back I asked them to do more work. That is typically how it plays out. So they do more work and we start working our way through it.

At the end of the day it is complicated because you are talking about average rainfalls as opposed to worse-case, least-case. You have to look at every roof, as I said. You have to understand how much water you are going to get into the tank from that roof and what can be done if you expanded it. Does it make a difference? You have to make an assessment about the cost of delivery of the water, so I wanted all that in my head. They will then normally present me with a response. I will evaluate that and then I made the call that, once they had got through all of that, to put it back into the process because at that stage we hadn't started construction.

If I wanted to make a change I couldn't make a change on my own. That has to go to the board, so if I were to say, 'I recommend a different solution', that would have to go to the board. In the end it didn't but the problem I faced was at that same time we were forming TasWater - it was our first year in - and we are trying to build a single delivery program. The problem is when you take a project out as well you have to get it back into the machine. So we lost some more time there. Those things were clearly choices that I made and I have been up-front with the community about that.

Ms O'CONNOR - That is refreshing, by the way.

Mr BREWSTER - It is equally a function of the number of contracts. I would have to check but what do we have at the moment, Lance? How many have signed up at the moment?

Mr STAPLETON - Nine contracts in place.

CHAIR - How many properties altogether?

Mr STAPLETON - 43.

Mr BREWSTER - Part of the issue there is to be fair. Probably some of you would know I went there the other night. Some of it is about them being a little uncomfortable with irrigation supply and what that means for them. The reason that matters is because it all

comes back to the rainfall or the water demand and how many refills they have to make. I went along to the community, as did Lance, who did a great job. We took it on board and said, 'Okay, we'll go back and see if there is anything we have missed in your irrigation supply'. Hopefully that will get a solution that works for them and we will get them all signed up and then we have sensible solution for any further towns. Bear in mind that this was our first major town, so there has been some good learning for us.

CHAIR - The first major small town.

Mr BREWSTER - Yes, the first major small town for service replacement. We did do Mountain River down here. The southern corporation took a different approach and that is yet to be proven as well. There will be learnings, we will stand back. There will be, not so much more consultation next time but the other learning for us in this is to make sure you have done all your homework up-front. Make sure everyone knows what the price is going to be before you go down there and then make sure you have looked at the options and take them through the options. So there are some good learnings for us.

CHAIR - In a case like that where the cost is not insignificant by the nature of the small community, people might say, 'I'm not going to go with you. I'm going to do my own thing, thanks', and you have houses that are reasonably close together and one is in, one is out, one is in, one is out, does that create a separate bunch of challenges as well?

Mr BREWSTER - Absolutely. This has been one of our biggest challenges, because we cannot - we think we have a better solution through this next price and service plan. But we cannot actually take the town off the boil-water notice or the public health alert until we have basically got everyone disconnected from the system. We cannot do that unless we have got the approval of the regulator as well.

We have been working with the economic regulator to get a much better solution. I can see a way through that. Ultimately it is not a solution that people are not having a tank and still sitting there with water that is unsuitable for drinking. We need to address that. I think with the regulator I can see a way through it now, which I probably could not have when I started.

Mr VALENTINE - With regard to your testing, do you do this particularly during bad weather events? That is when you are going to get a lot of animal faeces and those sort of things coming down into the water supply. How do you cater for bad weather?

Mr STAPLETON - It depends on the system. Really where we are heading to in the future is going to be potable supplies or potentially service replacement solutions. Potable supplies are either really well-managed catchments or fully treated water. Where you have a really well-managed catchment, like Lake Fenton, you will have a sampling program that is both regular and that will have an event base, which is what you are talking about, in there as well.

Where you have a treatment plant, we will design that treatment plant to suit the raw water on worst case scenarios. There will be instrumentation in that plant, like we have at Rhyndaston, that will pick up a lot of this water quality stuff. So you do not have to have people with jars scooping water samples and sending them off to the lab every time it rains. Where we think we have a particular problem or are seeing a particular issue,

you can have an inline piece of instrumentation that might pick up an indication, and then somebody will take a sample. We cover the event-based sampling and how to monitor for events and capture the data. It is different in different places, depending on what technology we have got, depending on what the treatment is, and what the risk is in the catchment. It is a bit complicated, I am sorry. It is not a simple answer.

Mr VALENTINE - That is okay. It is good to hear that. With regard to your [inaudible] reservoirs, are there any of those left uncovered at this point in time, or are they all covered?

Mr BREWSTER - Colebrook is uncovered . We are putting in planning to have that fixed. Rosebery is the last.

Mr STAPELTON - There is a couple we do not use very often. The debate is whether we need them at all as reservoirs [inaudible] at Strahan. There is really only a handful left. I would not want to quote a number, but it would be less than five.

Mr BREWSTER - We have a reservoir roofing program which is basically just closing them all out. But as you say, the decision sometimes is actually do we need the reservoir? So before we go putting a roof on, we have to make the call.

Mr VALENTINE - How often do you use it?

Mr BREWSTER - Yes. We are down to a handful. I would be surprised if it is more than four or five.

Mr VALENTINE - Tas Irrigation obviously do a heck of a lot of analysis as well, I presume, from what they were telling us on another occasion. How much do you liaise with them in terms of testing regimes? Do you cover or change your regime according to whatever their tests are revealing coming down the streams?

Mr STAPLETON - We collaborate and share data with them as and if required.

Mr VALENTINE - There is no doubling up?

Mr STAPELTON - There could be in some cases some doubling up, but I would prefer to say, 'Look, we will take responsibility for our program,' and then not be, shall we say, compromising public health or carrying a risk in relying on somebody else. When you design a monitoring program, you are generally designing it for a specific purpose. So Tas Irrigation's purpose is for irrigation water, and our purpose is drinking water. Our regime is going to be a lot more than theirs. I am talking to Tas Irrigation about some algal monitoring programs. That is the sort of space in which we can collaborate quite well. We have discussions on now about how we can collaborate on a program like that.

Mr VALENTINE - If they are picking up pesticides in the water further upstream, is there something in place where they have to notify you of this and the potential impact on your sources?

Mr STAPLETON - No, I don't think there is anything specific. You would have to talk to Tas Irrigation about their testing regime and whether they are testing for pesticides or not. I could not answer that. We test for pesticides and we make sure we cover our risk.

Mr BREWSTER - That is the critical. At the end of the day, the issue for us comes down to a very serious responsibility for public health - the board and the CEO - and I do not mind if I have to check it twice. I want to be certain. The first time you make someone sick it is a major issue. I would say that we work closely with TI; we have a good relationship with them. One of our most recent solutions at Ringarooma involves drawing water from them. So where we can share resources, we do. The pipeline for the south-east irrigation scheme stage three - we supplied the water for that. We cut a deal. One of the things that Chris, the CEO, and I agreed on is that wherever we can, we are going to look for opportunities to avoid duplication of investment - and we do. I think the relationship between the two businesses is pretty solid.

Ms WHITE - I wanted to go to your earlier comments. You said when the corporation first came into being, there were 28 towns that had been identified.

Mr BREWSTER - 48.

Ms WHITE - Sorry, 48 needed water quality improvements; 13 had received the upgrades and there are 23 to be completed in the next two years. There has been a lot of talk through the media about the costs involved for a lot of the upgrades for your organisation, both for sewerage and water, but from a public health perspective for those 23 towns that need to have their potable water improved, does the corporation have the funds to deliver on those improvements in two years or are you looking to other sources of revenue to achieve that?

Mr BREWSTER - The water is completely covered in our capital program. We have a three-year $110 million per year capital program that has been approved by the regulator. The challenge for us, and I am not sure you would want to go there, is in major rationalisation of sewerage treatments plants and increases to the licences because we do not know what they will be on sewerage treatment plants and condition assessment outcomes on sewerage. It is all about sewerage.

Ms WHITE - We probably do not need to go there as a committee. I was more interested in potable water.

Mr BREWSTER - I will be really clear here, there are 48 towns with major drinking water issues. For nearly every town, we will have been in there and had to do something in the last few years. I can guarantee it.

Ms WHITE - So it is $110 million a year for the next three years you will be spending to improve drinking water?

Mr BREWSTER - Drinking water and sewerage. In the past, or up until this year I would say, it has really been about drinking water. That has been the focus and why is that? It is the public health issue. You might get a bit sick from the sewerage and it is a bit unpleasant to see it running down the street but you are not going to die. However, if you get your drinking water wrong, you poison people. I think rightly the former corporations and the regulators focused on water. You can hopefully see from what we are saying here that we are coming out the back end of that and now we need to address the state's sewerage infrastructure.

The other big issue we are dealing with is the number of dams we have. We are the biggest dam owner now in the state with over 300; about 120 of those that are major dams. We have got a whole bunch of sewerage lagoons that are now treated as dams. We have got a major program to go round and upgrade our dams and that will go on for another 10 years as well.

Ms WHITE - I have one other question, then. I was curious to understand a bit of your fluoridation program and how you determine what percentage of fluoride you put in the water - not what percentage but you understand what I mean. The kind of mix that you come to for working that out and are there particular guidelines that you work on. Could you just update the committee simply because we have had some evidence previously from people about fluoride in water so we are keen to understand what your program is.

Mr STAPLETON - We are legally required under the Fluoridation Act to fluoridate water under direction from the minister. If people ring up and say, 'Why are you putting fluoride in the water?', I say, 'I can't not'.

We have got a target dose of one part per million and the operating range is between .8 and 1.2 parts per million. There is even some variation within that range, but the target dose is one part per million and that is set for us by the Department of Health and Human Services.

There are fluoridation regulations. There is a set of guidelines - the Fluoridation Code of Practice. It is still draft and I think it is going to have to go back. I am not quite sure whether it needs to go before Parliament or there is some other instrument that needs to go before Parliament to give it force. We now work with Health and adopt those guidelines for how we are going to run these fluoridation systems. Even though the code of practice guidelines have not been given legal force yet, we have started our audits. We are auditing all of our 39 fluoride stations against the code of practice and we are going to keep going with those audits, identifying any deficiencies and then we will invest to pick those deficiencies up.

It is fairly well regulated and we work very closely with Health to make sure that people are getting an adequate dose and not getting an overdose on fluoride.

Mr VALENTINE - Is it the same with chlorine?

Mr STAPLETON - No. Fluoride has its own act and its own regulations. It is very specific, given some of the health concern around fluoride. Chlorination is about disinfection. We use the principles in the Australian Drinking Water Guidelines around chlorination. Where we see we are not getting adequate chlorination in certain systems, we will put projects in place to bring that up.

Ms WHITE - Are there any other ways that you treat the water to ensure that it is safe to drink?

Mr STAPLETON - Depending on the particular risk that is in the catchment, there are a whole lot of different processes that we would use. Your general water treatment plant will have some form of filtration followed by chlorination as a minimum. Then within

that bubbler filtration there are dozens of different technologies and different process units and different things you can use. If there are other risks in the catchment, we can use carbon to get rid of taste and odour like we are doing in Hobart, and things like that.

Mr VALENTINE - UV?

Mr STAPLETON - Yes, or ozone. That is why when we are looking at drinking water risk we would look at the data we have got, we would look at the risk in the catchment and then we would design something accordingly to help manage that risk.

Mr GAFFNEY - Even though we are talking mainly about water quality, the week after Southern Water took over from Hobart Water - it was about a month after that - we had the Salamanca incident. Hobart Water was probably the most financial of all the water corporations across the state and yet that highlighted the difficulties it has with aging infrastructure and how to balance that.

There has been a lot of changing environmental guidelines though and it seemed to me that when the water corporations are replaced, suddenly there were EPNs being placed left, right and centre where they hadn't been from the EPA. You just mentioned changing guidelines to drinking water quality. Does that impact on the Burnie water and sewerage plant that was supposed to be five-star. Within about two years it was behind and underneath the expectations of the environmental guidelines. With the new water guidelines, does that mean you have to go back to a lot of the places where you have put in work, thinking you were doing first rate work, and then upgrade again? Is there a cost factor to that with water quality?

Mr STAPLETON - Just to differentiate between drinking water quality and waste water - with drinking water quality there is the Tasmanian Drinking Water Guidelines, maybe minor changes, but they have not changed a lot. They call up the Australian Drinking Water Guidelines, which are always being updated as better science comes to hand, but there is not a huge amount of change. There is a bit of shift, but with drinking water it is not as if there have been goal posts moving all over the place.

Mr GAFFNEY - It is not a cost impost?

Mr STAPLETON - Not necessary in drinking water. The standards are well understood. Partly why the drinking water program that Mike was talking about, is on the rails now and running really well, is that the goal posts are clear and have been for a while.

In wastewater the EPA has established a process. They issue an EPM, Environmental Protection Notice, which says go out and study the environment, and from that study come back to us and we will derive individual discharge limits for that plant discharging into that environment with the intention that those limits will be able to protect that environment. That process is rolling now. They issue an EPN, we start our own ambient monitoring programs, finish that, come back with a discharge management plan and get that approved or not. Then we know what we need to do for that treatment plant for that environment. It is a good process, but it takes time.

You end up with evidence-based decision making in that that is what you need for that environment. Drinking water is a bit easier in that we have the Australian Drinking Water Guidelines that give us the targets for humans everywhere.

Mr BREWSTER - Mike, the reality of it is like this: when you look at the wastewater infrastructure, I do not think anyone knew what the cost was going to be at the outset. You have to go through every plant. We have a bit over 100 sewerage treatment plants, so we have to do a condition assessment on every plant. We are working our way through it. Until you have done the condition assessment, you do not know what the cost is going to be. Then you have to undertake the ambient monitoring studies, and until you have done that and completed the EPN, you do not know what the cost is going to be.

We have identified approximately $640 million backlog in renewals, so plant assets that should have been renewed over the last 30 years that have not been. If you put all that together and then the major rationalisations - do we rationalise Hobart sewerage, Launceston, Launceston combined system - it is a big amount of money.

Mr VALENTINE - The Salamanca issue with the stormwater incursion was a rather major infrastructure, wasn't it?

Mr BREWSTER - It was before my time. Lance might know about it.

Mr STAPLETON - I am not super familiar with it.

Mr VALENTINE - It was illegal stormwater incursions and that is where the problem came from. It was not so much the ageing.

Mr BREWSTER - That is a major problem statewide. Stormwater incursion or inflow and infiltration is a major problem for us and this probably is a public health issue for you - in the area of shellfish. When you have heavy rain it overloads the system - if you take Cambridge for example - and the system cannot cope and you have a portion of the load going around the plant, gives disinfection, goes into the bay and we have a shutdown. That is an issue around the state for us that we are working through. If we built every plant for the maximum possible rainfall no one could ever afford it.

CHAIR - Gold-plated infrastructure, we call it.

Mr BREWSTER - Exactly. Part of our program at the moment, to address that health issue, identifying where this water is coming in and stop it. That is another major project we have underway.

Ms O'CONNOR - You were talking before about the water quality testing, so the monitoring for a range of water quality indicators, and one is the level of pesticide chemical contamination of supply. Can you tell the committee what sort of pesticides or chemicals have been detected, and I am not talking about in regional Australia Drinking Water Guidelines, but what trace chemicals are being found in our water supplies at the point of TasWater's testing?

Mr STAPLETON - We have not detected anything above the Australian Drinking Water Guidelines in the case of pesticides.

Ms O'CONNOR - Has Dr Alison Bleaney communicated with TasWater at all?

Mr STAPLETON - Not for a while.

None of them are above the health guidelines, but we don't like seeing traces either. MCPA is one we see a bit of.

Ms O'CONNOR - Is that particularly in the north-west that it's picked up, or the north-east?

Mr STAPLETON - Not everywhere, not every single system, but we have seen it at Longford. We have seen Metalaxyl, which is a fungicide, and we have seen low levels of glyphosate, which is Roundup.

Ms O'CONNOR - So none of the triazine chemicals recently?

Mr STAPLETON - I haven't seen a triazine for a while. We did see some 2,4-D in one system.

Ms O'CONNOR - Which system was that, Lance? When a trace comes back that shows a level of pesticide contamination, does TasWater go back to DPIPWE and talk to them about what might be happening in the upper catchment?

Mr STAPLETON - We used to when they had their program.

Ms O'CONNOR - When did that level of communication stop?

Mr STAPLETON - Probably when the Spray Information Referral Unit ceased. We work with the Department of Health and Human Services.

Ms O'CONNOR - So last August or September maybe?

Mr STAPLETON - You're stretching my memory, but probably.

Ms O'CONNOR - What is the level of communication now, if any, with DPIPWE?

Mr STAPLETON - On pesticides, it is not what it was. Our primary responsibility is public health, so first of all we go to the Department of Health and Human Services and say, 'We've had a trace'. If we had a trace detection, we would put some carbon in. Carbon is great at mopping up things such as pesticides as well as taste and odours. Then we would do some re-testing and show it is clear. Every time we get a trace we investigate and do something about it until we get a clear result.

Ms O'CONNOR - From an independent water scientist's point of view, do you think it is desirable to have upper catchment testing done on a consistent and routine basis so you have baselines and also monitoring regularly enough to detect contamination events? Do you miss DPIPWE?

Mr BREWSTER - Lance is here representing TasWater and I think you would be better off getting independent views on that.

Ms O'CONNOR - I thought you were independent.

Mr BREWSTER - It is an issue when it is raised, but there hasn't been anything above health limits. We liaise with Health. That is a matter for Government to decide whether they want to reinstate a unit at DPIPWE. It is not for us to give an opinion on whether that is appropriate.

Ms O'CONNOR - Only on water quality grounds, I thought you might, because it is a public health issue.

Mr BREWSTER - On water quality grounds we liaise with the Department of Health and Human Services. If we thought there was a major issue, we are obliged to deal with it.

CHAIR - It is right to do with public health and it is a public health issue, and you may not be able to answer this, but say there was pesticide or lead or an element you were concerned about and you rightly raised it with Health, do you know if Health then works with DPIPWE or someone within that department to see where it might be coming from? Do you know where it goes from Health?

Mr BREWSTER - I don't know the answer to that.

Mr BARNETT - Some of these questions appear to be going to operational matters of other government departments which are separate to TasWater.

CHAIR - That is why I said you may not be able to answer this and that is all I have asked for.

Mr STAPLETON - Our concern is 100 per cent for our customers. If we receive issues, we are going to take the actions required to protect our customers.

Mr BREWSTER - We have done. I have asked the team and with Deloraine, we have gone way beyond our jurisdiction when we have had problems with the taste and odour. I put resources to go up the rivers ourselves to interview customers. We are not going to handball it, to be frank.

Ms O'CONNOR - No-one is suggesting that.

Mr BREWSTER - I know you are not. I have also been around long enough to understand how these things work. We will follow up when there is an issue. Our corporation will not let it go if there is a serious issue and we are not satisfied. I have an obligation as CEO as our board does.

CHAIR - We are out of time. Do you want to make any closing comments from your view of the public health and preventative health issues in water quality or do you think you have covered it adequately?

Mr BREWSTER - Our job was to respond as we have tried to do.

CHAIR - Thank you very much for your time.

THE WITNESS WITHDREW.

Mr SIMON OVERLAND, SECRETARY, **Ms MARY MASSINA,** EXECUTIVE CHAIR, PLANNING REFORM TASKFORCE, DEPARTMENT OF JUSTICE, WERE CALLED, MADE THE STATUTORY DECLARATION AND WERE EXAMINED.

CHAIR - Welcome. You both understand how committees work. I do not need to go into parliamentary privilege. Thank you for accepting our invitation

One of the reasons we have asked you to come is that many of our witnesses, in focusing on preventative health, have made it clear that access to healthy places to live is a really important aspect of health and wellbeing. A number of them have suggested that so much of this comes back to planning of your town and city and any redevelopments that are going on.

The committee is particularly interested to hear, from you, Mary, as heading up the planning task force, about what consideration has been given in that process to health and the preventative health aspect. We have an opportunity to make a difference and to change the way things have been done and are done.

We are not asking you to pre-empt the finding of the task force but we are asking what consideration has been given to these and members have other questions. It might be helpful if you could describe what your role is and, Simon, you might want to say what your role is in this and give some background, overarching comments, in line with the terms of reference.

Ms MASSINA - I am currently the Executive Chair of the Planning Reform Task Force. The Planning Reform Task Force was announced in May last year with its primary focus, from May until December last year, to be on providing advice to the Minister for Planning and Local Government on the structure of the Tasmanian Planning Scheme which is the single statewide planning scheme. The minister, in consultation and discussions with Justice and the taskforce, announced that structure in March this year in Parliament. He spoke about what is now called the Tasmanian Planning Scheme. The remit of the taskforce has changed accordingly in line with that announcement, and so the taskforce is now the steering committee for the drafting of the state planning provisions of the Tasmanian Planning Scheme.

In a nutshell, the Tasmanian Planning Scheme comprises of two components, the state planning provisions which cover the zones and the codes, and local planning provisions. Importantly, these are owned by local government and cover the zone maps, the overlays, maps, and particular purpose zones and specific area plans. With that in mind, we look at the terms of reference number 3, which is the structural reforms that may be required to promote and facilitate the integration of a preventative approach to health and wellbeing. Leaving aside the issue of funding models, because that is outside our agreement.

The idea of what makes a liveable community, from the taskforce's perspective is second nature. It was really interesting going back over the submissions and the Heart Foundation's Healthy by Design document, because I remember that quite vividly when it came out in 2009-10. A lot of what they talk about in terms of making sure we have integration of infrastructure and land use planning, is what is behind the thinking of the taskforce.

It really is important that we maximise existing infrastructure, that we provide the tools for local government to signal where they want growth to occur. But also, importantly from a community's perspective, that they have an understanding about how their communities are going to grow through the application of the zones by local government. There is no intention, from the taskforce's position, to provide advice to the minister that would see any backing away from the policies that are set around public open space.

That is an understood and agreed position. It should be reiterated. The minister has been very clear that we are to keep what is good, and to improve what is not working. A lot of the elements that make for sensible planning and we see no reason to move away from it, and we underpin it. Maybe some of the conversation we can have will come out through the questions that the committee have.

Mr OVERLAND - The department has been home for the Tasmanian Planning Commission for the last number of years. The planning commission, until this point, has had a responsibility both for its statutory role and policy development.

Over the course of the last 18 months or so, that has started to shift. In the Budget this year, the shift has been complete because the Government has invested some more money into the department to re-establish policy function within the department proper. That has been the de facto situation for about the last 18 months where I have had some resources that are partly my own, and partly resources I have managed to borrow from other parts of the bureaucracy, to focus on the policy aspects of planning.

That will transition wholly and solely from 1 July when we have a new policy unit within the department. As part of the reforms that are underway, that Mary has outlined, there is also other work going on. The Government has indicated it sees a bit of a gap in the planning scheme in planning policy. There are state policies. There is a state policy act that is the responsibility of the Premier. A number of state policies exist. It is fair to say there have been varying views about the success of state policies. It seems to the Government that there is a gap at the moment around what might be better described as state planning policies. Not state policies in the sense that has been understood, but a new beast called a state planning policy.

The Productivity Commission reported on the review of planning performance across Australia. In its report, the commission identified a gap in exactly the space where there is not a strong connection between government policy and outcomes delivered through its planning system.

Ultimately it gets earthed through the work Mary is doing, through the development of zones and codes and the way it is spatially mapped. But you need good strategy to inform the way that is rolled out on the ground. Attempts have been made to do that through the development of regional land use strategies. Three of those are in existence; they were developed as part of the interim planning scheme process, and to help inform that process, but even they are arguably deficient in that they reflect a bit of a ground-up view around the way this should work. What needs to happen here is a bit more top-down direction from government in terms of delivering policy intent.

The state planning policies are intended to be a vehicle to do that. They are policy-neutral in the sense that they are not intended to achieve any particular outcomes other than outcomes that government determines are important to it in terms of how it wants to see the land planning system actually work. That is a work-in-progress. It is intended to get through this process first and then to move on to develop state planning policies.

The preliminary work on that has started, but, on the current time frame, draft planning policies will start to be put into the public domain in the middle of next year. Obviously a robust public consultation process needs to happen around those state planning policies. I cannot even tell you at this point exactly what areas will be covered because the decision is yet to be made, but if you look at other states where a similar sort of focus is starting to happen, you would expect there to be a policy on settlement, for instance. That is a standard one you would see, and it is reasonably commonsense - where do we actually want major areas of settlement?

CHAIR - Do you envisage these policies being developed through the taskforce or more in your department? What weight will they have?

Mr OVERLAND - No. They are more things that will be developed within the bureaucracy. My department is not well placed to develop some of these. For instance, the other area in which we might see a state planning policy is infrastructure and transport corridors. We do not have the expertise to do that. You would expect that to be done somewhere else, but it can be given effect in the planning system through a state planning policy.

My department is also developing legislation, which will shortly be released for public consultation before coming to parliament later this year, that will create a legislative instrument or mechanism to allow the state planning policy to be put into place. They will not be self-executing in the sense that they will not operate within the planning scheme, but they will help inform the way the planning scheme gets implemented, primarily the way in which zones and codes are applied. As I said, it is a policy-neutral framework so depending on the bent of a particular government, these things can deliver on or drive government intent down through the land planning system.

CHAIR - Do you envisage them being a state planning policy that will be a legislative instrument?

Mr OVERLAND - No, it would be a little like a planning directive. Operate a little like a planning directive does now.

CHAIR - In reviewing the planning scheme and things that are good or not so good, and all of that, have you had any direct involvement or engagement with public health, previously population health, to get input into how best to achieve healthy outcomes in planning decisions?

Ms MASSINA - The agreement we have through the interdepartmental committee, which looks at state policies, is that when we have completed a draft of work, we take it through to the IDC with the understanding that we use that as the management system to access various parts of government, including the departments of education and health. Before actually starting the drafting, we have quite a long and extensive conversation with, say,

the Heart Foundation and the Premier's Physical Activity Council. They were very clear about some of the key issues they wanted us to consider.

Obviously, with the linkages through the community sector consultative groups, such as Tasmanian Council of Social Service and Shelter, we have a way to access, from the community sector's perspective, some of key items they wish to see facilitated through the planning scheme.

CHAIR - Did input from those non-government organisations rather than government departments inform the work you are doing -

Ms MASSINA - 'Are informing' - we are not by any stretch of the imagination complete.

CHAIR - Yes.

Ms MASSINA - The consultative process for the drafting of the state planning provisions is an iterative approach. For example, looking at the cluster of residential signs, of which there are quite a few, we look at the zones and at providing some level of consistency. There is no consistency currently. Then we go through the planning technical reference group for technical advice in terms of drafting, and then we take it through the consultative groups.

Mr OVERLAND - I think the opportunity to get the sort of connection you are talking about really exists more when you get to the point of developing the state planning policies. I think Mary's work is very significant, but it is much more about getting a standard set of rules to apply across the state -

Ms O'CONNOR - Which are much more mechanical -

Mr OVERLAND - Which are much more mechanical. They are, absolutely.

CHAIR - Obviously they need policy settings to guide it.

Mr OVERLAND. Correct. You could argue that it would be better to do the policy settings first and then go through that exercise. There might be some force in that argument. But the way these things tend to work is we never seem to get things in exactly the right order. One benefit of Mary's work is that we will actually get consistency across the state. I think there are enormous benefits in that.

The policy drive really needs to be developed, which will happen through the state planning process and then through revisiting things like regional land-use strategies. Again, the state planning policy should very much inform the regional strategies, which will then inform the way the scheme is actually implemented on the ground.

CHAIR - I follow up on your point because it is very valid. Mary's taskforce is basically making the nuts-and-bolts rules. However, that is happening in a policy void, in a way, because we still have not got an overarching policy that addresses things like the health and wellbeing of people who live in these areas for whom we are making the planning rules.

Mr OVERLAND - We have bits and pieces of policy, so it is not a total void. We have a policy on prime agricultural land, for example, which is a very important policy. We have a lot of direction around environmental issues. It is not a complete void.

CHAIR - You talked about an overarching policy to give guidance to the whole framework. That seems to be lacking.

Mr OVERLAND - I think it can be improved. That has been recognised by the fact that the Government has clearly indicated that it wants to develop these things called state planning policies. Having developed those, I think the intention is to go back and look at state policies and see what additional work might need to be done there. The state policy has had a broader effect across the whole resource management spectrum, whereas we are talking very much about the land use development system and associated development applications that sit within that. It is a niche within that broader resource management framework.

Ms MASSINA - To underscore what Simon is saying, I think what is occurring at the moment is something that is fairly new. What we have is a whole-of-Government way of managing some of these key issues through the IDC. We have a number of key government agencies focussed on addressing issues or items that have been gaps in the planning system, and that have not been addressed in virtually a decade. Then we have got the ability to draw in a number of key strategic stakeholders in terms of having the conversation at the same time.

Both the external and the internal stakeholders are fairly clear about what needs to be fixed. For the first time in quite a significant period, we are all very clear about what needs to be filled. There is quite a good partnership approach in dealing with it.

Ms O'CONNOR - Just to be clear, the interdepartmental committee, does that have people on it from the Department of Health and Human Services so you can have that input on public health? Does it have input from the Climate Change Office - and education?

Mr OVERLAND - No, the IDC at the moment is constituted is chaired by the Secretary of Premier and Cabinet. The secretariat resource sits within my department. The members are myself, the Secretary of State Growth, and the Secretary of DPIPWE. We will reach out to other government departments as we need to, but the core of the work actually sits within those agencies.

Ms O'CONNOR - I would argue that you should have Health and Human Services at the table if you want to embed liveability principles into your planning reforms. Anyway, that is an area that can take on -

Mr OVERLAND - He has got a lot of other things to be doing, and we have made a decision that the representation needs to be at the secretary level because we want to make sure it has got the right level of focus and drive across the bureaucracy. That is the trade-off.

Ms O'CONNOR - What are the available instruments - I do not think it is the interim planning scheme or the statewide planning scheme process - to embed liveable design, green spaces, and healthy spaces into planning policy? Is it the state planning policy

process? Has there been any discussion about having a State Planning Policy that deals with spaces in a liveability context?

Mr OVERLAND - That is the work that the state planning policies are intended to do now. Whether it actually extends to exactly what you have described or not, I cannot say because essentially they are policy decisions that the Government needs to make. As I said, there have been no decisions as to exactly what these things will cover from a government point of view. The IDC is in the process of developing advice to go back to government in terms of where we think it ought to focus.

One of the difficulties in this space is that you do not want 50 of these things. You want to have a much smaller number. There are also different ways of cutting and dicing, in terms of how a policy gets written and the work that it is intended to do. I cannot sit here at this point and say, 'Yes, there will be something that looks like what you have described'.

Ms O'CONNOR - That is all right. We will berate the minister to the point where he says he is thinking about it.

Mr OVERLAND - It is a policy choice for governments. I cannot obviously commit the Government to a policy decision until they have decided on one.

Ms O'CONNOR - There is some really good work that was done by the state architect. I think Mary is aware of this work because I think he consulted the Property Council at the time. That was the Residential Development Strategy. That embeds those liveability principles into urban design planning and community building. I guess that is the question from a health and wellbeing point of view - how do you make sure that that foundational thinking and the kind of planning projection or planning policy that you have in place sets us up so that we will have some consistency in the planning scheme? We will also have a vision for 20 years and 50 years where we are creating uniquely Tasmanian spaces that people love being in, that are very people-friendly, that have green spaces, that encourage health and wellbeing. How do you do this and make sure that it is in your work?

Mr OVERLAND - Again, it is probably more a question for me than for Mary, to be fair. I think the work of the taskforce is important, but it is quite limited in terms of it getting a consistent set of rules across the state because of the economic benefit, and the clarity and certainty it will deliver. Unless there is really good justification, you are working to a consistent set of rules every day across the state. There is some capacity for local variation, but the case has to be made as to why this area is different from all the others.

From the policy space, I guess there are two parts to the question you are asking. 'What is a mechanism to deliver on a policy intent?' We have talked about that through the state planning policies. The more profound part of your question is, 'How do you go about developing the vision of what you want the state to look like 20 or 30 years down the track? How does that then get implemented through your system?'.

It seems to me that that has been a gap in most planning systems across Australia. It has been an issue that most planning systems have struggled with. Essentially, it is a

government task to resource and set up a process that allows for such a view to be developed, if that is what the government of the day wants to do.

Ms O'CONNOR - It is not just about development. It is about people's spaces.

Mr OVERLAND - It really depends on what the government of the day wants to achieve. If that is a priority, then it can set up a process to achieve that. Equally, it depends on the policy agenda of the government of the day and whether it is wanting to invest resources in developing such a view. I have to say, other jurisdictions have had a go at doing this, with greater or lesser success. I think it is a really challenging thing to do and to do well.

Ms O'CONNOR - In Melbourne they decided 10 years 15 years ago that they were going to do it, and did it. They have delivered the most liveable city arguably in the country.

Mr OVERLAND - I think you would say Melbourne is perhaps one of the more successful examples you could point to.

Ms O'CONNOR - And Portland, Oregon.

CHAIR - Just on this point before we move away from it, Cassy, you are right. It is the government of the day's policy platform they wish to take forward. Yet we as taxpayers in Tasmania would expect that when decisions are being made in a policy sense, things like the health and wellbeing of communities and individuals are taken into account when you are planning a new school or hospital, or anything like that.

It is not just about developing a planning scheme for which you tick boxes and then you get the tick and you can do what you want. It is having that bigger vision. There is limited money in any budget, but if you do not properly consider all of these aspects in terms of health and educational outcomes, then you are actually not doing the best you can for the state. Don't we need a properly integrated approach to this?

Mr OVERLAND - I think these are all essentially policy matters for government.

CHAIR - We did invite ministers to attend, but they are not here. You are.

Mr OVERLAND - Cassie pointed to the success of Melbourne. One of the key changes in Melbourne was density. They actually opted for much higher density in the CBD. It is that density that has then driven liveability.

Ms O'CONNOR - And bringing people to live in the CBD. That is right.

Mr OVERLAND - Yes. Is that what people want in Hobart? I do not know. From my personal point of view, I would say yes, but then what does that mean for height levels within the city CBD? Are you happy to go to -

CHAIR - This is why we need to have this discussion.

Ms O'CONNOR - This is a discussion that we will have to have at some point, isn't it?

Mr OVERLAND - That is the point I am making, that you keep saying that of course we should do these things. My response is yes, but these things mean different things to different people.

Ms O'CONNOR - That is right.

Mr OVERLAND - It is a public process that needs to be gone through to determine what is the -

Ms O'CONNOR - If we did move more people into the city. We have got two Common Ground facilities; we have Brisbane Street, the unions building, the accommodation. It is almost happening organically, for want of a better word for concrete, but it is happening in our city.

Mr OVERLAND - The question is, is everyone happy for that to happen? These things are contested -

Ms O'CONNOR - Of course.

Ms MASSINA - I suppose the other thing is to provide the tools for, for example, the Hobart City Council to be able to zone appropriately that does facilitate mixed use so you get a combination of commercial and residential, that we actually provide through the toolbox the ability for councils to signal where they plan for increased density. At the moment, if you look across the residential zones, it is a bit of a melange; there is not really that sort of clear distinction between, say, inner and general residential or general residential and low density.

That is part of the work that we are doing, not only just trying to clarify the zone use and development standards, but also part and parcel is what is allowable. If you talk about a liveable community or a walkable community, then that presupposes that there is going to be access either through hard or soft infrastructure to a variety of services. That needs to be signalled in the zone so that then when the council applies it, they can say to a community, that is where we are heading. That is some of the work that is part and parcel of the consideration with the recalibration of the zones.

CHAIR - Taking it back to the point of 'Will everyone be happy? Well, no', I am sure there will be people who will not be happy because they never will be. To expect everyone to be happy and smiling is probably a little bit ambitious. I don't know if you listened to *Friday Forum* this morning - you did? I thought you might have. In terms of public consultation and public input, people do care about this, and rightly so, because it is important to all of us. What is the public input process through not only the nuts and bolts? I don't think members of the public really need to have direct input unless you really have an understanding of how the nuts and bolts need to work, then you probably need to stay out of it a bit.

In terms of the policy framework and the aspirational goals, do we really want high density or do we want only low-density living? Or what do we want and what access issues are there, and how are they going to be addressed? How do we engage in that process to ensure that these issues that matter to people - some of the social determinants of health we have talked about with a range of other witnesses that reduce people's

capacity to participate - can be addressed? All these voices are not easily heard. How do we do that?

Mr OVERLAND - I think the experience in other places has been that it is not just a process that involves government. There need to be multiple conversations going on within the community. Again, going back to Melbourne, the committee for Melbourne had a key role to play in this, and it was very much private enterprise coming together and saying, 'You know what, our city is going down the gurgler. We need to do something about it.'

Ms O'CONNOR - And with council though, with Rob Adams -

Mr OVERLAND - It is multiple conversations, yes. Melbourne City Council had a key role in it. The state government had a key role in it. Academia has a role in it. Community groups have a role in it. Parliament and committees like this clearly have a role in it in terms of divining community attitudes and saying this is something that we should be doing together.

I do not just think it is a government thing. It cannot be a government thing. It has to be a much broader, multi-conversation discussion that needs to be managed and normally takes a period of time because it involves making some difficult choices of what sort of built environment you want to live in. The evidence would say that density is one of the keys. Better public transport is integral to it if you want to stop using private motor vehicles and get them onto -

CHAIR - Their feet?

Mr OVERLAND - Well, it is a mix of transport and walking. But if you want people to use public transport, it has to be running regularly enough. Hobart is probably -

Mrs TAYLOR - You have to have the density to do it.

Mr OVERLAND - You have to have density to make it viable. Public transport works best when you do not need a timetable, you just turn up and you know that something is going to come along in the next 10 minutes or so. Hobart is probably never going to be big enough to achieve that in all areas, but if you want to drive density up in Hobart, it means you have probably to discourage urban growth. There is a trade-off there, because some people want to live in suburbia. It probably means more people living in apartments, town houses and units. But again, you cannot build the number of houses in the CBD to get the sort of density that you need. This is just talking generally. I am not speaking for the Government here. I am just talking generally about these difficult conversations and trade-offs that need to be had. It is not as simple as saying yes, of course we are going to have healthy spaces. What does it actually mean?

CHAIR - My question was, are we having them with the right people? Are we having those discussions? I do not know that we are.

Mr OVERLAND - I think there is greater opportunity for those conversations to be occurring. There are more mechanisms being created for those conversations to occur. It cannot just happen within government. It is not just a government thing. It actually needs to be much broader.

CHAIR - No. You need someone to lead and drive it.

Ms WHITE - A lot of what I was going to talk about has already been spoken across the table. We have had evidence about the Health in all Policies approach, including how you incorporate health in urban development planning policies. You spoke about meeting with the Heart Foundation. I am sure, in speaking to Graeme Lynch he has shared with you what Health in all Policies means, I am presuming. There are some really good suggestions that are made through that.

I am understanding more about what you have done, having listened for the last half an hour across the table about the toolbox and of course the policy and the separation of those. It is really important even in providing advice to government that the policy advice incorporates health as a component of that. We have talked about transport and land use planning and density and all of those things.

I am curious to understand further about the integration across departments. I know you have talked a bit about that, but also government business enterprises. You would have heard TasWater gave evidence to us just before you started, and they talked about some of the infrastructure limitations across their network and what that means for development. I am just wondering, in your future time line for delivering to the Government on this, when you see for that integration to be able to occur properly with the departments and GBEs and other corporations, and when a final draft of this will become available for public consultation. I am sure there will have to be some kind of consultation. Then a final document will then be implementable.

Mr OVERLAND - I think there are a number of time lines here. In Mary's task of the development of the state planning provisions, there is consultation going on as we speak with key stakeholders. Certainly these things will be made publicly available for public comment.

Ms WHITE - When will that be?

Mr OVERLAND - It is envisaged, subject to the bill passing Parliament - it is yet to come forward. At the moment the act contemplates a statutory consultation process on the state divisions in the first half of next year. You could expect to see it perhaps towards the end of the year. I do not want to be definitive because it is a very big and complex task. I do not want to promise something I cannot deliver on, but roughly they are the sort of time lines we are talking about.

The draft bill currently provides for a statutory period of consultation. They need to go out and people need to have an opportunity to comment on them. There is a second process that would also apply to the local planning provisions, and it is the way the bill is currently drafted. It is the local provisions that give effect to the state provisions. The state provisions go out for consultation. The consultation occurs. They are finalised. But they are only given operational effect when the local provisions are developed by the local council.

There is another statutory consultation period around the development of the local provisions so people have a chance to see where the zone maps are, where the code, the

overlays, are, and they can comment on all of that. That would happen in the second half of next year. The time line around the State Planning Policy is to start the consultation in the second half of next year. I am not sure how long that will take.

In some ways that is more complex because the policy questions will have more complexity and more subtlety and more scope for genuine difference of views about whether they are right or wrong than the technical application of a set of rules. For most people it will not matter. For some it will because they may be in a different zone and they will have a view about that.

The policies will probably engage a greater level of public discussion, and you would hope that they might. Then they would be given effect. From that, they will be used as part of a review of the regional land use strategies and any adjustments to zones that are driven out of that.

Ms WHITE - Before you take those things out to the public consultation, do you intend to consult across departments, including the Health department, and organisations and corporations?

Ms MASSINA - In the development of the codes and the recalibration of the zones, we need to speak to the infrastructure providers. Some of the discussion and consideration needs to be about, say, serviced versus unserviced land. That then starts trickling into the whole issue around future capex programs and what that means.

If you are going to have a discussion about providing affordable housing ultimately, then you have to look at seeing whether some of the costs of bringing a house out of the ground can be ameliorated by the signals that you put in the zone. TasWater is probably one of the infrastructure entities that has been quite fulsome in their discussion about some of the issues that they face and some of the signals they need to see with land use planning.

We will be setting up an infrastructure reference group because it is important. It is also worth noting that some of the work we have been considering are things like sustainable transport. How do we ensure there are end-of-trip facilities available, that cyleways are considered, whether footpaths are in place? What does it mean in car parking, which is obviously -

CHAIR - Lighting.

Ms MASSINA - That is right, in car parks. That is a very urban discussion to have, but if we are looking at ensuring that urban councils can plan for growth, it is important that we build those signals into the zones, and we can take that on board in the codes. Going back to density, it is worth noting that it has the bare minimum to support buses, and cost-effective provision of reticulated services. It is 15 houses per hectare.

Ms O'CONNOR - What are we at now? Slightly out of Hobart - what is it?

Ms MASSINA - Something like five. Our most dense suburb in the state is Battery Point at 33. Moving aside the fact that people might want to live in a lovely Georgian cottage, I

suspect one of the things that drives Battery Point is that it is accessible, and has small block sizes.

Mr OVERLAND - There is an IDC in existence now that is providing the sort of across government coordination that you were asking about in the policy area.

Ms WHITE - Is that the one that the Health secretary does not sit on?

Mr OVERLAND - That is right but there will clearly be periods where we need to go off and engage with the Department of Health and Human Services about the development of particular policies on climate change - sorry, Premier and Cabinet.

Ms WHITE - To follow up, Mary, on consultation. Would the infrastructure be provided? You talked to us about the access concerns with transport. I would be interested to know if you are going to consult with the service providers of the public for services such as Health and Education and whether there would be a services reference group that you consult with on those two particular issues.

Ms MASSINA - In service delivery one of the key things is once we get through the recalibration of the zones, there will be a need to, through the IDC, provide that information for access to Education and Health and Human Services. It is worth noting that at least one of the taskforce members has a seat in Housing Tasmania's affordable housing strategy and a staff member in my team is also in close conversation with Housing Tasmania because anything that is coming out of the affordable housing strategy that we need to take on board and consider, we need to make sure that pathway is clear.

In many respects what has been really great about what is occurring with the taskforce is the number of people across various agencies who pick up the phone and say, 'we have this and we need to come and speak to you about it'. It is a combination of formal and informal ties.

Ms WHITE - To make my point clear, in a community where their health centre is located down the back blocks. As an example you do an assessment of that. Understanding better urban planning principles, you would have that in the centre where it was very accessible and visible and people would hopefully access health care more regularly because it is obvious to them. How do we work all together to make sure our places are more sensibly designed?

Ms MASSINA - I completely agree. From the tool box perspective we have to ensure there are clear signals in the zones that allow for that to occur. For example, you might have that in a village zone. It is a small area where there is a mixture of residential, commercial and service delivery. The thing that needs to be remembered is that whilst the state is owning and drafting the zones and codes, local government is applying them. Local government needs those tools to say for our community or our municipal area, this is how we intend to plan for it now and into the future. In some respects it is a conversation that sits outside of all us because it is up to local government to take the state planning provisions and say, how do we apply it to our area. We can see that the regional land use strategy is a way for them to articulate their vision and they have been doing that quite clearly. Even councils have done their own strategic planning with

respect to infrastructure provision, like Kingborough. You can say it is whole of community, both public and private and also have a conversation about how the state is going to grow but ultimately it is about local government saying this is what our community wants so we are going to use the tools the state has provided, and the direction the state is providing, to apply that to our area because it is 50 per cent owned by local government.

Mrs TAYLOR - As a supplementary to that, there have been a lot of tools developed in terms of healthy by design communities, but also in terms of justice - safety by design. A lot of local government and across-the-board work has been done. It is really important to not lose that. I hear what you say about local government having the final application, but the principles, the criteria and the standard have to be set by this, which local government will have to comply with.

Ms MASSINA - What has been really interesting is part and parcel of keeping what is good and improving what is not working is that our work is based on the regional land use strategies and the Interim Planning Scheme approach across the three regions. A lot of that work that has been done in enacting what the community wants them to do is embedded in those documents. It is picking up and carrying through that gaze in terms of how they have looked at having a discussion around what services and what residential signals sit in, say, a general residential zone, or what sits in mixed urban use zone, possibly parts of North Hobart, for example.

It flavours a lot of their existing interim and draft planning schemes. It is about making sure that that flavour comes through, but at the same time ensuring that there is a level of consistency and certainly. It is not about forgetting it.

CHAIR - Thank you for your attendance and we look forward to seeing some policy.

THE WITNESSES WITHDREW.

Mr WESLEY FORD AND **Mr BOB HYDE**, ENVIRONMENT PROTECTION AGENCY, WERE CALLED, MADE THE STATUTORY DECLARATION AND WERE EXAMINED.

CHAIR - Thank you for coming. You are aware that this is recorded on *Hansard* and it is a public hearing and that the transcript will be transcribed, put on our website and used for our report potentially. You are covered by parliamentary privilege when you are before the committee, but if you speak to the media afterwards you are not.

The terms of reference are focused around preventative health and the social determinants of health, but during the course of receiving evidence from a range of people, issues of air and water quality have become pretty significant from some witnesses regarding what needs to be done in avoiding ill health and promoting good health. We were keen to talk to the Environmental Protection Authority about the role you play in this area and how it links together. One of the things that has been suggested is a Health in all Policies approach, which includes environmental protection.

Mr FORD - Thank you for the invitation to speak to the committee. Over the next 10 minutes I will give a summary, particularly from the smoke and air quality point of view. We will deal with smoke and air quality first and then come back and deal with water quality towards the end. Bob Hyde, who is our air specialist within the EPA division is here to talk around the technical side of what we can do, what we are doing, and to give you some information about what is happening in smoke in Tasmania. In a regulatory sense in Tasmania as part of the national system, we regulate air quality in a range of manners. Firstly, there is a national environmental protection measure in place, which is a national agreement around air quality. Much of what we do in the Tasmanian context takes its direction from the national standard- setting process.

Within the Tasmanian context, we have an environmental protection policy which was made around 10 years ago. It had its tenth anniversary a few weeks ago and is about to be reviewed. Shortly, Minister Groom will be releasing a document in relation to the review of the Air PPP, talking about what is done for the last 10 years. That is a policy document that then sets the regulatory framework from it. Within Environmental Management, under the EMPCA act, we have a set of air regulations as well. That deals with some of the specific details. In all that context, the issue predominantly for Tasmanians as it relates to health comes down to smoke.

Our main air quality issue is smoke. Smoke predominantly in the Tasmanian context has three distinct periods of potential impact. Firstly, there is the fuel reduction plantation burning seasons, which will predominantly occur during the autumn period. Then we have the wood smoke from heaters and domestic air pollution that is predominantly a winter problem, and early into the spring. Later in the spring, we have regeneration and fuel reduction burning issues again. During the summer period we also have wild fire issues but they tend to be far more episodic. As to smoke generation, the largest volume of smoke generation comes from the large-scale burning. While those episodic events affect individuals particularly with pre-conditions such as asthma, the long-term health issues associated with smoke are living in smoky environments that have long-term smoke generation, which is driven by wood heaters. This inevitably ends up being a conversation about what is happening in pockets of Tasmania around wood heaters and what the wood heaters do.

In a smoke management sense, the EPA runs two programs. We have a domestic smoke management program, which is where we work predominantly with local government. We look at monitoring what is happening in a number of areas across the state regarding wood smoke production. I will get Bob to talk in detail about what we are monitoring and how we go about monitoring. Within that scope of our domestic smoke management program, we run a program called 'Burn Brighter this Winter'. That started off with a bit of community education. It is a monitoring program as well. We work with local government in trying to identify the areas that are particular pockets of problems. Some of these are fairly self-evident as to what is happening in Launceston and the south Launceston area. Places such as Geeveston, New Norfolk, West Hobart, Longford and places where there are lot of wood heaters and low air movements tend to have smoke problems. Bob will talk about some of the detail in terms of the information that is out there.

For the purpose of this discussion, I think it is our job to talk to you about what smoke is and where it is and how we monitor it. It is probably not for us to talk about the health issues associated with that. You can talk to others in DHHS or Menzies around what are the long-term impacts associated with smoke. We are not going to purport to be health experts. There is a fair amount of work. If you have not already talked to some of the people in that area, we can give you some people to follow up in relation to what some of the impacts are in terms of community health around smoke.

In terms of some very general terminology issues, you hear the term PM10, PM2.5 and you hear what measures and what measures they are. In a definitional context, a PM10 particle size is something that is less than 10 microns. PM2.5 is less than 2.5 microns. A micron is a millionth of a metre; it is a small process. It is a volumetric versus weight type of measure because to measure particles in the air you have take a volume of air, suck it through something and then collect all the particles. Then you weigh the particles. The national standards are set in the concept of micrograms per cubic metre, which is an odd way to measure something.

In Tasmania we have three standard receiving or monitoring stations that are permanent and they collect particles out of the air on a regular basis through a filter paper. Those filter papers are collected and weighed and that is how you get the weight.

We all have a system in Tasmania called the BLANkET system and Bob will talk in detail about that; it is a laser beam optical analysis of particles. From that we can get a moveable set of monitoring equipment; it is more portable or cost-effective but it has to be calibrated against our standard stations across the state. From that we can have a very good picture of what is happening on any given night with smoke in Tasmania and Bob will talk through some of the monitoring.

We have a couple of things we will leave you with for further consideration. A huge amount of this information is on our website and we have a guide to our website that will take you through the key points. Bob will talk about some of the details.

Mr HYDE - This is a good point to start if we are going to look at the new dimension of monitoring in Tasmania over the last four or five years. It is a very powerful monitoring tool, compared with the information you get from a single reference monitoring station at

a major population centre. The first thing to do is to acknowledge the importance of the reference monitoring facilities that we have in Tasmania and all around Australia. They are in fact the only way to measure exactly what the air quality in terms of particles is. The reference method and anything else you do to try to measure air quality in terms of particle concentrations has to be compared with that, ultimately.

If it does a good job, then it will be close to that. If it does a bad job, then it is not much good having it. In Tasmania we have a very special circumstance which has enabled us to take advantage of this kind of monitoring. The specialness of our pollution, if you like, is that it is virtually always smoke. Smoke has certain properties that enable an optical monitor, an ethylometer or a particle counter, as they are sometimes called, to actually calculate or measure particle concentrations.

It turns out that for smoke the comparison with the actual reference method is excellent. Instead of having to have reference-monitoring stations everywhere you want to monitor smoke, we can now use blanket stations - 'blanket technology' as we call it. Those instruments are scattered around the state in those areas you see on the map. There are over 29 in all, including at the reference monitoring stations for co-location purposes.

I omitted to say that they are calibrated on a regular basis back to the reference method, so that at any point in time we can check that they are not drifting. They are electronic-based equipment and very stable, which is a pleasing result. They do not often change. Secondly, they are extremely reliable. We have some very competent technical and scientific people who actually developed this system in-house; it was not bought off-the-shelf. This instrument is 99 per cent available.

It very rarely goes off-air. You can virtually rely on it being there. I have sung the praises of the system; it really is a great asset that we have, and it has been recognised by other states as being a very appropriate way of monitoring. We call it 'tier 2' monitoring. Tier 1, the reference monitoring, cannot do without tier 2 - where people are we can monitor. You can see the advantage of that kind of technology.

We have been very innovative with the technology because it was developed in-house by people that are pretty smart. They have decided, with direction and planning, to make a mobile version of that kind of technology. They fit the system with a GPS so that we can actually drive around of an evening and get a spatial look at where the pollution is. Now in front of you, you will see what represents the results of four separate evenings this year when our officers have been out to various areas in Launceston, driving a vehicle on average about three or maybe four hours a night.

This is a concatenation of all four of those surveys. You can see that it is an oblique Google Earth view of Launceston. You can see that the track of the car is being followed as it is driven around these places on four separate nights. To interpret it, the blue is pretty reasonable air quality. The green is getting up there. Green is greater than 50. And the red is greater than 100. This is all PM2. PM2.5 is the smaller particle size, the one that is associated with even greater health impacts than PM10.

The national standard for PM2.5 is 25 micrograms per cubic metre as a 24-hour average. Some of these are greater than 100. They sometimes go up hugely above that. I do not want to confuse you. That is an instantaneous measurement of, say, 125 or whatever it is

in the red areas. The standard is a 24-hour average standard. I will let that percolate. You can have a high peak and you are still not over the standard. These things are sustained for many hours, so they do often exceed the standards.

Mr VALENTINE - These are all at the street level in the car?

Mr HYDE - They are all at street level, from the thing which projects from our vehicle. The vehicle has to drive reasonably slowly, under 30 kilometres -

Mr FORD - It is also worth pointing out where our reference station is.

Mr HYDE - You will see in the diagram a 'TT' for Tea Tree Bend. That is where our reference monitoring station is located, the sewerage treatment plant area there. I hope I have established the difference between these two kinds of technology. One is expensive, but necessary equipment for monitoring reference-level particles.

The other technology is exciting for the present and the future in understanding the impacts of smoke, where they occur, and measuring population exposure. That is what we are doing. You cannot do that with one station remote from where the impacts are happening. Perhaps I can continue to talk about the things we have been doing with that kind of technology whilst engaging in the domestic smoke management program, the Burn Brighter this Winter projects, and monitoring of smoke from planned burns. They are two areas that would be very active, using blanket technology, to come to grips with the problems.

Ms WHITE - Bob, you can see Ravenswood is covered in quite a big red splotch. You say that is because we have a lot of public housing properties with old wood heaters. The best thing might be to replace those with energy-efficient heat pumps.

Mr HYDE - That could be the case. As it turns out, Housing Tasmania has a policy of not replacing wood heaters. When we did the survey it turns out that in the area where there are more Housing Tasmania residences, whilst there is still high levels of smoke, they are not as high as those in other areas of Ravenswood.

Ms WHITE - You have been able to look down to the house level to see who is the owner of that property type?

Mr HYDE - It is more to do with the area. We are looking at it as this area is likely to have more private and this area is likely to have more Housing Tasmania residences. We could go down to houses and we use the technology to locate plumes that are affecting the houses around it. We can do that.

CHAIR - The rest are all green and blue.

Ms WHITE - Perhaps what you are saying is that Housing Tasmania's policy of replacing wood heaters with energy-efficient heat pumps is working.

Mr HYDE - I think that is true.

Ms WHITE - And properties that have been transferred to the private market are the ones that are now requiring an upgrade.

Mr VALENTINE - Is it possible to have a wood heater that burns and produces less than a safe level?

Mr FORD - In Australia wood heaters are made in accordance with an Australian Standard which over the past decade has become tighter and will continue to be tighter in omission standards that wood heaters have to meet. There are a couple of challenges in relation to wood heaters. It is not just about the manufacturing standard and their ability to operate the way they are manufactured. There is clear evidence around the nation that people modify wood heaters because they have the philosophical viewpoint of many in the community that they want their wood heater to burn all night. When I met with the National Heater Association people, one of their concerns is that people modify heaters to have them burn longer.

The second significant issue is wood quality, whether it is dry or green or processed, and there is also the storage function because if the wood is not stored well and it is put in the fireplace damp or wet, it is going to produce more smoke than completely dry wood.

Mr VALENTINE - Is it possible to burn a wood heater in such a way that it does not create a health problem? Can we answer that?

Mr FORD - The answer to that comes down to how many wood heaters are in a given area. If it is one wood heater in an area, the answer is yes. Its smoke production is going to be less than any impact standard. If every house in the street is operating an efficient wood heater that is going to be low emission, that will be different to half the houses operating inefficient wood heaters.

Mr VALENTINE - You do not have a measurement as to the particulate size coming out of a properly-burning fire where you put the wood on and you burn it flat out for 20 minutes?

Mr FORD - Australian standards are there for that.

Mr VALENTINE - And you do not know what that level of emission is at that point when it is burning at its most efficient?

Mr HYDE - The CSIRO did a study on real world emissions from wood heaters. The design criteria for wood heaters setting the standard is done in a laboratory. They stack the timber in a certain way. In a perfect world, in other words, and then they light it, and it meets the requirement presently of four grams of smoke per kilogram of wood burnt. They meet that in the laboratory. All those that are sold probably meet that in the laboratory.

Mr VALENTINE - And the particulate size in the laboratory?

Mr HYDE - They do not measure particulate size. They measure total particle mass. The real world omissions were about twice that. The CSIRO did 40 houses in Tasmania, and they found the average was more or less 10.

Ms O'CONNOR - What is in wood smoke? What are the compounds in it, apart from the particulate matter?

Mr HYDE - You have probably heard a lot about what is in cigarette smoke. It is pretty much the same. It is a concoction of lots of different chemicals that constitute the aerosol. Also it is a mixture of solid particles, like carbon, and volatile other components. Maybe 40 per cent of it is volatile substances that could condense and be absorbed onto the carbon particles. It is a pretty toxic mix.

Ms O'CONNOR - Maybe this is not a fair question for you, but what do we know about the health impacts of the wood smoke compounds? I mean, obviously -

CHAIR - He is not a health expert.

Ms O'CONNOR - Yes, I know. But are they sticky? What are we dealing with here? I know the PM2.5s go down the bottom of your lungs and so do the PM10s, but those other materials in wood smoke?

Mr HYDE - The specific health impacts are beyond our jurisdiction. I think they are similar to the impacts you might expect from smoking in whatever concentrations they are observed. Other than that, I think there is plenty of published work on the impacts on the community of particles. Quite a lot of reputable stuff is quoted time and time again about the effects on a city of increasing particles at certain concentrations. For example, what effect does increasing the concentration of particles to10 µg/m^3 have on the community?

Ms O'CONNOR - I do not know who can best answer this question. The wife of one of the witnesses - Mr Corrigan - who came before this committee suffers from a range of allergies and respiratory distress. Mr Corrigan's point was that Tasmania has all sorts of smoke inputs. We do not need to go through all the ones he mentions here. You spoke about the peculiarities or the specifics of our air pollution, and that is all comes from smoke. Is there a place in New Zealand or another part of the world to which we can compare our air quality? Are we just a really smoke-rich environment?

Mr FORD - In one sense, Tasmania still has particularly low levels of other pollutants, even in our cities. Our pollutants tend to be very heavily dominated by wood smoke. If you go to Sydney or Melbourne, there are a lot more pollutants - car exhaust, industrial effluent - that are causing both the particles and the toxins. I think the health issues really come down to two general things - one is just sheer irritation because of particles, their number and size, irrespective of what they are. We know that includes things dust and things like that. But then there are also the toxins.

In a comparative sense, if we look at other places, we have a relatively low level of other toxins that are not wood smoke. That is why we cannot identify that in a Tasmanian context. We probably also have relatively low levels of dust. When we look at monitoring data and at the PM2.5 levels, they are close to the PM10 level so it going to be predominantly smoke.

If there is a large separation between the two, it is probably a low level of smoke and a higher level of dust because dust is going to be in the upper range, closer to 10. Pretty much everything less than 2.5 is in the safe-type category. As to what that means to the

health impacts for individuals, is it the quantity? Is it the particle? Is it the sheer volume of particles, or is it, in fact, the toxins associated with the wood smoke?

Mr HYDE - The nub of your question is that future research in this area is very important. The nature of the particles - we talk about the PM2.5 and PM10 - but in our case it is fairly similar because it is wood smoke. But PM10 and PM2.5 apply to traffic and various other sources. But we have to ask about the nature of the particle, PM2.5 - what effect does that level of the toxicity, if you like, have? At the moment CSIRO is researching that. It is very labour-intensive work because you have to look at the whole and you have to use sophisticated instruments to do it. It is beyond our ken.

That report is about some monitoring we did in Invermay, We put a fixed station for 14 days in Invermay and every day of the 14 days it was there it exceeded the national standard. It was quite a surprising even and not far away is the Tea Tree Bend monitoring station, which I think exceeded the standard on one day during that period. It is possible that we have much greater impacts in one area than are being measured at the reference monitoring station. If you look through the paper you will get an understanding of the kinds of things we are doing to understand better the impacts of smoke at the locations where people are living.

Mr FORD - If you want a more technical background to anything or just as a result of this information you have further specific questions around what we are doing and why we are doing it, then we are happy to take those on notice.

In terms of water quality problems, we have a range of premises and there are 520 regulated premises by the EPA in the state. Many of those will be premises that have an impact on water quality. There are about 89 wastewater treatment plants owned and operated by TasWater that are regulated to varying degrees by the councils and by the EPA. Clearly they have an impact on water quality in a discharge sense.

In terms of drinking water we do not run any monitoring programs around ambient drinking water quality [inaudible]. TasWater is responsible for its own water monitoring. From time to time we will be working with TasWater and with communities around potential contaminants in drinking water by virtue of Analytical Services Tasmania having a publicly funded ability to undertake the level of monitoring and analysis. For water, in terms of it being lead, tin or other heavy metals in drinking water, like Pioneer, Ringarooma and Rosebery, all of that sampling goes through Analytical Services. We are not doing it for the EPA, we are doing it for TasWater, so TasWater is the client.

Ms O'CONNOR - The mechanics of that are that the EPA commissions the work for TasWater? How does it work that the EPA is involved? Is it because of the statutory responsibility to monitor those sites you were talking about? How does that work?

Mr FORD - In terms of standard drinking water processes, the monitoring that is required by TasWater is consistent with the State Water Quality Standards. They have a set of standard and national objectives on levels of particular things in drinking water, so TasWater will be monitoring to a standard by virtue of their regulatory controls, which predominantly come from the Director of Public Health. So through the National Drinking Water Standards there is a set of documents that sits within that Health

portfolio. Where there are changes of direction to the National Drinking Water Guidelines, they come through the Director of Public Health. TasWater monitors under the direction of public health. Our role is that we just happen to have the laboratory that does the testing. From time to time there might be particular environmental issues that trigger, that might cause me as the director to ask TasWater to undertake further analysis. If I had evidence of environmental harm or contamination - if I was aware of a contaminated site that was causing potential environmental problems - I could reasonably direct TasWater to undertake additional water monitoring in the vicinity of that contaminated site. That will tend to be premises-based or ad hoc in its nature. If we have a particular issue, we need to monitor it. In places like Pioneer and Rosebery we are clearly having an active role in what has happened in Rosebery over the last five years because of the relationship to the contamination of the mine.

Ms O'CONNOR - That would be a process where the EPA worked quite closely with Population Health or the Director of Public Health.

Mr FORD - Yes.

Mr VALENTINE - Do you communicate with Tas Irrigation on the monitoring of water quality? Especially given that we have got a heap more irrigators out there on farm land and -

Mr FORD - Not from a [inaudible] point of view. Water quality, particularly water quality in a rural setting, tends to be monitored and managed by councils. But if you look at our blue-green algae issue in the waterways, Tasmania Irrigation is part of that problem - places like Craigbourne Dam. The activity tends to be regulated by the local health officer through the council. If it gets significant then inevitably we will get involved, depending on the level. If there was a big bloom, we would get involved to some extent.

Mr VALENTINE - You would find that out through the local council?

Mr FORD - Through our relationships.

Ms O'CONNOR - Are you covered by EMPCA? What is the legislative instrument that requires councils to monitor or test?

Mr FORD - It comes down to the issue about whether it is environmental harm or environmental use. It is not about water quality per se. EMPCA deals with a separation of functions between the department, the EPA board and councils. Where it is deemed to be a nuisance [inaudible], the council [inaudible] regulate it. Blue-green algae in a water body might be deemed to be nuisance that therefore needs to be regulated, so it is regulated for that reason, rather than being a water quality issue. If it happens to also be drinking water, then the Director of Public Health has a real interest in blue-green algae from a public health point of view.

Mr VALENTINE - That is why I asked that question. On-farm management plans are very strict, in a way. They do lots of monitoring, and it is happening. I was just wondering if there was any connection between you and Tas Irrigation.

Mr FORD - It is an ad hoc relationship rather than a formal one.

CHAIR - It is helpful to know what is going on out there with some of this monitoring. More targeted action is probably an appropriate thing. Thank you for sharing that.

Mr FORD - There is a fundamental question here. We can do lots of monitoring, but action is a much broader community problem.

CHAIR - When all is said and done, there is lots said and not much done. Thank you very much.

THE WITNESSES WITHDREW.