



# **Climate Health WA Inquiry**

## **Inquiry into the impacts of climate change on health in Western Australia**

**Hearing Lead:  
Dr Sarah Joyce**

**Witnesses:**

**Dr Ron Edwards  
Chair, State Emergency Management Committee (SEMC)**

**Mr Mal Cronstedt AFSM  
Executive Officer, SEMC**

**Ms Stephanie Underwood  
Executive Manager SEMC Business Unit, DFES**

**Dr Heather Taylor  
Program Leader of SEMC State Risk Project**

**Thursday, 14 November 2019, 10.00 am**

HEARING COMMENCED

5 DR JOYCE: Good morning everyone. I would like to thank you for your interest in the Inquiry and for your appearance at today's hearing. The purpose of this hearing is to assist Professor Tarun Weeramanthri in gathering evidence for the Climate Health WA Inquiry into the impacts of climate change on health in Western Australia. My name is Dr Sarah Joyce and I'm the Project Director for the Inquiry. To my right is Dr Rebel Bangor-Jones, who's the Public Health Advisor for the Inquiry. I've been instructed by Professor Tarun Weeramanthri under section 230 of the *Public Health Act 2016* to conduct today's hearing. Please be aware that the use of mobile phones and other recording devices is not permitted in this room, and please make sure that your phone is silent or switched off.

15 This hearing is a formal procedure convened under section 231 of the *Public Health Act 2016*. While you are not being asked to give your evidence under oath or affirmation, it is important that you understand that there are penalties under the Act for knowingly providing a response or information that is false or misleading. This is a public hearing and a transcript of your evidence will be made for the public record. If you wish to make a confidential statement during today's proceedings, you should request that that part of your evidence be taken in private. You have previously been provided with the Inquiry's terms of reference, as well as the information on giving evidence to the Inquiry. Before we begin, can I ask if you have any questions about today's hearing?

DR EDWARDS: No.

30 MR CRONSTEDT: No.

DR TAYLOR: No.

35 MS UNDERWOOD: No.

DR JOYCE: Great. For the transcript, could I ask each of you to state your name and the capacity in which you are here today, and could I also ask that throughout the hearing you briefly state your name prior to speaking? Dr Edwards?

40 DR EDWARDS: Thank you. Ron Edwards, Chair of the State Emergency Management Committee.

45 MR CRONSTEDT: Mal Cronstedt, Executive Officer of State Emergency Management Committee.

DR TAYLOR: Dr Heather Taylor, Program Leader of SEMC State Risk Project.

50 MS UNDERWOOD: Stephanie Underwood, Executive Manager of the State Emergency Management Committee Business Unit.

DR JOYCE:  
brief opening statement?

Thank you. Would you like to make a

5 DR EDWARDS: Yes, I would. And thank you, Chair, for  
the opportunity to appear. I think at the outset, I'd like to acknowledge that we  
meet on the lands of the Noongar nation who, as we know, historically, were  
very skilled at managing the relationship between fire and the environment. So  
I think it's quite instructive for all of us. So I acknowledge we do that, and to  
10 acknowledge the elders past and present. I want to congratulate the Minister  
for Health and the WA government for undertaking this Inquiry, because  
working in the emergency management area as we do, what is clearly evident  
to all of us is that the impact of the climate and the changing emergency  
environment on people and their health is significant. Working in that space,  
15 you can see, if we look across Australia at the moment, that in New South  
Wales and Queensland they're dealing with disasters of that kind.

And I make the observation – it is said that now is not the time to talk about  
20 disaster given that people are going through terrible experience, and I think  
from our point of view, it's respectful to those people. It's respectful to the  
people who are impacted, it's respectful for those who are on the front line,  
because we're saying, from our position, the circumstance with which you're  
dealing is more dramatic than it was historically, which is really what our  
work's about, and which, in some sense, your Inquiry's about. So we're very  
25 pleased that we're able to talk to you today about these things. And, I guess,  
when you begin to step into the space of emergency management and climate,  
that there's the larger debate about climate change and about what the drivers  
of that might be. And our view is that we're faced with the empirical evidence  
in front of us.

30 In fact, the preparedness report that we do each year for our minister, Minister  
Fran Logan, and the Parliament of Western Australia is really about that. It's  
about gathering evidence on as broad a scale as possible from local  
communities, saying, "What are the things you're observing in your space?"  
35 And we try to report on that very thoroughly and faithfully, because it's our  
view that people's lives and future is at risk. So from our point of view, we  
take that climate change is a given. It happens also, incidentally, that I also  
work in the seafood industry and we're seeing the changes in that space in  
exactly the same way. In fact, I use the phrase that we now catch the species  
40 from the Pilbara water called Spanish mackerel off the coast of Fremantle.  
And the phrase I use, the Spanish mackerel don't read Andrew Bolt's columns.  
They go where the environment takes them, where survival takes them.

45 The second observation I'd make, too, is that you only need to follow the  
dollars. The dollars are the companies like BHP, Woodside, Rio, Fortescue,  
and Australia's most successful fishing company, Austral Fisheries, have all  
built climate change into their modelling. So from our point of view, in the  
empirical evidence, in the economic circumstances, what's before us is

significant. So as I say, we try and work carefully through that, to try and give a good account of what we think are the things that are impacting on people. It's interesting in our work more recently, we decided to look at the State core objectives and to say, how do we cast this conversation in a way that the community will understand? So we began to talk about values, about human values. About why people might want to fight for their communities and what they might want to protect.

Because we believe that that's really, ultimately, what we're all about, which is, what are the values that we find ourselves in? And so we've completely begun to address all of the issues around the State core objectives, around the kind of human values that might be impacted. And from that, of course, lead to conversations about things such as resilience. So, I guess, I don't want to make too long an opening statement, because we would really welcome your questions, and we would really welcome observations. And, of course, I'm in the company of people whose knowledge is significant. So I would say that, for us, the core business is, how do we provide a statement that is as thorough as we can be about the broad scale emergency space? And in that context, we work particularly with local government. And one of the phrases we use in the State Emergency Management Committee is that almost every issue is local, and it's personal.

And so when you develop that conversation, you're able to actually get people to consider why we might have that. And the reason I emphasise that, Chair, is simply that it's getting people to take up the understanding that the environment is more challenging than it was. That it's not just a case of waiting for the people with the trucks and the helicopters to turn up, but it's a case of saying, what role can we play every day in the way we work in our communities? And that conversation is just going to keep going. It's not an endpoint conversation, it's a continuing conversation. And certainly, in the framework of your Inquiry, as our population ages, vulnerability becomes much greater.

We've actually looked at how you deal with people in aged circumstances, how you might deal with evacuations. Disability becomes an issue, we've looked at that as well. The removal of companion animals from hazards is a matter that's active for us. Because, as you know, people say, "I'm prepared to die for my horses and dogs", and our view is, we want them all to live. So from, I guess, our general observations, we're very keen to continue to drive the conversation to the local and the personal arena, so it's not people in trucks with uniforms, but it's about the way the community functions. I'm confident we've got a highly professional emergency management community, with people in trucks and uniforms and helicopters and so on, and communications.

And also, the other thing we really recognise is the role of volunteers in this. The people taking ownership. And they do so because they value the things we value, which is about life and property and the environment we live in. So,

Chair, thank you for the chance to appear before you. I will cease now and see if our colleagues want to say things and also to hear your questions.

5 DR JOYCE: Any further comments? No? Okay.  
Thank you, Dr Edwards for that opening statement. And you raise a number of points that I'd like to come back to - - -

DR EDWARDS: Yes.

10 DR JOYCE: - - - through the hearing, if you don't mind. I might start with the Annual Preparedness Report, which you mentioned - - -

DR EDWARDS: Yes.

15 DR JOYCE: - - - that the State Emergency Management Committee conducts. And I understand that the 2019 report is due to be released soon.

20 DR EDWARDS: Yes.

DR JOYCE: I was wondering if you could talk us through its main findings, particularly as they relate to the WA climate, and also how the report might be used by the major agencies, particularly over the  
25 coming summer months.

DR EDWARDS: Yes. I would make the point, Chair, the 2019 report is completed, it's with the Minister and we're waiting on his decisions and deliberation on that. However, if we were to talk about the 2018  
30 report, for example, the trends and the patterns are similar, and of course, that's now a public document. So I might refer to - - -

MR CRONSTEDT: Thank you.

35 DR EDWARDS: - - - Mal Cronstedt to assist us in that regard. Thank you.

MR CRONSTEDT: Yes, thank you, Chair. And as  
40 Dr Edwards has mentioned, the preparedness report has been an annual document, an annual exposé of our preparedness to face major emergencies for many years, 2013, in fact. And the trends and patterns are found very early on, continued through to the draft report, as mentioned not yet released, the 2019 one. It's instructive, I think, to just briefly mention that in as far back as 2016,  
45 the preparedness report received quite a bit of expert advice from a whole range of people, Bureau of Meteorology being one of them, and I'll just quote a section that they said about climate change. So the Bureau of Meteorology said in that 2016 report:

5 *Hotter, drier conditions due to climate change, particularly in the southwest, will have an important consequence for emergency management. If climate conditions continue along the current trajectory, the northern part of Western Australia will be increasingly cooler and wetter while the Southwest will be hotter and drier. This will increase the likelihood of floods in the North while heightening the threat of bushfires and heat waves in the Southwest.*

10 So that trend continues through to the 2019 one. What I can say about the most recent report is we've taken a slightly different approach this time. We continued to assess the State's capability against our capability model, which is well explained in the series of reports that precede it, so that hasn't changed much. And we do a survey across local governments and state agencies, and a range of other support agencies and utilities, and get their views about how  
15 they are matched against that capability. And of course, across all 27 hazards, including heatwave, of course.

20 And many of the natural hazards, as you would know, that have an effect on health – you know, such as flood and fire and so on, not only, of course the heatwave. But the difference we've taken – or the different approach we've taken this time is not only doing a statistical analysis and graphically representing the outcomes, but taking a deep dive against a couple of key issues, which... we chose heatwaves, power supply disruption, and the management of coastal hazards, which, as you know, have been in the news.  
25 The coastal hazards one, particularly, has been in the news. And, of course, most recently, the warmer conditions in the eastern states, which has, of course, led to drought and also the bushfires we're experiencing.

30 So those deep dives – I can't talk about them yet, but they will provide a great insight and a much deeper analysis of those particular aspects and represent a really incisive view across those particular aspects. So we're really quite looking forward to using that document, as the other ones have, to inform investment decisions. So we're requiring, for instance, people who wish to apply for grants in the emergency management space for any of those hazards  
35 – wherever they're placed in local government, not for profit organisations, district diversity management committees, or at the State level – we require them to prove that the money they wish to have to do whatever it is they want to do is actually linked to the risks that have been identified.

40 So we're hoping that the latest report will continue to drive that emphasis and can continue to drive investment choices to actually address the risks that have been identified by evidence, are evidence-based. And, of course, will incrementally affect when and how we review policies such as animals in emergencies, which is... in the last year we've been doing quite a bit of work  
45 on, as a direct result of some of the preparedness report outcomes, and the other issues that Dr Edwards mentioned. And, of course, it's a useful document for people to use to understand the complexity. It's written in such a way to be readily digestible. There's a lot of information behind it, which we can shape

and direct to individual needs. But the report itself is meant to be readily digestible and usable, and people can pick it up and get a broad understanding. And if they wish to explore anything in particular detail, they can come and see us and we can provide them with far greater detail and insight into whatever it is they're interested in, to evidence, treatments and controls to address the issues that have been identified.

DR EDWARDS: And thank you, Chair, Ron Edwards. As soon as this contemporary report is available, we'll make sure that you get copies, as soon as...

DR JOYCE: Thank you, we would appreciate that. You also mentioned, Dr Edwards, in your opening statement, around how the values of the community are becoming part of the State core objectives. And I know community is also mentioned in the State Emergency Management Framework.

DR EDWARDS: Yes.

DR JOYCE: I wonder if you could just expand a little bit more around the role of community and how it links to the concept of community resilience, and if such an approach could be applicable to climate change.

DR EDWARDS: Yes. Thank you. And as I mentioned, in fact, the document here that I referred to before, which was about how we build a resilient Western Australia, really looking at the infrastructure, public administration, environment, economy, people and social contexts, and then, in there, we talk a great deal about community and values, as I mentioned before. I guess the most important thing is, we structure the Emergency Management Policy around four emergency management functions of prevention, preparedness, response and recovery. But we take the view they can't be achieved without the involvement of communities. It's recognised in the State's Emergency Management Capability Framework as one of six core capabilities.

Community members have an essential role across these areas. We indicate in our work that community members can work on their properties, and with their households and communities, prevent and prepare for emergencies. This will help reduce the consequences of emergencies when they do occur. And I think we've been seeing that in some of the evidence coming out – the visual evidence coming out of New South Wales and Queensland. Community members are often the first responders to emergencies, raising the alarm and taking action to keep their families and community safe. Therefore, we need community members to know what to do when they're faced with an emergency situation, to understand the system of emergency alerts and warnings. So we're always conscious of how critical that is in emergencies.

And ultimately, it's communities that are affected by emergencies and disaster. When the disasters do happen, we need communities to be involved in designing and implementing recovery plans to make sure the recovery process addresses the needs of community members and is equitable. And that's always an issue. We've got to make sure that everyone is addressed and treated in a fair and equitable basis. Community members also provide critical support to one another during emergencies and throughout recovery. And I think one of the joys of living in Australia is that Australians are very willing to come forward and tell you the way they see the world should be. And that's very helpful, particularly when you've got emergency workers turning up, and they want to know, and the locals will say, "That bridge has burnt out, don't go down that road". And for us, that sort of evidence and involvement is critical. I'll just check with my colleagues to see if there's anything more we need to add. Thank you.

15 MR CRONSTEDT: Can I add something, Chair? So most recently, the State Emergency Management Committee through... supported by the Department of Fire and Emergency Services, has secured some funding to develop a National Disaster Resilience Program. The Commonwealth has long-standing frameworks for disaster risk reduction. There's a more recent iteration, which is on the cusp of being agreed across jurisdictions, and funding to go with it, matching funding, so the State contributes. But we've already secured some funding to develop a particular strategy, looking at what is it that makes people vulnerable, or perhaps less resilient? You know, how can we explore this in far more detail and develop a strategy for community disaster resilience?

Other jurisdictions have done similar work. We'll learn from their experience, of course. And as Dr Edwards has already mentioned, we've done a lot of the background work in terms of getting a feel for the risk profile and some of the capabilities that are out there. Now it's time to explore, what is it that we can do to make people, first of all, understand the risks that they're faced with? Because it's often said that people on an individual family scale don't have a clear... it doesn't occur to them, it's not in their consciousness. It's not something that they think about day-to-day. They've got bills, they've got all sorts of things happening in their lives.

So the area we're in, for instance, looming heatwaves, which – you know, over five, seven, 10 days, if you can imagine a scenario in Perth, where, you know, the temperature exceeds a particular threshold and systems start failing and more vulnerable people in our community are affected by that heatwave, we need to understand what it is that – you know, how did they get to those circumstances? What can we do to build systems around them to support them and perhaps avoid those circumstances where people are left to their own devices. Or perhaps simple things they could have done to help themselves mitigate the effect of the heatwave, for instance. So that's some really interesting work that we'll be embarking on.



One model I really had in mind, which – I'll defer to Heather in a minute, if I might – if you can imagine two ellipses, a Venn diagram – and I'm sure you know what a Venn diagram is, hopefully, and the interface between the two. So the sources of risk are one ellipse, and the elements at risk are the other ellipse. It's the interface between the two that we really want to make as small as possible. So there's a lot more behind that, obviously. You know, the sources of risk have dimensions, physical dimensions, features and characteristics, which we can affect, apart from the weather, perhaps, and as we know, we're experiencing a change in climate. And these elements at risk, the individuals, the places they live, their circumstances, how they look at the world with their – everything about people and the systems and the places around them. And the interface between the two is really the critical thing.

And then there's... in my mind, there is an even larger ellipse around the whole lot, which is the environment. And by environment I mean, you know, political, social, economic, everything that shapes those two things and how they interact with each other. That's a very simple way of looking at the problem in front of us. And I think, you know, as Dr Edwards has said, we've got a strategy which is values-based, we're doing some research, we understand the risk profile, we need now to invest. Can I defer to - - -

DR JOYCE: Dr Taylor, yes, do you want to add anything?

DR TAYLOR: In regards to the community - - -

MR CRONSTEDT: Yes.

DR TAYLOR: - - - work?

DR JOYCE: Yes, that would be great, thank you.

DR TAYLOR: Vulnerability. So a lot of the work that I've been doing is within the State risk project. And as a consequence of the way that the project is structured, it's looking at worst-case credible scenarios, which are becoming less rare, I would say. So some of the scenarios that we have come up with, events have occurred that have actually been larger than the ones that we had anticipated to be the worst case, so that was interesting. The Esperance fire, for instance, the scenario had been planned. This was the worst case they could think of. The fire happened on the day we were supposed to hold the workshop, and that fire was bigger than what they had anticipated. So several months later, we went back, made a larger scenario, so they could look at what would those consequences be. So that's been something that's been quite interesting.

In terms of the vulnerability side of things, we haven't focused particularly on that, because we've been wanting to understand what the risks are. And I think it's interesting when you do speak about risks and vulnerability, particularly in

the climate change realm, because we can't stop the weather, unless you're actually talking about corrective mitigation of reducing the carbon emissions, which I think is the area that our society does need to move in towards, because I think we have this idea that we can control much more than we actually can.

5 So the field that we're in is much more of a reactive space, that we're having to respond to the fact that things have changed, the environment is coming, water is coming, the heat's coming, once a fire starts, that's coming. There's only so much that we can do. So a lot of the mitigation work that is involved in emergency management has to do with protecting our assets and recognising

10 where the vulnerabilities are, whether that's critical infrastructure, as well as individuals who might not be as resilient.

And I think most people make good decisions, if they have information in front of them that they can make those decisions. And I think that's where our work is moving in, and with the development of that strategy, being able to put information into people's hands so that they can make wise decisions. As soon as you know your house is that risk or you've got a car, you think, "Okay, I need to get insurance for that chance. It's in there, it's in the glove box, I'm not going to touch it until I need it, but it's there's a safety measure". And I think that's the type of information, in terms of natural hazards and how they're impacted by climate change, that we need to be putting into people's minds and informing them of the results that we have found, in order to reduce that vulnerability. Because everyone is capable of doing something, it's just knowing to what point that they can reach and how we can assist them in that.

25 DR EDWARDS: And, Chair, if I might quickly add – Ron Edwards – it was interesting, in a previous life, I was on the Social Inclusion Board, and we had look at the impact of Victorian bushfire, where lots of people, as we know, died. And many of the people who survived had two things. They had a pair of shoes and access to an AM radio. Everything else failed. Communications failed, wearing thongs failed. A pair of shoes and access to a radio. So obviously, ABC Radio and other networks now play a very big role, and that's so important. And the other interesting thing was that with the severe tropical cyclone Veronica that impacted mainly Port Hedland and Karratha, many of the locals were saying, "We were aware of these risks, you know, we've dealt with the wind before". In fact, the risk was different because it wasn't a risk of the wind, it was a risk of flooding and of households being flooded. So the evacuations that needed to take place, the conversation had to shift. We know you know about the wind, what you don't know is about

30 a metre-plus of water coming through your house. So again, it's this changing arena that we need to be conscious of. And as Dr Taylor said and Mr Cronstedt said, it is a continuing conversation in the community.

DR JOYCE: Thank you. The State risk project that you mentioned, Dr Taylor... is climate change a designated risk within that register?

DR TAYLOR: No, it's not. So the State risk project is focused on the 27 hazards that are in legislation – emergency management legislation and the regulations, rather. So climate change comes into play in the sense that it affects how the natural hazards play out. And as I mentioned, we will get the worst-case credible scenario. And with that, the hotter you make it, the climate change is making it easier to get hotter for much longer sustained periods. The bushfire season has increased, you know, we've fires in October that are quite catastrophic. And we had fires in May last year, as well. So that season is shrinking. So that's how climate change has been captured within the program as such, but it's quite difficult to name climate change as a risk when it's easier to focus on the hazard events themselves, or hazards as described.

DR JOYCE: Thank you very much. Dr Edwards, you also mentioned in your opening statement the work that local government does. And I know that under the *Emergency Management Act*, they do have statutory responsibilities to have local emergency management arrangements. Could you explain to me how the State Emergency Management Committee works with local governments and local emergency management committees?

DR EDWARDS: Yes. And thank you, Chair. We provide direction and guidance to local governments and local emergency management committees through the State Emergency Management Policy Plan, Procedures and Guidelines. Specific roles and responsibilities are outlined within the State Emergency Policy to assist with carrying out their statutory responsibilities. The SEMC sponsored the development of guidelines to assist with the creation of local emergency management arrangements or local recovery plans, which include reference to ensure the review of these plans occurs every five years, so the committee oversees that, as risks might vary due to climate, environment and population changes.

And in addition, the SEMC ensures the provision of district emergency management advisors, and these advisors are very important at the district and local emergency management level. The DEMA officer is the Executive Officer of the District Emergency Management Committee, DEMC, and DEMAs provide coordination across all of the local governments within their district review – and they do the review of the LEMAs prior to their submission to the District Emergency Management Committee, and liaise with affected local governments during and immediately after major incidents to ensure they have adequate capacity and support to carry out effective recovery measures.

I guess it's important also, for the benefit of the tribunal, that we recognise that not all local governments have the equal resource capability. So one of the things we're very conscious of, working with WA local government association, and they're on the State Emergency Management Committee, is that we at the State Emergency Management Committee, with our staff and the District Emergency Management Advisors, can try and assist where possible,

because some of those... and it's absolutely the case that, as we see this movement from the inland to the coast in areas like the Wheatbelt, you've still got the vulnerability, you've still got the risks, but you may have fewer people, you may have fewer resources. So we recognise the responsibility for us to try and understand that, to have that discussion, to help them work it through the process. And as we say, in this area, this is really a conversation that you need to keep having, and we do this assessment as part of our annual preparedness report as well, so report on local governments and how they're standing on that.

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MR CRONSTEDT: Can I add - - -

DR EDWARDS: Yes.

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MR CRONSTEDT: - - - that not only do we assist them through the DEMAs, as Dr Edwards described, and providing some policy and guidance and the usual checklist and so on to assist in every way we can, but we also provide – and for some years have provided – a grants program, both a State-based one and a State-Commonwealth-based one, to provide for better local emergency management arrangements and any other treatments as I described earlier, and more recently, based on the risks identified. So as they identify risks, grants become available to mitigate those and address them. So there's been a long history in increasing amounts of money to address those local needs, because at the end of the day, they can do the planning, they can do the thinking and the writing, but then it need to lead to action and treatments and controls, and that's where the grants programs come in.

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DR EDWARDS: And I might add, for the benefit of the tribunal, because we're part of a global conversation, one of the things we often discuss, and local communities are very good at this, there's not much point putting some infrastructure back in a place where it's going to get flooded again, for example, unless you actually upgrade infrastructure. So it comes back to what Mal was just saying, there's some benefit in having local initiatives funded, so people can then say, “Well, if we're doing it again, we might approach it differently this time”. And it means that, from that, you get the resilient infrastructure. The other thing is, you get more resilient communities, because they've been listened to and they own it. And from our point of view, it meets those ideas that it should be personal, it should be local.

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DR JOYCE: Thank you, that's very helpful. You mentioned the role that local government have have during the recovery phase, and I know that SEMC also has a role in the recovery phase after disasters. I was just wondering what you've learned from that experience that could help in response to chronic climate-related conditions such as drought, for example, where there is that cumulative impact over time?

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DR EDWARDS: Yes. And – Ron Edwards – thank you. For the benefit of the tribunal, it's interesting even now, in the current

circumstances in New South Wales and Queensland, the media's beginning to report upon trauma and the impact of trauma, and that's one of the things that we're very conscious of. And it's not just a case of how you rebuild the physical infrastructure, it's how you deal with the community circumstances, and we're very conscious of that. And obviously, you then get buried in it, with old buildings, for example, you get the removal of asbestos and how critical that can be. So it's not always just a case of going through and saying, "We'll clean everything up", but there's hazards that people have to deal with in that recovery phase. So I just wanted to make those opening remarks and I might turn to Mal to elaborate further.

MR CRONSTEDT: Thanks. So the work of recovery planning really comes to the fore. So legislatively, local governments are required to have a local emergency recovery coordinator in place and a plan in place. Over the last 18 months, two years, governments reorganised support for recovery to bolster that very area, so that now greater guidance and support is available to local governments to not only plan, based on scenarios, what might happen, but what are we going to have in place, and particularly address some of the intangibles, as you described them. So that's a piece of work which has a fair way to go, and I know NGOs such as Red Cross and others have been active in this field. And we've been working actively with them and others to try and give local governments not only the hard, you know, guidance, money, you know, this is how you do stuff to recover, and asbestos and those hard things, but how are we going to get this community back to a new normal, and what are the issues that are... the long-run issues that we really do need to address?

It's not an easy area, because local governments, you can imagine – the Shire of Brookton, just to name one, that's not for any particular reason – but a local government, any local government in a more remote area, which, perhaps – or not that remote, really, Brookton – but it doesn't have a disaster every year. And to maintain a recovery coordinator, to maintain an interest in the area and maintain a system that could step in and think about these things really does need attention at a more aggregated level, a District Emergency Management Committee and local governments helping each other. We've seen evidence, quite a bit of evidence, since the Yarloop disaster, of local governments working very closely together, and we have a close alliance with their peak body, WA Local Government Association, to share resources and to also identify issues early, so that we can step in, and a system, particularly with the psychosocial stuff, and perhaps wheel in the Department of Communities who ought to be involved from the outset anyway, and Red Cross and others who have very good programs to address this.

So, essentially, it's the planning stuff. Getting role clarity, so everyone knows precisely their role in the system. The local government aspect is absolutely critical of local involvement, local ownership. We've talked briefly about critical infrastructure, because then that... you know, if the power goes out and other critical... phones go out, it does have an effect on people's ability to

communicate and get together. And, of course, funding sources, I've mentioned grants and others, to help them set up systems and address the issues identified.

5 DR JOYCE: Thank you, Mr Cronstedt. I might just  
circle back around to vulnerability, which has been raised in a number of your  
responses so far. And we have heard some different definitions of  
vulnerability in these hearings. One definition sees vulnerability as an outcome  
10 as a propensity or predisposition to be adversely affected, independent of the  
hazard or the exposure. Does SEMC apply or use a specific definition of  
vulnerability as it applies to individuals or groups?

DR EDWARDS: Thank you, Chair. I guess, from our  
15 point of view, we understand that the two definitions are not mutually  
exclusive. The background is, the first definition has been derived from an  
ecological systems model. Some researchers argue this model does not  
adequately translate into the complexity and adaptive capacity of cities and  
20 communities. The second definition recognises some individuals and systems  
are very sensitive, with little adaptive capacity and therefore vulnerable to any  
change. For our own purposes, under the Western Australian State Emergency  
Management Glossary, we've defined vulnerability as the characteristics and  
circumstances of a community system or asset that makes it susceptible to the  
25 damaging effects of a hazard, which really picks up the Venn diagram analysis  
that Mal was referring to before.

There are many aspects of vulnerability arising from various physical, social,  
economic and environmental factors that vary within the community and over  
time. This definition is adapted from the UNISDR terminology on disaster risk  
30 reduction. And then from that, we then go on and talk about the six key themes  
under the State core objectives I referred to earlier. So clearly, vulnerability is  
closely related to risks and hazards. The SEMC considers vulnerability in  
relation to the specific hazards defined in the *Emergency Management Act*. So  
I'll just make those initial comments and I'll look to my right to see if Mal or  
35 Heather would like to add further. Thank you.

MR CRONSTEDT: Perhaps I can add a bit. So the Venn  
diagram is quite instructive for me. When we're dealing with local  
governments, local communities, local... I think we try and avoid  
40 nomenclature, terminology that might be confusing or beyond their experience  
or not familiar to them. So I think we like to simplify things as much as  
practically possible and make it translatable and understandable. So we live in  
this world of EM and all that it means, the jargon that comes with it, but it  
doesn't go well when you have to translate that or actually use it in practice. So  
45 I think a simplified version of the Venn diagram or... we have various ways of  
describing, "There is a source of risk" – a fire, a heatwave, whatever it is –  
"Think about how you might experience that and how you might cope or  
otherwise with it". So I think we need to be careful. We have these

definitions, but when it comes to dealing at the very local level, I think we need to simplify it greatly and make it really tangible and practical, because people just want to fix it.

5 DR EDWARDS: And if I might add, in terms of Mal referring to tangible, vulnerability can be, for example, at Perth Stadium, when there's an event on there. There's clearly some degrees of vulnerability that are not there when the stadium's empty. In the southwest of Western Australia during that period, really, from Christmas right through to past Australia Day, 10 obviously bushfire vulnerability then becomes a much greater... the vulnerability of bushfire risk becomes a much greater concern. Rottnest Island, when it's well populated, then the risk and vulnerability becomes... and so, I guess, in terms of Mal's observation about tangibility, it's a changing arena, but it depends upon where people are and what the circumstances are at that time.

15 MR CRONSTEDT: So if I might add, emergency management, and I think, heatwave, the particular hazard you have a great interest in, it goes well beyond the emergency management industry we think about every day. We live and breathe it, but, you know, the changing climate 20 we're experiencing and the effects that has in exacerbating natural hazards have been reflected on people, I think – I've actually lost my point here, sorry.

DR EDWARDS: Well, I think, if I can muddle over it, I think it really comes down to we see our responsibilities extending right 25 through to providing an information framework that, for example, hospitals and individual GPs would say, "Well, this is the kind of scenario that's been painted", as Mel said, about a heatwave, "So we can expect, potentially, more hospital admissions in emergency, particular prolonged days, and especially from elderly people and people less able to cope". And so we understand our 30 role is to try to set that up and then say, within your context, if I might, as the tribunal, we understand there are consequences of the health system.

MR CRONSTEDT: I remember what I was going to say now. Sorry, Chair.

35 DR EDWARDS: Was it different to what I just said?

MR CRONSTEDT: Slightly. I think emergency management cuts across a huge field. We think about it every day in a very confined way. 40 But the fact is, these hazards cut across our whole society, government systems. They go well beyond the little bits that we are exposed to daily. That was the point I was making. It's a community thing.

DR EDWARDS: Yes.

45 DR JOYCE: Thank you, that's very helpful, and particularly the examples you provide of vulnerability in WA has been helpful for the Inquiry. Just noting we've got a few minutes left, I might just ask one

last question. Taking a step back, I guess, the State responses to emergencies usually align with national and international frameworks. Could you briefly describe the international Sendai Framework for Disaster Risk Reduction, which came out in 2015, and the National Disaster Risk Reduction Framework, from 2019, and how you think they may be relevant to WA?

MR CRONSTEDT: Sure.

DR EDWARDS: I'll direct you to Mal, thank you.

MR CRONSTEDT: So the Sendai Framework has been around for a while, since 2015. And it has an expected outcome of "the substantial reduction of disaster risk and losses in lives, livelihoods and health and the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries". And as you'd expect in a hierarchy, if you like, that it'd be very global and very, you know, broad in its scope and its language. Translating that into something we can use in Australia, there are a number of targets within that Sendai framework which we report against. Western Australia contributes to a national report, which goes to the UN.

But, encouragingly, some of the things that we're doing at a national level, which also involves the states contributing, is the national disaster resilience, which was a product of considering how we're going to meet Sendai. And there are a number of priorities in that, that link directly to the Sendai framework: understanding disaster risk, strengthening risk governance, investing in disaster risk reduction and advancing disaster preparedness. I won't read the "disaster resilience", we're happy to provide that to you. It would be too laborious, I suspect. But there are direct links all the way through to that framework and the national one. And more recently, there's, as I mentioned earlier, a National Disaster Risk Reduction framework, which ultimately, will be tied to some funding arrangements, where we seek to understand the disaster risk. And for Western Australia, that's a big tick, because we have a really thorough understanding at the State level, the district level and increasingly, at the local level, of our risk profile.

"Accountable decisions", which essentially comes back to governance and the SEMC, and how we allocate resources and make policy choices and decisions, and government, of course. "Enhance investment" – I've talked about grants programs and a looming bucket of funding that will continue to be directed this way. And the last one, "government's ownership and responsibility", so allocating accountability and performance indicators to those responsible for implementing it. And there will be a national action plan, which is still in negotiation, to deliver on that. And of course, the risks we're talking about, exacerbated by the changing climate we're seeing, one of which is the heatwave, will be directly addressed through that. And it's a long game, of course. So that really ties them all three together. Happy to provide the



Inquiry with all of those documents or any that you wish to explore, perhaps link into your work.

5 DR JOYCE: Thank you. That would be wonderful.  
We might follow up with you later around that.

10 DR EDWARDS: Yes. And Chair, just in closing, if I  
might say, look, thank you for this Inquiry. We welcome the opportunity to go  
anywhere to tell our story. So we see this as a continued conversation. This is  
the kind of draft emergency preparedness report that's currently with the  
15 minister. As I say, when that comes out, we're happy to bring that to you. I  
know that, for example, a colleague, Dr Tom Hatton in the Environment  
Protection Authority, he always looks forward to receiving this. But we also  
take it to local communities. And you know, the interesting thing that we've  
20 learned... and there it is, and it looks a big report, it's got a lot of material in it.  
But when I've gone to local groups, volunteer firefighters, for example, their  
responses, "goodness me, I didn't realise we thought this only happened here.  
We didn't realise the things you're writing about there happen at Greenbushes  
or in Carnarvon or in Broome". And so I guess it's that, when you link people  
25 together, you get some powerful responses. So that's why, from our point of  
view, to be able to come here today, we welcome that. And I consider this part  
of a continuing conversation. As we've said, if there's anything further we can  
assist you with, we certainly wish you well in the Inquiry. So thank you for the  
chance today.

30 DR JOYCE: Thank you very much, Dr Edwards. And  
we certainly appreciate your input today, but also your input throughout the  
Inquiry process. And I agree that it is a conversation that needs to continue so  
that we can take advantage of the skills and expertise the State Emergency  
Management Committee has to offer. That's a good place to end it, I think,  
today, so thank you very much for your attendance at today's hearing.

35 A transcript of this hearing will be sent to you so that you can correct minor  
factual errors before it is placed on the public record. Please return the  
transcript within 10 working days of the date of the covering letter or email,  
otherwise it will be deemed to be correct. While you cannot amend your  
evidence, if you would like to explain particular points in more detail or  
40 present further information, as we discussed earlier, you can provide this as an  
addition to your submission to the Inquiry when you return the transcript.  
Once again, thank you very much for your evidence today.

MR CRONSTEDT: Thank you.

45 DR EDWARDS: Thank you.

HEARING CONCLUDED