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TRANSCRIPT OF PROCEEDINGS

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MELBOURNE WATER

THE HONOURABLE G. PAGONE AM KC, Chair

MR M. BABISTER, Panel Member

PROF H. MAIER, Panel Member

MR T. PEGGIE, Panel Member

PUBLIC CONSULTATION SESSIONS

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MOONEE PONDS, VICTORIA

9.14 AM, MONDAY 17 JULY 2023

THE HON G. PAGONE AM KC: Welcome to you all. Let me begin by acknowledging that we meet on the traditional lands of the Wurundjeri People, and I pay respects to their elders past, present and ongoing. We also thank the Moonee Valley Council for making available their facilities for the public consultations over
5 the next few days.

The independent review panel is constituted by me, as Chair, together with Mr Mark Babister, Professor Holger Maier, and Mr Tim Peggie. Our terms of reference contemplates six stages of which the fourth is public consultations, and we have
10 scheduled this week for those consultations and have published the times and topics on the Melbourne Water website.

This is the first public consultation session for the independent review panel which was established by Melbourne Water to undertake an independent and transparent
15 review of the Maribyrnong River flood event which occurred on 14 October 2023. The panel is not a statutory body and has no power to compel attendance or to give evidence. The panel has, however, received a great deal of information that it is working through in preparation of its report which is due later this year. We have requested a number of persons and entities to assist us with our review and, in the
20 case of some, to participate in public consultations this week. Some have declined to participate in the public consultations, but we thank those who have agreed to participate in the public consultations, and all who have assisted in our inquiries thus far.

At this stage, the public consultations scheduled for Tuesday afternoon with the Rivervue managers and developers, and on Thursday afternoon with the Maribyrnong Community Recovery Committee will not take place because both
25 have declined our request to meet with them. The public consultations are being transcribed to ensure that we have an accurate record of the information and submissions which we receive, and on which we will be able to base our report. Members of the public have been admitted as observers, but their attendance as
30 observers is on the basis that there be no taping, filming or photographing of the proceedings in any way. Any observer, however, is free to make any further written submission to the panel on the basis of what they observe during the consultations.

35 The first session of these public consultations is with Melbourne Water which is present here today through Nerina Di Lorenzo, Rachel Lunn, Wendy Smith and John Woodland. Thank you for your attendance. Melbourne Water has been asked to address the panel on the matters in the terms of reference, and to make its
40 submissions on what it considers should be the panels conclusions. We have already received much information from Melbourne Water. I don't wish to call it a deluge, but it might have that sense of it, and propose to ask its representatives some questions about the matters in that material which has been indicated to them.

45 Some of the information – some of the material is confidential, and not available, generally, to the public or through the Melbourne Water website. However, it is

important that the panel's work be as open and transparent as possible to ensure that the public can have confidence in its work, as being independent, and we need to balance the requirements of confidentiality with those of openness and transparency. May I turnover to you now, Ms Di Lorenzo, and have you address on the matters that you wish to deal with.

5 DR N. DI LORENZO: Thank you. Thank you, Mr Pagone, and thank you to our panel. I really appreciate being invited to have an opportunity to address you today, and to provide some contextual information and some information that we think will be useful in consideration of the terms of reference and the matters that will, no doubt, be top of mind. I would like to also add my acknowledgement of the Wurundjeri People, and also acknowledge any residents who are here today who may also have experienced this flood event, particularly residents of the Maribyrnong township, Rivervue Retirement Village, Keilor, Flemington, Ascot Vale and Darraweit Guim. So we just want to start with acknowledging those residents and their experience of – of flood and what that means. I'm sorry. I will just make sure that's loud enough.

20 UNIDENTIFIED FEMALE: Yes.

DR DI LORENZO: Can you hear me. Is that okay. Yes.

MR PAGONE: I can hear you perfectly well. I'm not sure that the people at the back can, but – and, indeed, I'm not sure whether these are working. Yes. They are.

25 DR DI LORENZO: Is this better. This is probably better.

MR PAGONE: Yes. That's much better.

30 DR DI LORENZO: Okay.

MR PAGONE: Yes.

35 DR DI LORENZO: Fantastic. Okay. So I – I propose now to give a very – a reasonably short presentation and I will do everything I can to answer any questions of the panel - - -

MR PAGONE: Of course.

40 DR DI LORENZO: - - - either during or after the presentation. So if we don't have the information on hand we will be able to come back.

MR PAGONE: Thank you.

45 DR DI LORENZO: We will also be very conscious of seeking to do that without seeking to prejudice any party or any other proceedings. So we will be thinking about how that is provided, but we will be endeavouring to answer and provide all of

the information requested. The panel will also be aware that, over the recent weeks, Melbourne Water has supplied a range of documents, as you made reference to. Those are assessments and reports on what happened in October 2022, and they're – they've been carried out from the moment of the flood, and they are continuing, and so the – the thing I would like to just make a statement about is that we are – we are a work in progress still. As new information becomes available, we will provide that to the panel and respond to anything else that arises.

MR PAGONE: Thank you.

DR DI LORENZO: So a brief outline of what I'm proposing to cover today, so I'm proposing to start by covering a few important contextual matters that inform these issues. For example, our role, funding model and how we manage risk in the Melbourne context. We think that will be important as some context. The flood event itself, our work before, during and some reflections after the event – some – some insights and considerations that we think are useful – or will be useful, and also some specific matters including matters relating to flood modelling, Flemington flood wall, and the Rivervue development. So they're three very specific matters that we thought would be good to – we would like to address and provide some information on, and also we have three subject matter experts who are with me today who will also provide some – some additions to the opening statements.

They are John Woodland, who is the Head of Waterways & Catchments for our South-East Region who will be able to provide some information on the incident response and flood warning notifications. John was also Melbourne Water's incident controller on the day, so he can – he is here with lots of insight that he can provide and respond to questions. I'm joined by Dr Wendy Smith, our Senior Manager, Waterways, Catchments & Drainage, who can provide information about our flood modelling program and – and can dive into any detail there as your – as per your request, and I'm joined by Rachel Lund, General Manager, Urban Planning & Development, who can provide information regarding our strategic planning and development function, and related specific matters, and so I'm proposing to make some short opening comments and hand to each for - - -

MR PAGONE: Of course.

DR DI LORENZO: - - - very short additions, and then we would propose to pause and respond in any way as you wish.

MR PAGONE: That's convenient. Thank you.

DR DI LORENZO: We would make a – a – a small request that at the end of today's proceedings it would be very valuable for us to playback to you some actions or items we might take out of here that we could furnish with you.

MR PAGONE: That would be helpful. Thank you.

DR DI LORENZO: Okay. Fantastic. Thank you. So just very briefly to set some context, Melbourne has 25,000 kilometres of waterways. This is – this is what makes Melbourne so liveable. It's part of the fabric of Melbourne. The waterways are loved. Being able to access those, being able to live near them, being able to have them as part of our lifestyle is – is highly prized. What we also know with 25,000 kilometres of waterways is that they expand and contract according to how wet the conditions are, and when they do expand they have a potential impact on infrastructure, and we refer to this as riverine flooding, and this is the type of flooding that was most relevant in the October event, and you can see there are other types of flooding.

I won't go into all of those details, but just to provide some context of the type of flooding. This information provides – well, it informs development, and we provide this information to show what areas have a one per cent chance of floodwaters in any given year, and so we show what a one per cent flood looks like across Melbourne, and if you see that in the map it's – basically, the middle blue colours on the map illustrate where floodwaters will come from an riverine event. Now, you notice we talk about that in terms of probability. We're effectively using – we're trying to predict a future event based on past data and that's really what our models do.

Now, there are over 200,000 properties across the Greater Melbourne region that have a one per cent risk of flooding any – in any given year. The VICSES website, councils, and section 32 property certificates hold information for residents inland subject to inundation overlays, and so I think the critical thing I just want to draw out on this slide is just the recognition of how – how much we have in – in respect to waterways, and to recognise that it's – living with this natural hazard is very similar to the hazard of bushfire and really thinking about what we can learn from bushfire risk management. So moving forward, Melbourne Water has a very important role in floodplain management, which I – I will talk about in a second.

But just to give you some context, there are many roles in flood management and Melbourne Water works with over 50 organisations that have some form of touchpoint in flood management across the region. A very large cohort being councils. So we have 38 councils that we work with who administer and enforce planning schemes, make development decisions, apply zones and overlays. They manage local drainage networks that service less than a 60 hectare catchment. They do their own flood modelling and mapping for their local networks. They also undertake flood planning and coordinate local emergency management, and they support recovery.

We do a lot of work with the SES as the designated control agency for flood emergencies, and – and – and they are a key touchpoint with community, and a lot of work with the Bureau in relation to weather warnings, and with Emergency Management Victoria in relation to flood warnings to the community. There are some other agencies which I will just – just mention that are responsible for setting the strategic and statutory frameworks for flood planning and management, and that is DEECA and DTP. We also work with the metro water retailers to manage impacts

on water supply and sewerage networks with the help of the Department of Health and the EPA, and the ESC as the regulatory authority on pricing. Of course, the insurance industry, community groups, individuals and businesses are also groups we work with in the recovery space.

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Now, just moving forward. So just – just now focusing on Melbourne Water's role in flood management. So within that context, Melbourne Water is the floodplain manager for the Greater Melbourne catchment, including the four major river catchments in Maribyrnong – the three, sorry, major river catchments in Maribyrnong, Yarra and Werribee, and their tributaries along with our smaller Dandenong and Western Port catchments. So what this means is we provide modelling of the one per cent AEP flood risk which is at the heart of what we do and is an important input into almost all of the other actions.

15 Now, modelling is something we will cover later. I will just comment that it is a very complex, sophisticated branch of – of science, and we will touch on that a little further. So I won't continue at this point with – with modelling, but we will come back to that, and we support councils in the application of flood modelling into their planning schemes. We are the referral – when they are actually in planning schemes and have controls in place, we are the referral authority. So we have the opportunity to object or to agree with conditions, or to agree with proposed permits. So that is a point where Melbourne Water can have a – a direct impact on development. We also work with the BOM and the SES to provide real time flood prediction information, which I can cover a little bit later.

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Now, the things I do want to just also note is that Melbourne Water has some very specific roles, but also we have roles that support others where we are not the agency. However, we do work to support that. So we don't issue warnings to the community. We don't have the direct contact. However, we support the BOM and the SES who do. We don't directly issue decisions on planning or building permits. However, we work with councils and, as a referral authority, support that process, and we – we are not a recovery agency. However, we support councils and SES, and any other recovery in place. However, just noting we're not a recovery agency as well. So a lot of our work is partnering with others.

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Now, I would like to just talk about how we manage flood risk and what our levers are. So I will just cover our levers and then the considerations, because there are things being to be balanced at each point as you're thinking through the levers to manage risk, and I think this is an important – important one – an important area. So we recognise you can't eliminate flood risk, but we can manage and minimise that as far as reasonably practicable within resources available. We have three key levers. As mentioned before, as a referral authority for planning and building permits, where controls exist, we can regulate how buildings are designed to minimise that risk.

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For example, setting floor levels with a 600 millimetre buffer above the one per cent flood level reduces – significantly reduces the chance of over floor flooding. That's one example. We make around 10,000 – well, it's above that now, but around

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10,000 of these types of decisions every year, and it's a really important lever, we think, because so much work happens each year to continue developing our building stock in Melbourne and it is the lever that is – creates the least expense for the Victorian community later down the track. So those earlier interventions reduce the
5 need for greater interventions at a later point, so it's a really important lever.

We work with the SES and councils to support flood preparedness and awareness. We know that – or we – we experience that improved preparedness does help reduce damage to individual properties, and that's work we do in partnership with the SES,
10 and that's a lever. We also provide guidance for floodproofing work with the SES, and flood awareness in building design as well. That may not be regulated, but it is a service we can provide. And, finally, we have an ongoing program of infrastructure projects that are – they help us either store water, move water or create barriers between property and water. So they are physical interventions, and we spend
15 approximately – well, at the moment we've got approximately 90 million in our five year pricing period to spend on infrastructure solutions, and they're prioritised based on a range of factors, but, particularly, public safety are the things – you know, the main factor that helps us prioritise where that infrastructure fund is spent.

20 But the big – big point I would like to make is that all those actions rely on modelling and flood information, and that's really critical to inform any of those actions. Now, considerations, I will just cover this very briefly, and we might come back to talk through that, if that's of interest, but in terms of considerations, you know, one of the things that is a consideration is the pricing model. We consider
25 how – how much that is resourced, how much we charge for against affordability. The main funding source is through our pricing submission. We – we have a five year pricing submission, so it was from 2021 to 2026. Our current price period is a total of \$270 million across Greater Melbourne, and that flows through into Melbournians' water bills, and so that is a – a balance that occurs every five years
30 when pricing is – is considered, and when resources are considered.

That funding must fund drainage management, so any renewals of existing infrastructure. It must also fund flood risk management, flood information and planning, and we prepare this price submission every five years. We undertake
35 significant community consultation about the balance, and then the ESC makes a final determination about what is able to be charged for and – and resourced. So that's an important consideration that is a balance. The second one is getting flood information into regulation. So it's just recognising that we might undertake the flood modelling, and that is important work, but in order for it to have an effect, and to be regulated against, it needs to be part of, you know, the – the planning scheme,
40 and it needs to have appropriate controls to then enable us to regulate to that information, and the main thing to draw out here is just a recognition that they are long processes, they are subject to appropriate checks and balances which are – which also provide challenges to – to the completion of those schemes. For example,
45 they need to be supported by councils, they also are subject to VCAT appeal, and so these are – these are processes that do take some time, and so we just note that as a consideration in getting the – the modelling into planning schemes.

- I think we just want to note the challenge of building and maintaining awareness to flood given its variability. It's a very variable event. A survey in 2021 conducted by Melbourne Water and VICSES found that it was around a 19 per cent level of awareness of – of being in a flood zone. So we think that's a place where we need to do more. We – we think there are some significant actions that can be taken in that – in that space, and, finally, we often think about infrastructure solutions. It's the first place we often go in our minds, and, as I pointed out, the regulation is – is so – so much more of an effective upstream intervention.
- But it's worth noting infrastructure solutions are part of the portfolio. They are things that we can do. They also need to be technically feasible. They need to avoid creating afflux which is where you place infrastructure in one place that protects one area, but potentially increases risk in another, and so any infrastructure solution must address the afflux and ensure that there are mitigations in another place that offset any of its impact, and also there will be other flow-on effects that need to be considered for infrastructure solutions. So it's noting that they are part of the portfolio, they are also longer term considerations, and they need to be thought through very carefully before being implemented.
- I will keep going. So in the leadup to the October event, I really want to just draw out a few small things from here on. I won't read all the parts of the slide, and we will provide this information to you - - -
- MR PAGONE: Yes. I was going to ask you about that. If you're proposing to give us the slides in some form, or other, we might sort of give it identification numbers. We might call the slide something like MW1.
- DR DI LORENZO: Yes. Okay.
- MR PAGONE: - - - so that anyone that needs to have reference to it will know what they are, but - - -
- DR DI LORENZO: Okay. We - - -
- MR PAGONE: - - - if at some point you could hand it up to Ms Dark, that would be very helpful. Thank you.
- DR DI LORENZO: We will do that.
- MR PAGONE: Thank you.
- DR DI LORENZO: We will do that. And so with that in mind, I will just pull the insights that I think are really important - - -
- MR PAGONE: Yes.

DR DI LORENZO: - - - from the slides. So, again, not reading through all of this, but just drawing out the days leading up to the flood event we were preparing for potential flooding across multiple catchments. We – we had high river levels, very saturated catchments, we had four days of consecutive rainfall, and we were in the
5 third La Nina weather event in a row. So very significant, sort of, conditions. At the same time, prolonged rainfall was having an impact also on water and sewerage assets with very high rainfall creating really challenging conditions, especially at our eastern treatment plant, which treats pretty much half the sewerage of Melbourne. So this was a very significant series of events which impacted lots of parts of the
10 network.

We stood up around – round the clock incident management teams which was an all hazards approach. We were looking at what – what it meant for waterways and catchments alongside of a whole range of preparatory work to make sure that system
15 worked as well as it could, making sure there were no blockages. All of the things that we would do prior to an event potentially happening. Along with monitoring water supply, dam safety, emergency relief structures for sewerage networks. So it's – it's a very big event – it was noted as a very big event, and also recognising that it was across multiple catchments. Now, you have this timeline, I think, in our
20 submission, and so just to narrow a little further our role in warnings, I think as we have discussed, is that we use weather data provided by the Bureau and this is updated frequently to reflect the weather predictions.

We put that through our models to turn into our flood prediction, and then, as the rain falls, it becomes clearer where it's actually falling and how it's behaving, and that's
25 where the data from our gages starts to input into the model, and so it's a dynamic live system. Things can change very fast during an event, and our information also informs the SES so that they can make decisions about where their resources go, and what they do on the ground. Now, we note that a Flood Watch and Act for various
30 catchments was issued on the 11th October. We moved into our flood response protocol then. On the 13th October, Melbourne Water prepared and sent the first major flood warning for the Maribyrnong which was issued by the BOM.

Now, this ramped up response. We went to six hourly model runs. More frequent
35 and around the clock constant model runs. On the afternoon of the 13th we had a change in weather forecast which moved it back to a moderate flood warning. You know, it's important to note that is – that is a common thing. The weather forecasts will change as – in the leadup to the event, as – as things develop, and it – it should just be noted that that can happen very quickly. Around 12.30 am on the 14th of
40 October, Melbourne Water identified that the river was rising faster than expected, and our gage data showed that – or showed that there was higher stream flows in some locations, which led to an update in predictions and led to the issuing of the exceeding major flood warning.

It's important to note a model run takes between 30 and 90 minutes, and another 20
45 to 40 minutes to process model outputs. It just depends on how clear those are. Now, the last two important things to note here are – as I said, things – things happen

very fast, and you are relying on flood predictions based on weather predictions, so you've got two sets of predicting models at play here. And that the adjustments made at 12.30 am, we think, would not have been apparent at the previous model run at 8 pm, because we could see that the gages were still at moderate at that point, so it
5 hadn't actually landed. So I think that's worth drawing out and very open to further – it's something that might – might be of further interest.

Now, immediately after the event – again, I will not – I won't read all of these – these points. We will submit that. But key points, we were continuing to manage the
10 impacts to the water and sewerage network. That was many weeks of – of heightened work to make sure our sewerage system, in particular, was able to recover from the inflows. We did a lot of work with council partners, and Parks Victoria to work through, clean-up activities, and allocate them between our organisations. We did around 850 maintenance work orders along 40 kilometres of waterway. We
15 conducted also a series of community engagements. You know, that – that included attendance at some of the Maribyrnong engagements, but also Melbourne Water's four in-person drop-in sessions, and two online sessions.

They were to facilitate providing submissions into – into this process, but also, very
20 pleasingly, were attended by a range of agencies – you know, the recovery agencies that included councils, VICSES, Emergency Recovery Victoria and Red Cross. So also an opportunity to make contact and to include those agencies in those consultations, and, finally, just to note the establishment of this review process. So I won't go further there. Now, I think this – this slide is worth just spending a little bit
25 of time on, and it's just to draw out some more systemic observations and some actions that we think are worth both sharing and also we – we await the further findings of the review, because, no doubt, that will continue informing the systemic action.

30 So we have several areas. I think recognising the flood models and flood information are at the heart of managing flood risk. We have been reviewing the existing Maribyrnong model and engaged specialist experts to do that, and I will cover the findings of that in a second. But more broadly, we have moved into the acceleration of our flood modelling program to encompass climate change
35 predictions to the year 2100 for all catchments in Melbourne with a commitment to achieving this by 2026. Now, this important and significant, and I just want to draw out that comment I made about pricing submission. So we have a \$14 million budget in this pricing submission to do the five years of flood modelling.

40 That is a significant uplift from previous price submission which had \$3 million allocated to modelling, and so what we are signalling here is a real dialup of one of the most critical things that informs flood risk. So that has occurred, but also we have committed to accelerating that to complete that by 2026, which is faster than the strategy that was one of the actions we took to – to work through, well, what are the
45 things you accelerate in your strategy taking into account what we – what we are seeing happening, and that will be an additional 10 million that we've committed to, so that we can complete that program by 2026. This is really important. It lets us

plan ahead with the year 2100 – or, sorry, the year 2100 in mind, and it gives us the time for building stock to be renewed with that standard in mind.

5 A few other points to just draw out. We heard lots of feedback from residents about how stressful and how it felt to receive warnings, and to – to be in the situation and – and to wake up and to – to have that warning happening in that – in real time. We – we really believe this is an area that we need to do some more work with in conjunction with our partner, the SES. Particularly working through what happens at the watch and act stage knowing that we have to also balance that, because we have
10 watch and acts happen quite – quite regularly. They don't all eventuate into the type of event that happened. However, this is a place where we think more – more work should occur. So we draw that out as a systemic area, and we've committed to doing some work in this space.

15 In the short term, we will be doing some further work with the affected residents in the leadup to the next spring. So we will be doing that, but, more broadly, we think this is an area that needs to be elevated. A few other points, we – we have been looking – well, we have announced our intention to transition flood prediction and consolidate our roles, and again this is to reduce handoff points between agencies.
20 We're looking to keep making sure that process continues improving and being as fast as it can be. We're reinstating the flood leadership group recognising that the – across 50 agencies, that channel to keep coordinating work is going to be really important.

25 We have undertaken preliminary review of previous mitigation options which have been canvassed over the years, but we recognise the models need to be updated before you can be very sure of what mitigations ought to be put in place, so that you're using the best data. And, finally, we continue to improve our urban planning and development function within the business to keep processing those complex
30 development matters which we think are a very important lever. I think the last comment I will make here, and again without more detail is, we expect that under climate change scenarios whether events would become more unpredictable. We expect when it's dry, to be drier; and when it's wet, to be wetter. We expect more extreme types of events, and so, again, we are really actively looking at where we take lessons from the way we manage bushfire risk into the way we manage flood
35 risk in Melbourne.

So moving to address some specific matters the panel has requested to be covered starting with flood modelling. So my colleague, Wendy, will be – will be elaborating
40 on – on this, but to recognise that flood modelling is a complex process, it takes considerable time to undertake accurately, we commissioned flood modelling – we commissioned flood modelling from specialist consultants who employ specialist flood modellers. It's a very specific skill. Since the October event, we sought external independent review of the models for the mid and lower catchment – lower
45 Maribyrnong catchments. This has been shared with the panel and Wendy will address that, but at a higher level we want to note that the lower Maribyrnong model

has been reviewed and has been found that there was very good alignment between the model and the flood event – you know, the way the actual water behaved.

5 So that's a – a – a result from the review of the lower. In relation to the mid-Maribyrnong model, that has also been reviewed and has been found that in some places it didn't behave in the way it was modelled. So I want to draw that out. That is a key piece of work that has been completed over the last – last few months. We're continuing to investigate that. That needs more time to work through, and so we're not in a position to – to sort of speculate on its cause at this stage, but we do
10 want to draw that out, and we want to draw out that we will be looking to have a suitable interim model by August, and then the new model for the whole of the Maribyrnong would be complete by April next year. So I do want to draw that out.

I think I will – I won't continue on that. I will leave that for my colleague to address.
15 The last two slides are on the Victorian Racing Club wall and Rivervue. So I just want to draw out what we've been able to establish recognising that you take those things into consideration and draw your views. So in 2004, the VRC applied to construct flood mitigation measures for the racecourse and supported this with a range of proposed compensatory measures at other locations to offset changes in the
20 floodplain. Now, we've gone through our files to establish the considerations Melbourne Water made and have provided critical documents to you.

What we've been able to establish so far without drawing conclusions, here are the things that we feel we can establish: We can establish that the floodwater in the
25 lower Maribyrnong behaved close to the model's predictions. That was independently validated via the Jacobs' work. We – we believe – or we can – we can see that the VRC technical information which underpin the application went through multiple levels of independent review, and that independent review found the parameters to be appropriate to manage afflux. So that – we saw the layers of
30 review. We've been able to find that. The modelling put forward by the VRC at the time indicated that the mitigations would negate the flood risk posed by the wall.

In fact, more than offset that flood risk, and so those two significant mitigations were changes to the Footscray Road and Northern Rail Bridges, and, effectively, that is to
35 increase or make sure there are culverts, so that any build-up in water flows through more quickly in other parts of the system, and, therefore, reduces its net effect. That's how that is intended to work. What we've been able to – what – what we've been able to, I guess, confirm is that those things were built. We've been able to – to validate that and to see that that – that has occurred, and – so we – that's as far as we
40 can go at this stage. We've been able to see those things.

To understand whether it was, in fact, the outcome during the flooding event does require that further modelling to occur, so we've been able to go as far as to see the technical basis, and to see the basis of the actual model to see, you know, the – the
45 basis of those mitigations being able to offset the impacts. In terms of whether it actually behaved that way, that would rely on the updated model. So that's – that's as far as we've been able to go to date, but we will continue providing information if

it becomes available, as it becomes available. In relation to Rivervue, now we recognise we are – there are many parties involved in Rivervue, and we're one party with information.

5 So we've supplied all of our files to the panel, and we note that the developer, GHD, council, residents may also have other information. So we're making these comments in light of what we know, but also recognising there will be other – other sources of information to support this. It's clear from the work that we did to independently validate the mid-Maribyrnong model that the flood behaved
10 differently to what was modelled in that location. So that was the comment I was making before about further validation of the models. It's clear that there is a long history of decisions and development at that site spanning from the early 2000s, so there are multiple points at which decisions were made. It's clear that there are multiple parties that had a touchpoint, including Melbourne Water had a touchpoint
15 with all of those decisions and were part – part of those things, along with council, along with the developer GHD.

At this stage, we – we can see, on aggregate, the outcome that has occurred there has resulted in behaviour that was different to expected. You know, we can see that, and
20 we can see that there were 47 dwellings that experienced some level of over floor flooding, whether it's several centimetres all the way to some of knee height. Over two – two – the two decades of development at that site, we believe that is an area that really needs further examination. We can't conclude any individual – we can't make – you know, draw further conclusions at this point, but we do submit our
25 information, and do submit that is an area that, you know, will need further work to understand – to understand, you know, the contribution of all of those different issues. But we do want to draw that out and acknowledge that.

In the meantime, we are seeking to continue working with residents, particularly over
30 the coming weeks in the leadup to the next spring, to implement a range of actions that manage flood risk, including working with them and relevant agencies on site specific flood emergency plans, and continuing to improve warnings and notifications. We will provide further information as that becomes available, and we assure this will be an area of further – further discussion. I'm going to pause on that
35 and, with your permission, just hand to - - -

MR PAGONE: Yes. Of course.

40 DR DI LORENZO: - - - my colleagues who will just cover a couple of additional matters, if that's okay.

MR PAGONE: Thank you.

45 DR DI LORENZO: Yes. Okay. Flood event. That's John.

MR J. WOODLAND: Thank you. Thanks, Nerina. Hi, I'm John Woodland and I work in the Waterway & Catchment Services team at Melbourne Water. A part of

my team plays a key role in flood forecasting which, in turn, supports flood warnings to the Bureau of Meteorology. The – this slide here takes us through the rainfall and the streamflow aspects for the event over the 13th and 14th of October. In the upper – in regards to rainfall in the upper catchment, the rainfall event has been estimated at
5 between a two per cent annual exceedance probability event and a one per cent annual exceedance probability event over the 48 hour period. What this tells us is the rainfall fell differently across the catchment.

Analysis of antecedent conditions found that the Maribyrnong catchment
10 experienced significantly wetter than average conditions for spring prior to the event on the 13th and 14th of October. There was also a rainfall event on the 6th – between the 6th and the 8th of October of between 30 and 40 millimetres. So the preceding rainfall contributed to a wetter than usual conditions in the catchment which exacerbated the runoff response from the catchment. If you – if you think of a dry
15 sponge, catchments behave very – in a very similar way. If you put water on a dry sponge, some of the water is soaked up before it starts to runoff, and, conversely, if you have a wet sponge and you put water on it, it will come off more quickly.

In regards to streamflow, Deep Creek at Darraweit Guim reached a peak stage of
20 7.22 metres on the 13th of October, and that's the highest since records began in 1975 for that location. The peak flow of 280 metres cubed per second was close to a one per cent annual exceedance probability event, which is 300 metres cubed per second. The Maribyrnong River at Keilor recorded a peak water stage of 8.64 metres on the 14th of October. That's the highest record since the 1974 flood event. The peak flow
25 rate of 768 metres cubed was just – per second was just above a two per cent annual exceedance probability event, which is 760 metres cubed per second. The Maribyrnong River at Maribyrnong, peak water stage, reached 4.22 metres. That was on the 14th of October. Assessed as the third largest in terms of level.

30 So for this, the key message or take aways are that, really, the annual exceedance probability of a rainfall event doesn't necessarily correspond with the annual exceedance probability of a flood event, and this is because the catchment conditions determines how much rainfall ends up as runoff – coming off the catchment, and, as mentioned, a dry catchment soaks up more rain, whereas a wetter catchment allows
35 more runoff. In regards to catchment response times, the travel times that we calculate are derived using actual data from our various water level gages in the catchment, and the – the velocity of the – of the streamflow is affected by many factors, including the shape of the river – you know, if it's straight or winding – the gradient and slope of the river, the capacity of the river – you know, larger rivers
40 may flow faster in high rainfall events compared to smaller rivers – the amount of friction in the river such as rough or jagged edges within the riverbed, and also structures impact the velocity of the water as it comes down, but the thing to notice there, as they become submerged, they have a lesser effect on – on the – the velocity of the water.

45 For the Maribyrnong, the travel time from Darraweit Guim to Keilor is nine to 20 hours for a minor flood, six to 18 hours for a moderate flood, and four to 16 hours for

a major flood. Obviously, the larger the flood, the faster it arrives. For the October event, the travel times were assessed at 10 hours. This represents the – the flood peak between Darraweit Guim at Deep Creek to the Maribyrnong River at Keilor. This slide shows the rating table for the Keilor gage. Now, a – a rating table shows a historical relationship between a river height and river flow. This allows the actual recorded height of the river, for which we monitor 24/7, to be converted into a corresponding streamflow from a gage reading. The rating table also allows model streamflow to be converted into a corresponding river height.

- 5
- 10 Very stable spots in a river are chosen for the gage site, so the shape of the waterway at the location doesn't change over time. A stable river shape is critical in keeping the relationship valid for historical measurements. So based on actual measurements taken over many events, a line of best fit is developed for the relationship between streamflow and river height. If you look the graph there, the – the green line
- 15 represents the line of best fit that we had at the time of the October event based on historical measurements. During the October event, the green line was used by Melbourne Water to determine the corresponding forecast river height from the modelled streamflow for the forecast rainfall. This information – this informed the basis of the flood warnings that were developed by Melbourne Water and that were
- 20 subsequently issued to the Bureau of Meteorology.

- Now, when it was safe to do so during the October flood event, hydrographers were able to take streamflow and corresponding river height measurements, while the river was still high, to help improve our understanding of the relationship between the streamflow and the river height at the Keilor gage. The new line of best fit on all the data, including the October event, is represented now by the red line. With this new information, the rating table has been updated with the new line of best fit. This means that the rating table will be more accurate in a higher streamflow range for any future events. You know, after each event we gather data to improve our
- 25 capability and build that into the future, and you can see there the – the picture above actually shows the hydrographers taking measurements during the October event when the river was pretty much at its peak.

- 35 This – the screenshots on this slide show the types of screens a flood warning duty officer sees when they are undertaking modelling, forecast and – and monitoring flood events. These are taken from the training manual, and they don't represent the actual screenshots from the flood, but these are – are screenshots from our training manual. The flood forecasting model is – used at the core of our modelling is the Unified River Basin Simulator known as URBS. URBS is a hydrological model and
- 40 uses forecast rainfall from the Bureau of Meteorology, real time actual rainfall and river level data from our hydrometric monitoring network. URBS determines how much river flow is forecast from a rain event. The flow can then be used to determine the forecast flood hydrograph indicating whether we expect minor, moderate or major flooding into the future, and this could be done potentially two to
- 45 24 hours before that time – that point in time.

The outputs are reviewed by a flood warning duty officer. So there – there is human intervention to – to truth it and – and – and look at the outputs of the model, and, if necessary, a flood warning is provided to the Bureau of Meteorology. Model runs take 30 to 90 minutes with a further 20 to 45 minutes required to process the information, and factors that affect model runs include, you know, the size of the catchment, the larger and more complex will take longer, and the time taken to get alignment between a model and real time data. So the resulting flood forecasts are used to provide flood watches and also flood warnings issued to the community by the Bureau of Meteorology, and also we support that VICSES planning and resourcing with this information. Thank you.

DR DI LORENZO: With your - - -

MR PAGONE: Thank you, Mr - - -

DR DI LORENZO: With your permission, could we - - -

MR PAGONE: Yes. Of course.

DR DI LORENZO: Just two more - - -

MR PAGONE: Yes. Of course.

DR DI LORENZO: Yes. Thank you.

DR W. SMITH: Thanks, John. So my name's Wendy Smith and thank you for the opportunity to present and talk with you today. I work in the Asset Management and Program Development part of Melbourne Water, and my teams manage a range of services for Melbourne Water across waterways, catchment management and flood and drainage services. Material to this discussion today is the services that my team undertake in flood and drainage management. Flood and drainage management programs, as Nerina was outlining earlier, are delivered with guidance from the flood strategy for Port Phillip and Western Port Bay, and that's a – a flood – that's a strategy that Melbourne Water has developed collaboratively with more than 50 partner agencies that Melbourne Water works with across our area of operations.

So under the auspices of this strategy, my team developed programs for flood mitigation works, drainage maintenance and renewal works, and also for flood mapping where in addition to the program development we also work with a panel of consultants to develop and deliver the flood models. Flood modelling is the industry way of understanding how far, and wide, and deep, and fast flood waters move. Flood models, and numerical computer models that are simplified representations, are complex catchment processes. They're not an exact science. They're a lot of assumptions and estimates that are made. Melbourne Water has had a flood modelling program now for more than 25 years, and we have a number of different types of flood models that are used for different purposes.

As you've heard from my colleague John, we have flood models that are used for warnings. The models that my team develop, as outlined by Nerina earlier, are used for development, planning and emergency management planning. Flood modelling practice has grown over the last 25 or more years, and flood modelling has become more sophisticated. This has, in part, been facilitated by the growth in computing power over this period. In the early years of flood modelling, Melbourne Water developed flood information only for the regional drainage network, the area that we have responsibility for, or for catchments greater than 60 hectares in size. In the last decade or so, though, we've been working with our 38 local Government partners to co-deliver the flood modelling.

In the Maribyrnong catchment, flood modelling was undertaken first quite early from Melbourne Water. In 1998 – in 1986, the MMBW – the Melbourne Metropolitan Board of Works, which was Melbourne Water's predecessor, undertook an extensive study that, amongst a range of other considerations, determined how far – far and wide flooding extended. The flood models have been updated in the Maribyrnong in the intervening period, and the latest models were constructed in 2003 by GHD for Melbourne Water. GHD are a professional technical services company. There are two Melbourne Water models of interest to – to the panel review. Nerina highlighted that slide earlier today.

The two that are of interest to – to this process are the lower Maribyrnong model which covers the area from Footscray Road to Plantation Street, and the mid-Maribyrnong model which covers the area from Plantation Street to the Canning Street Ford. At the time of the development of these models the lower Maribyrnong area was where urban development was centred. There was and remains very little urban development within the mid-Maribyrnong reach. The models of one-dimensional HEC-RAS models – one-dimensional meaning that it's capable of calculating flows and levels along the river length. It's a relatively simple model. HEC-RAS is the name of the model. It was developed by the US Army Corps of Engineers – includes a range of input information to power the model. For instance, river channel data, rainfall data, etcetera, and, as I said earlier, it was created by GHD in 2003.

It does not include climate change as it was not a requirement at the time. It was independently reviewed by Bob Keller, a professor at Monash University. A widely respected professional in this field at the time. He concluded that the study was carried out thoroughly, and that the results stemming from the study were accurate within the noted limitations of the data. Following the 2022 event, Melbourne Water commissioned Jacobs to – Jacobs are another professional services firm – to validate both models against the event. This was in addition to our own internal reviews. The figures shown on the screen are excerpts from the reports that were provided that detail the models and the – and the analysis that was undertaken.

The brown shape shows the estimated 2022 flood of – extent from survey and photographic data, and the blue shape shows the – the modelled one per cent annual exceedance probability event. As indicated by John earlier, the 2022 event was

5 estimated to be a two per cent event. So two – these – these probabilities are the – are the measure of the – the likelihood that the event will occur in a year. So the one per cent event was previously known as the one-in-100-years, because it's a one per cent chance of occurring, and the two per cent event was previously known as a one-in-50-year event, because it had a two per cent chance of occurring in any year. Both a one and a two per cent event are considered very large events, and we frequently, across all of our modelling across Melbourne, see a very close alignment between the one per cent and the two per cent flood extents.

10 The lower Maribyrnong model, as Nerina indicated earlier, Jacobs have found that there was good alignment between the modelling and the actual flood extent. For the mid-Maribyrnong model, we acknowledge that the model did not perform as expected in relation to the actual flood. Moving forward, as highlighted previously, Melbourne Water has been undertaking a flood modelling program for more than 25
15 years. In 2019, there was a major update to the Australian Industry Guidance for Flood Modelling, known as Australian Rainfall and Runoff 2019. Many councils, in parallel, have declared a climate emergency triggering a range of actions including revision of the flood modelling.

20 Melbourne continues to grow and is estimated to be Australia's largest city within a very short period of time. These changes have triggered, as Nerina indicated, an urgent need for updated flood modelling. Working with our panel of flood modelling consultants and our 30 local Government partners, Melbourne Water have commenced an escalated flood modelling program beginning in 2020. This will see
25 our entire area of operations remodelled by 2026. This uplift in modelling was supported by an uplift in funding through our '21 – 2021 price determination which was approved by the Essential Services Commission. We had a five-fold increase in funding. The maps show the five-year program. Blue is underway – modelling underway, and green is completed.

30 Included as part of this flood modelling is the remodelling of the riverine networks. The new Maribyrnong model, which will incorporate the reaches of the river – from above river view to the confluence with the Yarra. It will be a two-dimensional model. It will include – it will be undertaken to guidance provided in Australian
35 Rainfall and Runoff 2019 and will include climate change. It will include updated topography, bathymetry – bathymetry is the measure of the – the river – river shape. The work is complex and will take around 12 months to complete. We began in around March 2023 and it will be completed in around April 2024. The remodelling of our entire area of operations is a – is a large and complex program to which
40 Melbourne Water is committed to working with our partner agencies to deliver. Thank you.

MR PAGONE: Thank you.

45 MS R. LUNN: Thanks, Wendy. And thank you to the panel for allowing me to speak. My name's Rachel Lunn. I'm the general manager of urban planning and development at Melbourne Water and I have a planning background by trade. The

terms of reference for this panel did exclude broader policy matters in – in relation to urban planning generally, but we felt like it would be extremely useful following on from Nerina's presentation to just explain to the panel the context in which flood modelling is used in our decision-making around development.

5

So this diagram in front of you is, sort of, a snapshot, we hope, of how the land/water planning and environmental laws, regulations and policies intersect with flood modelling information and the Water Act and that one of the roles of my team is to undertake what we refer to more commonly as development control in urban areas.

10

Development control generally forms a number of different matters under the operation of strategic planning. So by that strategic planning would mean often the creation of policy or the creation of guidance. We don't mean that here. We mean the operation of strategic planning. That is to roll out planning scheme amendments or respond to planning scheme amendments where they relate to flood areas.

15

As Wendy has just explained, flood modelling is the basis of everything we do in – in development control in urban areas. My team take flood modelling information from Wendy's team almost in a value chain and we use that information to perform a range of functions that we're legislated to do as a floodplain manager or as a drainage authority or under a number of different functions. Strategic planning in this regards means the developing flood controls in accordance with state practice notes and guidance and applying those flood risks and flood characteristics to land and to the controls in planning scheme with our partners in local government.

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You may have heard of some of those types of controls, including urban floodway zones where development is extremely limited, and other types of controls such as land subject to inundation controls where some development may be allowable subject to the application of very specific laws and regulations, policy and practice note, including as shown on the slide the State Guidelines for Development of Flood Affected Areas. You may have also heard of special building overlays which is usually an overlay on the top of the land where we see a lower level of flood risk. So imagine different levels of flood risk have different planning controls.

30

35

The purpose of us creating those planning controls is to ensure that the local councils when they're receiving applications in areas where we know we have flood information triggers that requirement to come to our team under a variety of different legislative requirements. The one that you may be most familiar with is something called statutory planning or development control under the Planning and Environment Act, and that's where somebody wishes to build a – a new house or a hospital or a school or a warehouse and we take their application and assess it based on the State Guidelines for Development of Flood Affected Areas and a range of different legislative requirements.

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As Nerina alluded to in her presentation, my team's role is to provide decisions or advice to council or to land developers or to people wishing to extend their homes, a variety of different people, or to the state in relation to these development control matters. My team provide that information in what's called a referral and that's also

done through an electronic processing system. We don't actually issue the decision ourselves but if, in most circumstances, we direct the council that they must not issue a decision then the council must abide by that decision. There are generally three types of decisions that we provide. They're an objection, which means that no permit can be issued and we're required to provide the reasons for our decision.

Either an approval of the proposal, subject to no changes – that's very unusual. The third and most obvious is that we either request further information from the proposal asking for more information maybe about the design or the hydraulic risk on that site, or that we provide permit conditions and usually that's a relatively back and forth type of process. Planning and Environment Act in Victoria requires us to work with our colleagues at council to make sure that if there – that we work through can we issue permits and if we can that they are safe and they meet the legislative requirements and they adapt to the flood risk of the site.

And as Nerina said earlier, there might be a whole range of different decision types or changes to a building, such as setting floor heights, such as making changes, for example, that a garage might have to turn into a carport to let water flow through in a flood event. There are situations and there are control types where no development is allowable under those guidelines and there is an ever decreasing area for negotiation or for discretion in this area; however, decisions are still some discretionary depending on the flood risk as set out in those rules.

We also provide the same information around plans of subdivision so when somebody wants to take a larger piece of land that needs draining or in a floodplain and they wish to carve it up into sections or staged development we provide – we provide advice on drainage and to ensure that any flooding on the area is not exacerbated and if we can to mitigate it by where we allow the buildings to be put. Sometimes we can make the situation better by ensuring we've got good planning. And the last area that we do provide decision services on is building permitting, which is maybe a lesser known area of development control.

The Building Act requires that the private and municipal building surveyors provide Melbourne Water with any application where it's considered that the proposal in the Building Act is less than 300 millimetres above a known floodplain, and we receive around 5000 building permit applications a year. But, again, the decision-making is made by usually a private licensed building surveyor. My team are not the decision issuers in that case. And in the other matters there, I think in the last year we issued around 6000 plans of subdivision of standard planning permits and around 5000 building permits, all based on the best science and engineering evidence provided by our colleagues.

We thought of – it was worth noting that in 2019, so, sort of, relatively recently and in the years before that there was quite a lot of changes to how urban planning and development and building interact with water and flood risk. For many years now – and – and I've been with Melbourne Water for two and a half years and my team tell me that their decision-making has always been based on the best flood and

engineering science data available from our modelling or from any other modelling we're provided with that's been verified and that all our urban planning and development decisions are based on laws and regulations. We have a very, very limited remit of so-called going off piece here.

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All urban planning and development outputs that have been made since this 2019 State Guidelines for Development of Flood Affected Areas are based on the risk and safety criteria from that document. And that is an – an exceptionally clear document and there are very, very few cases where we would use any other type of scientific or engineering information and apply it to that. It is almost the rule book for everything we receive. New flood controls are being rolled out across Melbourne as new data is available from my colleague Wendy's team. And you may be aware that last year we rolled out the first major climate change flood information and planning scheme amendment to introduce new flood controls to the City of Melbourne which was a very, very significant undertaking.

So wherever there is new information available my team use it immediately because that is the best available information we have. And, interestingly, we use it – these – the – when it's been signed off by Wendy's team, my team don't amend that information or use it for any other purposes. They take it and use it as it is. Also in recent years, as climate change modelling, like the City of Melbourne, has come forward and as you hear it often quite surprises people the amount of properties that need to come to Melbourne Water for a decision – for a development decision, we've continued to add additional senior planning or flood engineers to support these more complicated decisions, and we've also added in new or improved internal processes and systems for holding the flood information.

We have now really contemporary geographical information systems to hold the flood information so that the decision-makers and my team can ensure that they can see the best available information. And given that we're processing a very complex and high volume service here, additional processes have been put in and – in the past two or three years as a – as a new system, which we call DevConnect, which essentially would be our end equivalent of what all the councils would have when they receive the information. It's somewhere we hold it.

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We can all see that we've all got the same information and make sure there's clarity about who's making the decision, the justification for that decision, what we were looking at at the time, where it's gone and how it's gone back out to council so we can track each and every one of those 10,000 or more applications a year using a pretty sophisticated piece of software. There's lots of other improvements that have been happening over the past few years and those are just capturing some of them for you, and I'm happy to take any questions on that at the end. So I'm just going to hand back to Nerina for a closing comment. Thank you.

45 DR DI LORENZO: I think that just – that concludes what we were proposing to – to share as an opening and welcome questions in whichever direction you'd like to take us.

MR PAGONE: Yes. Thank you for that. It's been very helpful. I should perhaps indicate for the benefit of – of the observers and – and possibly the general public that obviously a good deal of the materials that you've presented to us we might have picked up on the – the – the volume that – that we've had so far and the work that
5 we've done so far but it's been very helpful to have that material supplemented in some parts and synthesised for the benefit of those who are perhaps hearing for the first time, although I suspect that it would be few people who are following this who haven't already been quite interested in the background.

10 It's difficult to dissect and compartmentalise all of the issues that you've dealt with, and I know that – that my other panel members have got some questions that – that they – as I – as do I and some questions we'd like to ask, so what we thought we would do is try as best we can to deal with them in topics, although it may be that we jump around a – a little bit. Of the four topics that we'll – we'll – we'll start with we
15 thought were the flood planning or the flood warning, I should say, and then move to design modelling, including the Flemington wall issue. Then deal with Rivervue and two parts there, the flood level and the planning. So if we begin with the flood warnings.

20 MR M. BABISTER: Can I just start with a quick procedural question. We can have a copy of the presentation?

DR DI LORENZO: Yes, yes. We will supply that, definitely.

25 MR BABISTER: Okay. Just in case I missed something in my notes.

DR DI LORENZO: Yes. No problem.

MR PAGONE: Yes. No. That – and I might actually – to add to that procedural
30 issue, at the moment the whole four of them are just identified as MW1. Would it be – would you prefer to have them dealt with other than as the one – MW1?

DR DI LORENZO: No. I think it's just simpler to treat them as a single presentation - - -

35 MR PAGONE: Yes. Sure, sure, sure.

DR DI LORENZO: - - - MW1.

40 MR PAGONE: And the other thing is whether to put it on the – on the website. It's probably desirable to do that, but that – that might be a matter – as long as we get it we don't really mind but – but you might want to put it on the website for the purposes - - -

45 DR DI LORENZO: Yes. We'd be happy to do that.

MR PAGONE: - - - of the general public. Sure.

MR BABISTER: I might start. Now, I think, John, you're probably the right person to start answering this question.

MR WOODLAND: Sure. Yes.

5

MR BABISTER: And with our all questions, please feel free to deflect it or leave it to the right person. On the warning – on the warning system, I guess the big question we've got – and some of this is in our terms of reference – what's the process or do you have a procedure in place? Because the Bureau, I understand, gives you
10 information on a six hour basis.

MR WOODLAND: Yes.

15

MR BABISTER: And then the models, you mentioned, take 30 to 90 minutes.

MR WOODLAND: Yes.

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MR BABISTER: And then there's 20 to 40 minutes of processing, and I presume the processing after that you then have to disseminate that information to other parties, or is that in – in - - -

MR WOODLAND: Yes.

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MR BABISTER: - - - the processing step?

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MR WOODLAND: Okay. So starting off with the – the – I guess the frequency of things, there's – there's a – a Bureau of Meteorology service level agreement and that covers the whole of Victoria and within that it basically sets standards around flood warnings for various river gauges and typically it's, you know – for – for – for a – a minor flood it's updating every 24 hours the models. For a – a moderate flood it's every 12 hours and for a major flood is every six hours. So that's the service level – service level agreement. Within that – within that agreement there is a part that covers the Melbourne Water gauges which just has the term "Melbourne Water" so subsequently we've worked with the Bureau to document what the agreed service level agreement is between Melbourne Water and the Bureau which is consistent with what they do with the – the rest of the state.

40

45

So we work to that, and that is also taking into account, I'd imagine, how quickly the Bureau can redo forecast rainfall because we need that forecast rainfall to put into the models to run it. So there's time for the Bureau to do that as well. But within that also there's a service level agreement that goes the other way where once we put our information together and provide that to the Bureau of Meteorology, they set a nominal 30 minutes to value add the information that they need to add to that to then disseminate it to the community. So – so in – in the background, you know, as we mentioned it does take time for us to then run the models.

Then we need to have experts validate what's coming out of the models to make sure we're comfortable with what's coming out of the model. We – we run it typically a range – we can run – run a range of scenarios that we then work back with the Bureau to make a decision which one they believe represents the likely outcome,
5 which is used as the basis for flood warnings. That – that's the – the general process.

MR BABISTER: So I – I guess - - -

10 MR WOODLAND: Yes.

MR BABISTER: - - - the question – the question or the area - - -

MR WOODLAND: Yes.

15 MR BABISTER: - - - I'd like – like to explore is you, sort of, basically outlined that you're sort of constrained by a six hour process, and your steps and the other parties' steps taken - - -

20 MR WOODLAND: Well – well, that's – that's – that's the service level agreement - - -

MR BABISTER: The service level agreement, yes.

25 MR WOODLAND: - - - and – and it – it – it's – imagine – and I'm speculating. It's – it would have been worked over time just what's practical and you can imagine too when a flood event's happening it's not happening just for one catchment. There's multiple catchments. So you've got this staggered approach happening where the Bureau are updating forecasts, model runs are being done and that's the level that's been set. And I'd imagine that would apply more broadly across Australia.
30

MR BABISTER: So – so this – this event - - -

MR WOODLAND: Yes.

35 MR BABISTER: - - - we'd categorise as a rare event, we mentioned.

MR WOODLAND: Yes.

40 MR BABISTER: You mentioned it was a two per cent to one per cent rainfall and the flood levels - - -

MR WOODLAND: Yes.

45 MR BABISTER: - - - were with that order. I guess – and the rainfall wasn't really that high. It was just a very wet catchment.

MR WOODLAND: Yes. That's right.

MR BABISTER: But do you have another process in place if we had a more extreme event and things just escalate so quickly just the time in that process becomes irrelevant because by the time you go through that process everything is so out of date - - -

5

MR WOODLAND: Yes.

MR BABISTER: - - - and, I guess, that – that’s really - - -

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MR WOODLAND: Yes.

MR BABISTER: - - - what I want to understand.

15

MR WOODLAND: Yes. It – it – it’s certainly always – it’s an opportunity to look at can – can you do things quicker, but I – I think another point to call out too is in between the forecasts we’ve got flood warning duty officers who are watching what’s happening in real-time. So they’re – they’re looking at what’s the model predicted, what’s actually happening in real-time, and then they can make calls to – to make decisions without waiting – waiting for the next forecast. And that – and that’s exactly what happened here when our flood warning duty officer was watching how the – the gauge was behaving, the height, compared to the modelling. He’s – he noticed that it was rising quicker.

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So he made the expert call to issue a major flood warning and that is actually what you want to happen, so made the right call with his expertise and his judgment. It took – took a – a bit of time to, you know, get his head around that and make sure he was confident and – and made that, and – and that’s a decision under a lot of pressure with a lot going on. So that’s the – the actual process worked in that case.

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MR BABISTER: Yes. Okay. Yes. Because we – we know that - - -

MR WOODLAND: Yes.

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MR BABISTER: - - - it went from a very minor – below a minor flood level to, like, just a normal, a - - -

MR WOODLAND: Yes.

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MR BABISTER: - - - slightly elevated level to well beyond major - - -

MR WOODLAND: Yes.

MR BABISTER: - - - in, sort of – in the order of two hours.

45

MR WOODLAND: Yes.

MR BABISTER: And that’s - - -

MR WOODLAND: Yes.

MR BABISTER: - - - much shorter than the, sort of, process allows, so - - -

5 MR WOODLAND: Yes.

MR BABISTER: - - - at some point you have to, well, keep doing the modelling
- - -

10 MR WOODLAND: Yes.

MR BABISTER: - - - but decisions have to be made long before that process gives
you answers.

15 MR WOODLAND: Yes.

MR BABISTER: And I guess my concern was if we have a much larger rainfall it
will go up even faster and - - -

20 MR WOODLAND: Yes.

MR BABISTER: - - - there needs to be a process to go, well, we can't wait for the
modelling.

25 MR WOODLAND: Yes, yes.

MR BABISTER: Well, the few things we do know indicate that we need to get
warnings out straightaway.

30 MR WOODLAND: Yes, yes.

MR PAGONE: It – it – it might be useful just to know why six hours is six hours.

35 MR WOODLAND: It's – it's a – it's a good question and it's – it's probably one
that we could ask the Bureau of Meteorology because, you know, they – they provide
this service for most parts of Australia and that's the service level that they've landed
on and we've fallen into line with that service level to be consistent with what
happens across most of Australia. So it would be probably one to dig a better deeper
with the Bureau of Meteorology.

40

MR BABISTER: Well, I – I guess the question back would be do you think that's
adequate for your needs?

45 MR WOODLAND: I – look, I – I think it represents what's practicable given the
circumstances and the limitation, you know, is – is on compiling new rainfall
forecasts. That sits on the Bureau of Meteorology end, so they've got to, you know,
run rainfall forecasts across many catchments at times, and then obviously we need

to run various models. So I – I think it would come back to practicality but, of course, you know, it's always good to review standards and see if you can push that down and I think that would take a – a collaborative effort to work through that and understand is that possible. And I'd imagine if we – we do it here then that's going to affect what happens across the whole of Australia. So it's - - -

MR BABISTER: And - - -

MR WOODLAND: It's a bigger decision just for us.

MR BABISTER: And – and we understand that it's only for these very fast rising events. For most of the floods - - -

MR WOODLAND: Yes, yes.

MR BABISTER: - - - the current arrangements are fine.

MR WOODLAND: Yes.

MR BABISTER: Yes. Because we've seen this dilemma on other – other locations in Australia - - -

MR WOODLAND: Yes.

MR BABISTER: - - - where the forecast rain over a six hour period's already been exceeded a couple of hours into that six hour period and then - - -

MR WOODLAND: Yes, yes.

MR BABISTER: - - - people making the modelling – the warning modelling are just sitting there, scratching their heads going, "Well" - - -

MR WOODLAND: Yes.

MR BABISTER: - - - "we've already exceeded" - - -

MR WOODLAND: Yes, yes.

MR BABISTER: - - - "the forecast and it's still raining".

MR WOODLAND: Yes. And – and I imagine, you know, the Bureau had updates to their forecast, they would get that to us as soon as they could get that to us. Yes.

MR BABISTER: And – and is there must ability within your system to speed up some of those of different steps and processes? We – we read through your process and there does seem to be – they're not manual steps but they seem to, I guess, relatively slow - - -

MR WOODLAND: There's always – I mean, we – we – we continuously look at any opportunity to speed things up and, you know, one of the things we are working on now with the Bureau of Meteorology and the SES we are looking at, you know, how we work together on flood warnings, and that process has just kicked off and
5 we're working through that and – and for sure we'll be looking at any opportunity to speed things up and give a better level of service, but, you know, I – I certainly can't speak on behalf of the Bureau of Meteorology. I can work with them to see whether we can actually achieve that. And, look, there – as I mentioned, when we send our information to the Bureau the service level agreement allows for 30 minutes. From
10 what I've seen, they typically do it in around 10 minutes, so I think that we're already exceeding what's on – on paper for the events that I'm aware of.

MR BABISTER: That's probably important for everybody else to understand, that
-- --

15 MR WOODLAND: Yes.

MR BABISTER: -- - the Bureau of Meteorology does have Constitutional responsibility for warnings. It's -- -

20 MR WOODLAND: Yes.

MR BABISTER: -- - something that's not – Melbourne Water's a player in that space but they don't have responsibility – complete responsibility.

25 MR WOODLAND: That – that's right. There is a – there is an interstate agreement that puts the accountability on the Bureau of Meteorology and for most parts of Australia – I – I think Melbourne then there's a couple – I think down near Adelaide and around the – around the Murray there – there is some anomalies there but
30 generally they look after river and flood warnings across Australia. Yes.

MR BABISTER: Yes. Thank you. That's very helpful.

35 MR WOODLAND: Thank you.

PROF MAIER: Thank you very much. I mean, I think, Nerina, you mentioned, you know, we can learn from the bushfire space. I'm just thinking, you know, about – you know, it's – I think it's really good to have that process and as we established the Bureau are responsible for that process and having a consistent process across –
40 across the country, but I think, you know, in a situation – like Mike said, if you've got a catchment wet enough that if you go from a minor to a major flood for catchments like this within two hours, you know, it's probably not – maybe not the best process or, you know – and – and obviously in bushfires you get this very quick response.

45 And there's just – in terms of moving forward, is there – I mean, I know it's not your responsibility as Melbourne Water per se, but is there a broader process where we,

you know – that – that you think it might be worth revisiting, you know, maybe delineating types of catchments that are – respond more slowly where we know the – know the warning time is adequate and other catchments where, for example, the warning time would be less than a six hour cycle? Just, you know - - -

5

DR DI LORENZO: Can I respond broadly and then I think - - -

MR WOODLAND: Yes, yes.

10 DR DI LORENZO: - - - John might have something to add. So I think – I mean, there are certainly things to take from this. We know some catchments are faster catchments. You know, Maribymong, from everything that we have observed over a long time, is a faster, sort of, catchment because of its geography. So there might be – there might be a place to explore there. I think the critical thing – two critical
15 things to draw out are the adjustment that was made within that six hour period. So that – that was the – the operator applying that constant monitoring, so that was positive, and we want to see that, not waiting for the next six hour update. So that – we saw that as a positive.

20 But drawing out also consolidating, you know, the roles during an incident, I think is potentially a place where we can get some further time savings. We think that reduces the handoff – anything you reduce handoff points with can only be an – an improved system. And so it can't predict, you know, how much that will carve off time, but definitely we think those are the sorts of things that might yield the next
25 layer of improvements. And then it's really technology is – is the other question. You know, we – we are seeing a – so much come from that as a new set of opportunities and that – that's definitely an area that might yield some faster results as well.

30 PROF MAIER: Yes. My question was really forward looking. It wasn't, you know - - -

DR DI LORENZO: Yes, yes. Technology.

35 PROF MAIER: It's saying, you know, what can we learn from this. You know, when we're thinking to the future, when we know of, you know – if we know that some catchments respond so quickly and that's quicker than, you know, the – the process that's been, sort of, you know, rolled out from the top down – yes.

40 DR DI LORENZO: Yes.

MR WOODLAND: Yes. So Nerina's answered, I – I guess, most of the question around time, but I – I think one important point to, sort of, build on is, you know, we're – we're talking about ravine flooding and there's also flash flooding. And –
45 and there is a standard applied by the Bureau of Meteorology, you know, based on six hours. So if – if the response in a catchment is less than six hours from the rainfall to the flood peak that's typically known as a flash flood catchment. They're

very hard to predict because they happen very rapidly and we also work, you know, in that space around some of the flashier catchments and essentially it is very challenging to give time for a warning for people. It's really – you're in recovery.

5 And if you look at even the Maribyrnong and, you know, I mentioned the travel times from a major flood can be down at four hours you're almost getting into a flash flood in some scenarios for the Maribyrnong. So, again, you don't have much time. It's a very flat, flashy sort of catchments at times, it can be. And if you take scenarios like, you know, the Murray River, you've got days, and you can be there
10 sandbagging and preparing as the water comes down. And I think every catchment is different and has its own nuances and every rainfall event is different and particularly when you have a large catchment and you have variable rainfall. You know, you've got the water coming down at different times so it gets very complex. Yes.

15 PROF MAIER: Thank you. Yes.

MR PAGONE: Yes.

MR BABISTER: I might just follow that up. Yes. Just a more general question for
20 you, John. How much do you think the fact that the catchment was very wet and very little rainfall fell downstream in the urban areas contributed to the community acceptance of those warnings? And obviously the timing too of the – of the warnings when people – some people weren't even awake.

25 MR WOODLAND: Yes. I – so certainly we – we know that the – that the wetness of the catchment did exacerbate the rain, so we know that. Yes. In terms of how the community responded to the warnings, I – I guess that's a difficult one for me to comment on because that – that – the accountability for that sits with others. But in a general sense, yes, it's like any event that happen rarely or occasionally, whether it's
30 bushfire or flood. You know, there's – there's an opportunity to engage with people so they do understand, you know, where they're living and what the risk might be and, you know, there – there is an opportunity for agencies to help people to get their head around that, where they can also be prepared and make decisions to help manage that risk. So I think that's where the opportunity lies around the community
35 and - - -

MR BABISTER: Well - - -

MR WOODLAND: - - - we – yes. Is – is that, you know - - -
40

MR BABISTER: Yes. I can – I can imagine the members of community looking out the window and going - - -

MR WOODLAND: Yes.
45

MR BABISTER: - - - “well, it's not raining that heavily. It can't be too bad”.

MR WOODLAND: Yes. Because it's happening up – yes, yes. I - - -

MR BABISTER: Because the rainfall was further upstream.

5 MR WOODLAND: That's a good point, yes.

MR BABISTER: And - - -

DR DI LORENZO: Yes.

10

MR BABISTER: And – and that is a bit of a challenge because most flood events
- - -

MR WOODLAND: Yes.

15

MR BABISTER: - - - it probably would rain quite heavily where people live.

MR WOODLAND: Yes. And – and that is a good point because the – the – the
20 rainfall mostly is away from where they live so not aware of it. It's happening in the
upper catchment and coming down and you can have the other, I guess,
compounding factor that you might have a flood coming down, then you might have
rainfall in the area too that, you know, can – can exacerbate it with flash flooding so
it's quite a – a – a – a challenging scenario for people to, I guess, collectively get
their head around. Yes.

25

MR BABISTER: Thank you. I haven't got anything else.

MR PAGONE: Well, I suppose the – just to round up on the six hourly issue - - -

30 MR WOODLAND: Yes.

MR PAGONE: - - - is there anything from that with the benefit of hindsight that
you think would've made – would've made a difference?

35 MR WOODLAND: I – I think what would have made a difference is, you know,
more data to understand how the Keilor gauge behaves in terms of flood height, but
at that point we just didn't – that information didn't exist. So it's all about
continuous improvement and as we get these very infrequent events, making sure we
40 get out there and get measurements, which is what we did. So it's about improving
our understanding of how rivers behave under high flood events which happens so
rarely, so I think that's what would've helped.

45 But – but the real thing I guess in terms of, you know, what – what helped here was
having an expert flood warning duty officer monitoring what was happening at that
point in time and – and noticing that the river wasn't behaving as expected and
making the judgment call to issue the major flood warning. So I think from that
perspective the process worked and I – and we have new information which will

improve our understanding in issuing flood warnings into the future. So that's where the continuous improvement comes from.

MR PAGONE: Well, I – I understand the answer before that it's really a – a Bureau
5 matter or at least the – the six hourly - - -

MR WOODLAND: Yes.

MR PAGONE: - - - timeframe is driven by the – the Bureau and that they have the
10 Constitutional responsibility for warnings, so, in a sense, it's a matter for them, but
just in terms of – of everybody understanding what it is that's happening with the –
the six hourly modelling run, because it – mostly these days the general member of
the public would be a little surprised that it takes a – that amount of time to – to run
something. So the question is going to be whether you can explain roughly what it is
15 that is involved in the six hourly run but if you could bear in mind that when you
start on the Eastern Freeway and you see how long it's going to take you to get from
Ringwood to Melbourne, it will be – the time gauge it will say 15 minutes of half an
hour or whatever it takes and that gets updated. There's a late time, of course, but
it's not six – six hours - - -

20 MR WOODLAND: Yes.

MR PAGONE: - - - unless something's happened with the traffic, in which case you
might be there for a long time. So we are used to technology being really very rapid
25 with these kinds of things. Floods are more complicated than just the traffic flow on
a freeway, but why six hours?

MR WOODLAND: Yes. It's a – it's a good question. So the – the actual model
runs on average take about an hour. So they – they go either way around that. Then
30 there's time to interrogate, you know, up to 40 minutes. So the limitation actually
isn't the model or the analysis. The limitation is getting the rainfall forecast back to
us and that's what it's set on, which is a Bureau of Meteorology standard that we
adhere to. And it – it's really not a lot of benefit in rerunning the models if we
haven't got a new rainfall forecast. So it's not the – the model that's the limitation or
35 the analysis. It's really getting the new data in terms of how the rainfall is behaving
and, you know, that would be more of an – you know, a matter for the Bureau of
Meteorology.

I – I can't answer that, but I can only speculate that it's – it's when it's meaningful to
40 provide it, and it might be to do with how they resource and on their end in terms of
how their model's run, but I would need to talk to the Bureau more about, you know,
their limitations on that side.

MR PAGONE: Well, we – we might – we might then move on to the question of
45 design and modelling to ask questions of – of – of Wendy.

MR BABISTER: So I'll – I'll start off with the – the easy questions and then get more – the more – the simpler questions and move to the more complex, I guess, but the first one which also, sort of, goes into the planning space is we've talked about climate change and you've got a commitment – was it 2026 to have climate change
5 built into all of your modelling. A very general question, does that mean the LSIOs will all reflect that scenario or will they reflect current conditions or somewhere in between?

DR SMITH: So that question probably sits part – part way between Rachel and I
10 but I'm going to let Rachel answer that one.

MR BABISTER: Okay.

MS LUNN: Thanks, Wendy. That's a great question. So at the moment, the choice
15 of what zone we use – so as I said earlier, what urban floodway zoning – you'll remember from my presentation there's a variety of different flood controls we could use. The idea is that – that as these new models roll out over the next three years that we will incorporate them with our partners at – at council into their planning schemes. It might not be LSIO. There might be different controls. We might
20 choose different types of things. But the idea is that as the new models roll out, we will start using them immediately and we're not going to wait for three years.

As new modelling comes out we will incorporate them in the normal way and we will start using them as soon as they become information that Wendy says that
25 they're – they're ready to go, that we've checked they're the best available. We start to use them for the planning decisions and the flood control straightaway because it's incumbent on us to use the best flood information we have when we're making all of our planning and building controls straightaway. So the intention is that over the next year we will start them. The current system and planning scheme amendments
30 can take some time so they can take a number of years from when we start them to when they're gazetted and finished, and that's why we start using the information straightaway when we're making decisions. So, yes, the intention is that the flood controls would all incorporate climate change as they're started over the next few years.

35 MR BABISTER: And are you – you – you might not be able to answer this because you might not have made the decision because this is more conceptual, I understand from what you're saying. Do you think it will be based on 2100 estimates or something in between?

40 MS LUNN: That's a great question. So, yes, our – our intention is that all – that – that the climate change parameters that we're using in our flood information and our associated land use decisions will have the same settings that we've used for the City of Melbourne model. So we are planning for the year 2100. We are planning for
45 18.5 RCP for rainfall. So there's a number of things that Wendy might speak to in there but we're using the same settings in the construction and the rollout of our

model as we did with the City of Melbourne. Wendy, would you like to say anything else around that?

DR SMITH: Not at the moment. RCP 8.5 - - -

MS LUNN: Sorry.

DR SMITH: 18.5 millimetres increase – overall increase.

MR BABISTER: Yes. And – and you're certainly aware that that's - - -

DR SMITH: It does – and sea level rise.

MR BABISTER: That – that's being updated as well.

DR SMITH: Yes. We are aware of that.

MR BABISTER: Yes. And you're clearly aware too that that's a very general number and it's probably smaller in big catchments and - - -

DR SMITH: Yes.

MR BABISTER: - - - maybe larger in smaller catchments and hopefully that gets refined.

DR SMITH: Yes. We also acknowledged, I think, that there's a challenge for us in that ongoing changing – changing policy and changing guidance space and that's why we're committed to even beyond 2026 to continue during this period of uncertainty and learning and growth that we'll continue to update our models to reflect as best we can best available information and knowledge.

MR BABISTER: And I guess – I guess the key thing too is just because it's uncertain doesn't mean you shouldn't be having an estimate of it taking into account - - -

DR SMITH: No.

MR BABISTER: - - - if you use an estimate that you'll be closer to where it lands than doing nothing.

DR SMITH: Yes. And – yes. Look, absolutely. We – we – we take that measure to heart, that we make available the best information that we can, and we continue to use that information until – until we revise and update it.

MR BABISTER: Okay. I might – Holger is the expert on climate change, so I might see if he wants to follow up on that.

DR DI LORENZO: Is it possible to add one thing to just – the statement. So just a recognition that, well, it is an uncertain environment, and whatever standard we apply we've got to be able to make clear the basis of that standard because these planning scheme amendments, any time we want to change a control, they go
5 through, you know, the right and proper checks and balances. They're changeable at any point. You know, they need to withstand challenge from lots of different lenses and they have an impact from a development perspective, and what that means then for housing.

10 So it absolutely recognise this issue of uncertainty and need to be very clear about the basis on which we – we make a projection because it needs to be a defensible basis because it will be, you know, at one – we currently – C384 is currently before VCAT being challenged. That's the very first of these new climate based models. And, you know, we're really conscious of how important it's going to be to, you
15 know, be able to get through those sorts of processes, otherwise we then don't have them in the controls.

PROF MAIER: Yes. It's clearly very difficult, you know, to balance, as you've – you talked about balance before, and that's - - -

20

DR DI LORENZO: That's it. Yes.

PROF MAIER: It's all a balance about these different factors.

25 DR SMITH: Absolutely.

PROF MAIER: Now, I was talking about – I mean, the climate obviously is one part of the equation that's changing and that's the input into the system but the response – the catchment itself is changing as well. So in terms of, you know,
30 potential urbanisation or densification is that, sort of, part of your considerations as well when you're looking at 2100?

DR SMITH: Absolutely. So for 2100 or – we – we don't necessarily look at urbanisation as a factor in our modelling now or projections of urbanisation. What
35 we do in terms of our growth areas is that we – and Rachel's probably best placed to speak to our growth areas, but we – we're trying to make sure that the development does not increase flooding. In our infill areas it's – it is slightly different. At the moment we're taking climate change projections into consideration and we update our models periodically to account for infill development, so they will capture
40 increases in impervious areas, increases in densification, all those sorts of things, as – as our models are – are updated, which is now becoming a much more frequent process.

PROF MAIER: Yes, yes, yes. No. That's good. The other thing, you know, that
45 obviously, you know, we've talked a lot about the wet catchment, this particular event was unusual. We've had another three years of La Nina and I guess, you know, we could, sort of, argue that potentially that's the reason why, you know,

maybe a two per cent rainfall event resulted in – resulted in almost a one per cent runoff event or the flood extent anyway. Does that, you know – and – and you talked about – and, Wendy, about a lot of assumptions going into the model, which is absolutely correct.

5

You know, we're dealing with the catchments and variables, but does that sort of, you know – do you think that'll trigger some sort of reconsideration about some of the assumptions or at least some sensitivities around those in terms of, you know, if – if, you know – if this event is, sort of, symptomatic of what might be happening it's actually the, you know – the – should the catchments be more wet or other considerations when you – when you start looking at those – some of those planning boundaries or in the future - - -

10

DR SMITH: So – so I think perhaps – so let – let me answer that question and then maybe my colleague Rachel might – might provide an – an additional answer. So the – the modelling methodologies that – that were used take account of a wide range of climate applications. So we look at a range of different AEP events. We look at a range of temporal patterns. We look at a range of starting antecedent conditions. All of those come together into effectively a design rainfall or the design event, if you like, that we then apply to our planning considerations. So we do take into account a lot of those – those considerations, and they are reflected, if you like, in the planning levels. I guess we also apply the – the – the 300 and 600 freeboard to – to make allowance for some of those - - -

20

25 PROF MAIER: Yes.

DR SMITH: Some of those – those other issues. Do you want to add to that?

MS LUNN: I think just to complement Wendy's answer, what's important is that the – the output that we use from the models – and obviously you'd be aware there's a range of different outputs you could pull. In Victoria we plan to the one per cent AEP. So often to the community when we're rolling out planning scheme amendments we'll say is this the worst a flood could ever be? Is this the probable maximum flood event? And we explain that what we're using here – so, like you said, if I go to maybe the heart of your question, there may be some things in the future where we look at different percentage AEPs or maybe there's different things we could do, but right now the state guidelines and planning practice notes for what we plan for is the one per cent event as set out, the technical specifications.

30

35

So there might be different ways of looking at, you know, how wet's the sponge and how likely are things meant to happen in the future, but we'll do that obviously with all our partners based on, sort of, you know, potential changes in the future, but right now we'll use the one per cent AEP in accordance with the state framework and guidelines.

40

45

PROF MAIER: I think that's a separate issue. Like you said, the modelling informs where the boundary is and so there are assumptions about the modelling which will

then tell you the flood extent, so that was really my question. It wasn't about whether the one per cent AEP is appropriate or not. It was more about, you know – and – and I completely appreciate that there are a lot of assumptions you have to make. You can't get around that. So my question was really about are those – some – some of those assumptions, you know – would you – like, the – you've – you've mentioned the antecedent moisture. You know, would – would some of those assumptions – yes.

Would you reconsider some of those in – in light of what's happened? I guess that was really all my – my question was about. So it wasn't about the one per cent. It was more about the factors that help you determine where the one per cent boundary is.

MS LUNN: I – I might pass over to Wendy but I think one of the things that's important is as we're rolling out these new amendments and going through the process we're continually revise our technical specifications to make sure that the outputs are what we need for a variety of different purposes and what the best inputs are. I don't know whether Wendy wants to add to that as the technical specification guru, but - - -

DR SMITH: I – I – the only thing I would add, I suppose, is that – that as a – as a statutory authority, we work to the guidance – the – the – the industry standard guidance. We don't go outside that guidance. So the guidance in Australian rainfall and runoff tells us to, you know – to look at different antecedent conditions or to take different data or to consider it in a different way, we would do that, but we followed the best available information which, in our view, is Australian rainfall and runoff 2019.

PROF MAIER: Thank you. Did you have any more questions on that tact? No.

MR BABISTER: Not on – not on that, but I have - - -

PROF MAIER: No.

MR BABISTER: - - - some questions on the event and - - -

PROF MAIER: Yes. Okay. Yes.

MR BABISTER: Yes. So – so I guess what I'd like to explore further – it's probably Wendy – is on the modelling of this recent event in the lower and mid catchments you mentioned that you had a good match in the bottom and a not so good match in mid catchment. I guess I'd like to explore the extent of that match, how good it is, what that means in terms of numbers. And so on the lower catchment generally you were within a certain 200 mils or 300 mils or is it – can I – can we generalise like that is that a bit hard?

DR SMITH: Yes. Look, we can generalise like that. I'd – I'd have to go back to the specific numbers in the report. I haven't necessarily memorised them all, but I think there's a – there's a good match within probably closer to – to 50 I think than – than 2 or 3 hundred in the lower.

5

MR BABISTER: And – and – and also around the racecourse as well in the lower catchment. It's a very good match there.

DR SMITH: So – so the racecourse is – is – is interesting, I suppose, for a number of reasons. The – what we have available for the racecourse is photographic information. Our model at the moment still has the racecourse embraced within the floodplain so we haven't – the model hasn't been updated to include the floodwall. So the – the event itself obviously we have photographs to show that the event didn't go on to the – on to the racecourse, but I think, look, we're comfortable that in that portion of the catchment the model's still performing well and we still continue to use the model for development purposes.

MR BABISTER: Okay. And as a, sort of, more general question about modelling, would – would you – would Melbourne Water consider 20 years between model updates to be a long period of time or a normal period of time or - - -

DR SMITH: I think where we're at with – with that particular – so Melbourne Water is being – has been updating its flood models frequently. We've – over the years we've had a number of increases in scope, if you like, to our area of operations and sometimes our focus has been on updating those. In recent years, we have begun a process even as early back as, sort of, 2016 to begin to update all our flood models across Melbourne. I think that was escalated in 2019. The – the process in 2019 really triggered – was the trigger, I suppose, for a – a widespread change.

MR BABISTER: Yes. It just strikes me that that model traces its ancestry back to '86. It was updated in 2003. It's now two decades later. It seems a very long period for a – an urban catchment which probably has a fair chunk of Melbourne's flood risk.

DR SMITH: Yes. Look, I think the – look – yes. Look, like I said, the – we have been – have begun the process of updating all our flood models. Some we had to prioritise according to where we have information and where we don't have information. The model, as we said, is still performing well in that it was still able to provide us good information in the lower catchment. I think there's other areas of Melbourne where we – we need more – more information or we need to – where there's – or we don't have information. So we have to work across our whole area and prioritise our – across our whole area.

MR BABISTER: And moving to the mid catchment, you mentioned there was a – a bit of a mismatch or a discrepancy. Can you enlighten us with – where possible on that and I guess we will then focus on Rivervue which - - -

DR SMITH: Sure. So the – the mid – mid Maribyrnong model – the – the – the flood extent that – that’s still in the mid – in the mid Maribyrnong model was – was not too bad. I think the – the main challenge is in the depth and you can see that in the figures that are contained within the report. And so at Rivervue – I mean, at the location of Rivervue as it says in the report, the model underpredicts the flood levels – the observed flood levels and further downstream overpredicts.

MR BABISTER: Do you – the magnitude of the underprediction, do you have a number on that – an approximate number?

DR SMITH: It’s – it’s shown in the graph in the report it was around about half a metre.

MR BABISTER: Okay. Because the – the dilemma the panel has is that the – and I can – I’ll give you some handouts if this helps, but I’ll try and keep it simple so feel free to ask questions back – is the – the final floor levels or the proposed floor levels in Rivervue – and I don’t know if people want to write this down but it’s, sort of, up against the bridge of 6.4 metres AHD and the flood level is – I’ll give you – is about 5.64. That’s a lot more than half a metre discrepancy and those units flooded. So there seems to be an – a difference closer to a metre than half a metre between what’s predicted – well, what your one per cent flood level was and what’s occurred and this flood even was smaller than a one per cent.

DR SMITH: Sure. So we - - -

MR BABISTER: And I’m - - -

DR SMITH: We – I – I haven’t written the numbers down. We – look, we continue to look into the causes and effects of Rivervue – of what happened at Rivervue. There’s a number of issues at play and at the moment I can’t comment too much further.

MR BABISTER: Okay. So, well, I guess the follow up part would be do you think it’s – that it’s just about the flood levels being different or do you think maybe it’s the floor levels are not right?

DR SMITH: I can’t comment on that. I’m going to pass it back to Nerina.

DR DI LORENZO: I can elaborate a little further.

MR PAGONE: Of course.

DR DI LORENZO: And as I stated earlier, there’s more to be worked through here. So I think as you heard from Wendy and as you – you drew out, that first issue of the model and the extent to which the model underestimated or whether it behaved as expected, that’s one issue. But I also alluded to a range of positions over a 20 year period. The original permit, VCAT process, the conditions that were applied, some

decisions through the course since then – for example, some decisions around floor levels and we are working through – through that question now, and also some later decisions taken by council through secondary consent processes on floor levels.

- 5 So my comment earlier is on aggregate we see a range of issues here. What we're not clear about is the extent to which individual issues contributed but we – we recognise this is an area that really needs the further examination and we – we won't have all of the information but we've got – we've supplied everything that we've currently got.

10

MR PAGONE: Yes. Thank – thank you. We might park that for a moment because it might be, I think, of help even if you don't get an answer today – it might assist you if we showed you the – what Mr Babister's referred to as the handouts but more particularly it will have some detailed information where we have been trying to make sense of what happened - - -

15

DR DI LORENZO: Yes.

- MR PAGONE: - - - or make sense of something that happened at Rivervue so that you've got that, but – but we won't – we'll just park that for a moment so that we can organise that differently. No, no. Not just yet. Not just yet – and get back to the broader questions, if we – if we may. So we'll leave Rivervue just for a minute. We – we – I assure you, we won't forget Rivervue because it's a – a – an important issue. But just getting back to the modelling issues and the wall – intending a reference to Pink Floyd – the – the event that occurred last year was presumably the first test of the wall. And so one of the issues presumably is was the modelling that was done in anticipation of the wall going up – was the modelling accurate, helpful, more or less on – on – on track?

20

25

- Now, I've – I've heard and I know that the – the visual images – the track wasn't adversely affected by flooding. We get that. But the river did go up. The wall stopped some water going into the – into the racetrack. Well, what was the modelling telling us about where the water was going to go and is that where it went? We – we've assumed or at least I've assumed that the VRC would have had some form of incident report and would have evaluated whether its internal modelling would – would have worked or didn't work, whether all that money they've put into the exercise was worthwhile, whether the reassurances everybody got were worthwhile. Has any of that been shared with Melbourne Water? Is Melbourne Water looking at any of that, as a broad question? And it may be that your answer is you can't tell us. I – I hope that's not the answer, but, well, that's the general question.

35

40

DR DI LORENZO: So if you're happy for me to begin.

- 45 MR PAGONE: Yes.

DR DI LORENZO: There might be some additional bits to – to add and as stated earlier, we will respond to everything that we can - - -

MR PAGONE: Sure.

5

DR DI LORENZO: - - - so absolutely. And we don't have further information from VRC on their own assessments. So this is based on what we have assessed and what we've worked through. So in relation to the way – I – I would like to just go to a concept, the concept of afflux that I mentioned earlier, and it's the basis of

10 Melbourne Water's assessment of any infrastructure. So if any infrastructure goes in place and it creates afflux so it – it has the impact of holding – holding back floodwaters in one location but adding to floodwaters in another, that's called afflux. We – we don't approve something unless we can show through the modelling that there are other mitigations to offset that so that you get a zero afflux. So what we've
15 been able to see is we can see that the wall was engaged.

It – it undertook – it meant that it therefore displaced some water or it – or it held some of the water back. We also can see that the mitigations that happened at Footscray Road and the Northern Rail Bridges with the culverts put in place would
20 have meant water flowed out more quickly, enough to compensate for the holdback. Now, that – that's what we've been able to see in the models. The part that we – we think – now, the proof in the pudding is the updated model that then allows us to say, well, in reality when you apply what happened in this flood, what is the extent to which those mitigations actually offset the impact of the wall, that's the piece that
25 we're not able to yet conclude, and we would provide that and we'd be transparent on that, but we don't have that yet. That is the piece we don't have.

MR PAGONE: And – and when do you think you'll have that piece?

30 DR DI LORENZO: Well, that's part of the updated Maribyrnong modelling. That we commissioned earlier this year and will land – I think will be completed by April, and so that's an issue to be considered, how that then gets considered because it is a piece of work, you know, as we said – these models take a long time. Wendy can talk through what's involved. The model involves things like a one metre by one
35 metre grid in terms of the data collected. It involves radar, overhead flyovers. It involves, you know, a whole range of commercial vessels doing work on – to get the symmetry of the – the co-site. There's a lot to – to draw this together.

We would want that model to be complete to then say, "Okay. In these conditions
40 did it work as it was intending – intended and to what extent did those mitigations offset what the wall would have, you know, displaced?" That's – that's the critical issue. But we can see the basis of that calculation and we can validate that. We can understand how that has come about, and we can see that it's gone through multiple levels of peer review, and we can also see that the – the model operated pretty
45 closely to – to – as – as – as it happened in those locations. So those – those things we can see so far.

PROF MAIER: Yes. There's a – I guess there's a little bit of confusion. So basically one of your items references, you know – we want to assess whether the Flemington wall contributed to the extent and duration of the flood event. That's reference 6. And – but it sounds to me like you're – you are not able to provide that information, so at the moment you – I think the feedback we've received is that you – and – and you've just said it just then, you're waiting for the new model. So essentially with the existing model you are not able to model the impact of the wall for the particular flood event in October '22, and so it's pretty much not possible to answer that question because you – or there's no modelling of that actual event or the impact of the – the wall on that event.

And yet at the same time you're, sort of, saying that the – you know, the – the actual design modelling that happened shows that the wall has no effect, so you can show it for the design event but not for the actual event. And the inference – I mean, you can correct me there. This is the – that the – the modelling that you're doing at the moment, that you have – that you – you can't be confident that that – that's able to model the event accurately. Is that why you're sort of waiting for the new model? That's – are we able to get some clarification on that for - - -

DR SMITH: Sure. Perhaps – perhaps if I can just add to that and – and firstly can I say, you know, Melbourne Water recognises the devastation that's been – that's been had through the – through this flood event and that the – the images of the – the flood plain – the – the VRC area not being flooded, it's quite distressing. I think what – what we can say – having said that, what we can say is that at the moment we have no information that would suggest that our modelling design that was – the modelling design that was done in and around 2003 to 2007, we have no information to suggest that that was incorrect. So we've done the design. We made the decision at the time on the best available information that we had on the models that we had at the time. The decision was made that the mitigation works that were put in place offset the afflux that was associated with taking out of – taking out that – putting in that flood wall. The verification works that we've done on the model in the last six months or so have indicated that the model is performing as we expected.

There is nothing to suggest that the model is – that the flood event was doing something different to what our current model is suggesting. As a floodplain manager, though, we take our responsibilities fairly – very seriously. We're investing in a contemporary model. We're investing in contemporary data. We're investing significantly to get a new model. An updated model that – the model that was done in – the model that was used in 2003, 4, 5, 6, 7 was a one-dimensional model of the system. We know the two-dimensional models give different information. And in this instance, because of the complexity of the interaction of the floodplain with the flood wall, we know that the model will give us a slightly different answer, a more contemporary answer, and we're investing in developing that model to give us that more contemporary answer.

PROF MAIER: Yes. I mean, that's all true except we don't – you don't have – like, in terms of the terms of reference, we don't have a model result for the actual event.

I mean, I agree the Jacobs model – the Jacobs report shows that the model performs pretty well, but it doesn't comment on the flood wall itself because that wasn't – that interaction – as I understand it, that interaction was not modelled in the Jacobs evaluation of the event.

5

MS SMITH: So the Jacobs evaluation does model the section of the river where the flood wall is, and we do have some photographic evidence. It's not complete. We acknowledge that it's not complete, and we acknowledge that we will have a better answer in April next year.

10

PROF MAIER: Okay. I mean, when we asked for, you know, the model – a model run of that event and showing the impact of the flood wall, the feedback we received, that hasn't been done, and they're waiting for the new model.

15

MS SMITH: So the flood wall is not represented in the current model that we have at the moment. But what we do have is the actual event, and we've compared that with the flood model that we do have, and the Jacobs report is indicating that the flood model is still performing well at that location.

20

PROF MAIER: But without the wall?

MS SMITH: Without the wall.

PROF MAIER: Yes. Okay.

25

MR BABISTER: Just a minor point of clarification too. It's not just about 1D and 2D models, isn't it? The 1D model is what we'd call steady state. Doesn't take into account the dynamic effects of a flood. It just assumes what's happening at the peak. While the 2D model is a dynamic model or unsteady model. Takes into account the flood behaviour and water flowing into the floodplain and flowing back during the flood event. So it's those two aspects.

30

MS SMITH: Absolutely. We acknowledge that in April next year, we'll be in a much better position to provide a more – a more rigorous answer to that question.

35

PROF MAIER: Thank you. Just in terms of the mid Maribyrnong, I might be missing it, but have we – I don't think we've received – like, the Jacobs report results that were presented today was the first that we've seen of those. Have they – has that report been - - -

40

MS SMITH: I believe - - -

DR DI LORENZO: Yes.

45

MS SMITH: I believe that's been sent.

DR DI LORENZO: We believe that's been sent.

PROF MAIER: Okay. All right.

DR DI LORENZO: Yes. Do we know what date that was sent?

5 PROF MAIER: Yes. All right.

DR DI LORENZO: Yes.

PROF MAIER: Thank you.

10

MS SMITH: You've received it? The mid Maribyrnong?

MR PAGONE: I don't want to leave the wall if I – always fond of Pink Floyd song. We have a dilemma, or we have a difficulty, I should say, rather than dilemma, and
15 that is that one of our terms of reference asks us to do something and we can't do it. Now, in a sense, the answer might be, well, we can't do it, and what we're hearing is somebody might be able to do it in April. May I just at least explore what it is that you have explored or haven't explored about the impact of the wall. I know that culverts will behave as culverts as supposed to behave. So if you've done mitigation
20 and one of the bits of mitigation is that you've installed a culvert, it's likely that it is doing what it was supposed to be doing.

What the people affected by the event might be interested in knowing, either as reassurance or, conversely, as proof that what they've always thought was the case,
25 was that the impact of the wall on them is measurable in some way. And I go back to the question, surely the VRC would have been as interested in knowing what the impact of their wall was, and so I'm curious to know what interaction you've had with them. Because you'd think as a simple lawyer – that's me – you'd think that they would want to know if they are exposed because their wall has had an impact.

30

DR DI LORENZO: So may I have - - -

MR PAGONE: Of course.

35 DR DI LORENZO: - - - an attempt to respond to the question. Thank you. And just closing off the mid Maribyrnong, so 5 July that report was sent through, so I can confirm that. So in relation to the wall and what we've been able to conclude, we conclude – can see that the basis of the culverts and the calculation of the culverts, we can see it is likely that they behaved – given that everything else has been
40 validating in terms of how that model worked, we think that – you know, we can see – we can draw some level of conclusion to say, well, they appear to have worked.

We are being very careful in this space, though. You know, this is a really important matter. The level of impact from a community perspective is really significant, and
45 so, you know, we can see that in the calcs. We can see that further external validation of the model I would be very hesitant to make any further representation based on how significant the matter is and how big that is from a

community perspective. So we don't want to be making those sorts of broad statements.

5 We did commission this earlier in the year. Around March this year we started
looking at what will it take to respond to that question, and concluded we need to
make sure this piece of work is done in its fullest extent, and that's why we
commission that work. We can't speed those timeframes up. We have been working
that through with the consultant who is doing that work for us. We commissioned
10 that with, I believe it was, Jacobs as our consultant who is doing that. Initially, they
did the validation of the existing model, but we also commissioned this broader piece
of work. We are being cautious about what we conclude because it's too important.
It's just a recognition of how significant that is.

15 There may be some pragmatic ways we can manage that in terms of the terms of
reference of the review. Potentially, there may be the opportunity to return to this
question at a later date with the panel if there is an openness to doing that so that we
can conclude that matter. But we will make that publicly transparent one way or the
other, and that may be a discussion we can have about how does that get managed
20 through the process of the review. I think there's some pragmatic ways we can do
that together, but the critical thing is we can't – we really need to make sure this
work is done in its most complete way because of how important this matter is from
a public perspective.

25 MR BABISTER: Just a couple of other background comments. You mentioned the
bathymetry that's being collected. Has that been collected or it's to be collected?

MS SMITH: No, it's been collected.

30 MR BABISTER: It's been collected.

MS SMITH: It has been collected, yes.

35 MR BABISTER: And has it been analysed to determine whether there's much
difference historically in the river or - - -

MS SMITH: No, it hasn't. We've seen some initial images, but, no, it hasn't been
analysed to determine, yes, change over time.

40 MR BABISTER: Because, obviously, if the bathymetry – we probably should
explain what that is. That's the ground - - -

MS SMITH: That's right. The river form.

45 MR BABISTER: The surface ground underneath the river.

MS SMITH: Yes.

MR BABISTER: Which you can only collect with a boat or some sort of measurement. If the river has silted up a bit, then that would make a big difference to flood levels as well.

5 DR DI LORENZO: Yes.

MS SMITH: Sure. No, I don't believe that analysis has been done. I can check that out, though, if you like, and come back to you on that one.

10 MR BABISTER: Okay. And the other question, we were talking about the mid Maribyrnong report. I think we've been provided a copy with it because I think we have some excerpts from it, but we can't find our copy or there are a lot of documents.

15 MS SMITH: Sure.

MR BABISTER: We're probably close to 1000 now, so - - -

MS SMITH: Okay.

20

MR BABISTER: We will just check, and if you can provide us a new copy.

MS SMITH: Absolutely.

25 DR DI LORENZO: We'll resend. We'll resend.

MS SMITH: We can resend it.

30 DR DI LORENZO: So from our records, it was 1st of July, but we'll resend and put that to the top of your pile.

MR BABISTER: Just that one document.

DR DI LORENZO: Yes. Yes.

35

MR BABISTER: I think we've got - - -

DR DI LORENZO: We'll bring that to the top.

40 MR BABISTER: - - - two copies of the lower one or something. I think that's what's happened.

MS SMITH: Okay. Sure. No, we can send you the mid Maribyrnong report. Apologies for that.

45

MR BABISTER: Moving on to Rivervue is that what you said, Tony?

MR PAGONE: No, no, I didn't say that.

MR BABISTER: Sorry?

5 MR PAGONE: I didn't say that.

MR BABISTER: Okay.

10 MR PAGONE: All right. Well, we may now turn to Rivervue, and before I pass the microphone back down that way and then up this way, the position that Rivervue has a range of quite – get that right adjective – quite potentially awkward issues ranging over a period of time, including how it was and whether it should have been the case that some part of the land was removed from the LSIO designation. So there may be quite a few things that we need to explore with you and Melbourne Water's role and
15 position on all of that. But what I might ask is if you be given some pictures, and if they can be given in a particular order so that Mr Babister can then explain on transcript what the pictures are. There are a total, I think of, four. Is it four? Are there four?

20 MR BABISTER: We've got six copies. Do you want a copy, Tony?

MR PAGONE: No, no. Yes, I do want a copy, but - - -

25 MR BABISTER: It's four pages.

MR PAGONE: There are four pages. So there are four pages, and we have six copies that you can look at, and for the purposes of the transcript, we will number them P1, P standing for panel, and being our documents, so that the four are identified. Now, I know that Mr Babister will go through these with you so that they
30 can be identified. Some of them, I think, are found in the – well, all of them were found in the material we've been given. Some will have been accessible publicly, I think.

MR BABISTER: Are you ready for me, Tony?

35 MR PAGONE: Yes.

MR BABISTER: Okay. So we've provided four pages. The first three are stapled together and the last page is by itself. The first page – and I'll get these – where they
40 came from for the official record so we've got this correct and so people can find out. Now, the first page, which is this one here for Melbourne Water, is a consolidated figure that we've produced, but we haven't really produced any new information. We've taken the information from the Neil Craigie report, which was the 24.12.2010, and, for our reference, it's document 18C provided by Tigcorp to the panel. And all
45 we've done is on the Neil Craigie figure put the design flood levels for the one per cent event that's in his report, and we've actually pasted the various chunks of his

report, the tables, below the figure. And I presume that's reasonably clear for the flood modellers from Melbourne Water. Wendy, is that - - -

MS SMITH: I probably need a few minutes to have a look at it if that's okay.

5 MR BABISTER: That's - we basically have the cross-sections from 20 to cross-section 22 through the Rivervue project. And those different coloured flood levels, you can probably just look at the last one and the first one. The first one was the flood levels prior to the Tigcorp development, and the last set of numbers, which is
10 in purple, is the proposed development in 2010. And it's just sort of a general summary. It shows that the one per cent flood levels on that figure vary between 5.64 and 5.85. Does that make sense, Wendy? You're struggling? Okay. Take time.

15 MS SMITH: Sorry, Mark. Yes, give me a few minutes.

MR BABISTER: Okay.

MS SMITH: And, look, to be honest, the development is not my area as well. So
20 the - we did the - my team did - my team's predecessors did the flood modelling for this area, but the development is assessed in another part of Melbourne Water.

MR BABISTER: Okay. Yes.

25 MS SMITH: So we may need to take these questions - - -

MR BABISTER: Okay.

MS SMITH: - - - on notice unless Rachel is able to look at them in more detail.
30

MR BABISTER: So the first set - the black set of numbers would be Melbourne Water's, and the other ones would be by Rivervue's consultant. But the numbers don't really change significantly anyway.

35 MS LUNN: Would it possible, given that this is a helpful summary, we've got information on here from Tigcorp and from us, would we be able to take a couple of minutes and just have a - - -

MR BABISTER: Yes, sure.

40 MS LUNN: - - - second to consider this ourselves? Would that be - - -

MR PAGONE: Just before you do - that's a great idea, and the answer is yes.

45 MS LUNN: Thank you.

MR PAGONE: But just before you do, I think it would be sensible for Mr Babister to go through each of these documents so we don't end up with you asking five minutes after each of them.

5 DR DI LORENZO: Yes. Good.

MS LUNN: The explanation would be wonderful. Thank you.

MR PAGONE: Which would be perfectly reasonable on each occasion.

10

MR BABISTER: I think that's a very good idea - - -

MS LUNN: Thank you.

15 MR BABISTER: - - - because, yes, we would do this three times. So on pages 2 and 3, what we've got is the endorsed plan from 2017, and I think it's stage 3. But it doesn't vary between stages 3, 4, 5A. The first - so page 2 is a plan showing the various lots and units at Tigcorp, but it's too - you can't really read anything on it. So what I've done on page 3 is just blown up the bottom corner, and you can see in
20 stage 3 there's units U, V, X, Y, Z. It doesn't quite make sense because some letters are reproduced multiple times. And the key piece of information on that is underneath each of those letters it says "FFL" and it's got a level, which is 6.4, which I presume means the finished floor level or final floor level. And if you relate that to the first document, you'll notice that they're 700 mils - a little bit more than 600
25 rounded up above the one per cent flood level, which is what we'd expect under the Melbourne Water process.

DR DI LORENZO: Yes.

30 MR BABISTER: The final document - and nobody can read this because it's really fine even though I've blown it up - is just a survey that was provided by Melbourne Water to the panel, but obviously you're not the source of that survey, and it was document 147. It was provided by Melbourne Water on 5.7.2003. And I think, Tim, you can clarify for me exactly what document that is or who's the provider. I think
35 - - -

MR PEGGIE: Melbourne Water has provided this via the surveyor Veris; is that correct?

40 DR DI LORENZO: Yes.

MR PEGGIE: And you've not got documentation that suggests you received it previously, but you've requested it from the surveyor. And they have confirmed, I believe, that the date on this document is - the date of the information hasn't
45 changed since.

DR DI LORENZO: Yes.

MR BABISTER: There's a whole range of other documents, but I've tried to just summarise the key facts on these pages, which is basically we have some design flood levels that are a long way below the floor level, and those floors flooded, and the panel would like to get to the bottom of what caused this. Was it the flood levels – estimated flood levels being in error, the floor levels maybe not being built to the design level or some combination? And following up from that, when we come back, is we did actually ask if there's any survey Melbourne Water had carried out to confirm this.

MR PAGONE: So we'll give you a bit of time now, and we'll step out so that you've got it. But to be clear about it, it seems from these documents that the properties ought not to have flooded, but they did. And it would be useful for us to understand whether there's an error somewhere, and hence also the question about surveys. Now, we understand – we'd like your reaction to this, but we understand as a matter of law you can do a survey if you want to, and that's one of the issues that we wish to explore with you. I must say, these struck us as being – requiring explanation. I'm not saying that it requires explanation necessarily from you, but if we've understood this correctly, someone needs to explain this, and you're first cab off the rank, and you've got some role in all of this, so you may have some explanation. Now, you've asked for five minutes. If I may say so, that strikes me as possibly being not long enough. Would you like 15?

DR DI LORENZO: Yes, we would.

MS LUNN: That would be fantastic. We would. Thank you.

DR DI LORENZO: Yes.

MR PAGONE: All right. Well, we'll step out, and we'll get back in in about 15 minutes time, if that's okay with you.

MS SMITH: Yes. So we'll stay here or - - -

MR PAGONE: Yes, you stay – well, stay wherever you like, but 15 minutes we'll come back and hopefully you'll be here too.

MS LUNN: Thank you.

ADJOURNED **[11.36 am]**

RESUMED **[11.55 am]**

MR PAGONE: Thank – I hope the time was useful for you. We found it productive also and we wondered whether it might – whether it might be of value to you if we

suggested a different – slight variation to the process. The questions that we have got around this aspect have been troubling us for a little time. As you know, there's been correspondence on some of this. So it's not – doesn't – it's not completely by surprise that this will take you, although you haven't necessarily looked at these documents in this way. I mentioned in the opening that there are two timeslots that were allocated to organisations that have elected not to participate. One of them's tomorrow, the other one's on Thursday. They're timeslots numbered 4 and 8 and I wondered whether it might be a better use of time if we shared with you some of the concerns. The diagrams are supposed to be able to help identify why we're foxed and puzzled by some of these matters and then we can resume your session on Thursday if that – or tomorrow if you prefer or this afternoon if you really want to or even now, but we thought we would make you that offer.

The downside, however, is that the public gets to know our doubts without knowing that our doubts might be completely unfounded. Now, in the scheme of things, that might not be such a bad problem but I don't want to achieve a negative impact if you, for example, would say, "No, no. We're across all this and there's a simple answer and off we go."

DR DI LORENZO: So first, thank you for making that offer. We've just spent the last 15 minutes working through this document. It is useful for us to have some more time with this data - - -

MR PAGONE: Yes.

DR DI LORENZO: - - - including just recognising we received this via Tigcorp or – and so this is different data or some of this is different to what we have. It would also be useful if the reference materials – if it is possible for us to see those reference materials so that we can understand how these figures were arrived at as well. That would be very helpful and as stated earlier, we've provided all of our files into the review, so you have all of our information. There are a couple of things that will still be necessary to really get to the bottom of that and, you know, it was what I alluded to earlier today that this is a site with a lot of complexity, lots of decisions that have been made over a long period and it warrants detailed examination and we are not in a position where we can conclude yet.

The survey that you referenced to floor levels we actually commissioned. It was a lidar survey that has been commissioned. We're just waiting for the right conditions for that to occur. So we actually haven't got that in our hands and we think that would be critical to inform conclusions. I'm not sure if the best time is Tuesday or Thursday. I'm not sure if that is the right thing but if out of this room we'll work out how might we bring that information back to you because we may not actually have the survey data by Tuesday or Thursday and we think that will be really critical and we would really welcome the opportunity to consider this information further and to marry that back with some of the info we've provided you including the survey data as well – well, not the survey data, the map – the modelling data. Did you want to add to that as well?

MS LUNN: Thanks, Nerina. Mr Pagone, thank you for the opportunity, I think, to consider this a bit further. I think in our minds we've understood the question and that you've put to us is that, you know, just from making notes before is it the floor level, the flood level, both and do you have some survey documentation that might help with this. I think that, you know, looking at the information you provided and thank you for trying to sort of extrapolate out those different pieces of information, I think we sort of just put before that there's there the report that will be resent that's got some information in there about where we might say matters relating to flood level but we need to consider that further and I think as Nerina just alluded to, if there's additional information that might help us sort of join some of the dots together at this stage, that would also be helpful.

I think what we can say is that obviously this is a site that, you know, apropos of, you know, us here today trying to draw that information all together it's got a very complicated history and I think it would do us well to, as you know, take you up on the opportunity to come back and make sure that we're giving, you know, as much as we can a fuller response, just acknowledging that I think due to weather conditions and a number of factors outside of our control, whilst the lidar survey drone surveys have been commissioned and they've been commissioned quite some time ago, we do not have the data back and we would not get that data back is my understanding within the next week. So if it was a come back at some point later this week, we'd of course be sort of – you know, we need to discuss that opportunity and thank you for that but we wouldn't be able to confirm that we would get lidar data back in that short time because of these matters I've just raised. Nerina, is there anything else from you?

DR DI LORENZO: I think at this stage I really need the digestion time - - -

MR PAGONE: Okay. Well, what that - - -

DR DI LORENZO: - - - because it is different information to what we've got.

MR PAGONE: We're not surprised by that because that's what we've had difficulties with. I hear your suggestion that you might need to respond other than on Thursday but I think the best thing would be to be here on Thursday and if the answer is you can't do it, then I think it's probably desirable that bit of information be explored if that's all right.

DR DI LORENZO: Yes.

MR PAGONE: So tomorrow might be a bit tight for you and it would be desirable for you not to come tomorrow and say, "Well, one day is just not enough." But Thursday – well, the slot was between 1 and 3 on Thursday, so if we can – and we can play around with that because there's nobody scheduled after the 1 to 3, so we can do it in the afternoon if – subject to the venue being available. All right. So I'll leave it to each of my colleagues in a moment to just share with you the technical concerns just so that we are broadly on the same page. The single sheet that – in the

four sheets that – no. But just before I do that, there's a process issue that I should raise with you just in case it arises offline and I don't want there to be any awkwardness on your part on this. We, as you know, are not sitting in any statutory or court-like process, although my background is the latter.

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So when documents like this are introduced into a process, it sometimes happens that interested parties ask to look at it. Our view is that we will not be making these documents available because it's a matter for you to look at. If you choose to make them available to anyone who's interested to look at it, that's a matter for you. We can't stop you. We don't encourage you. We don't discourage you. But from our point of view, it's a matter for – our process is a process where we want to get information and assistance from you. It's no part of that process that there be us making available or restricting if you need to make it available. So that's a process question.

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But now turning back to these documents, the single sheet seems to be on its face a survey plan and if it's a survey plan, it would seem as though there has been filling of the land which would seem to indicate that the land should not have flooded. On the other hand, we've got the first page of the other set of documents showing levels which again if those levels are right, there ought not to have been flooding, but we do know there had been flooding. So our question is are we looking at the wrong bits of paper? Have we completely confused ourselves? Has there been some mistake? Has something not happened which was supposed to happen? They are some of the questions. And then on top of all that there are questions about how it came about that the bit of the land was taken out of the overlay. They're the general questions. I will leave the technical chaps to

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MR BABISTER: Yes. I certainly appreciate you need to take some time to understand this but I think the core aspect's reasonably clear. We have ground levels. We have proposed building levels and flood levels that would suggest that nothing has flooded and the other piece of information probably worth looking at is you provided us on flood extent observations that was carried out by Jacobs, a simple figure that shows the flood extent. That also shows that the land was inundated well above the flood level or maybe the ground levels are wrong. And clearly your survey will provide when it's available a significant amount of clarity that we might just be speculating until you get that piece of information. So our question is what was the flood level and how far different it is to the designed flood level and is that the reason why the buildings flooded or is it something to do with the drain not being filled to the level we all expected or is it a combination of those factors? And if it's the flood level, I guess the issue is how come the flood levels are so far different from the modelling?

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DR DI LORENZO: I think just aggregate – on aggregate our – we would concur. We identify here that there's a range of factors and something happened here that was different to what was expected. That – we're on the same page there. We think there is a number of things that could have contributed and that is what we are not clear about, the extent to which it was one issue or another. We think the survey

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data's really important because that gives us a place of fact to begin from. That will help us respond to those questions but we are of the same view that this is an area that needs this further unpacking because some things occurred here that were different to what was expected. So we openly, you know, put that on the table and absolutely recognise that needs further unpacking. This further data is useful to us and that further survey data will be important but I'll just Rachel, do you want to just add to that.

MS LUNN: I think we just concur with Nerina. I think that we're minded and with you that we understand the challenge that we have here in unpacking those different layers and the causation factors but I think that definitely that we could provide some more information or conclude this in a more fulsome way as far as we're able to by Thursday, just noting that we might not have that actual physical check of today that whether the -- whether a plan that was provided at this time actually matches what we've definitely seen onsite. So we might not have that but we could definitely provide some more fulsome information by Thursday if that's permitted.

MR BABISTER: I guess the other aspect too is normally when we're looking at things like this we end up drilling into the numbers and doing some very precise calculations but the mismatch here is so big that we don't need to do something like that. We're looking for a very large explanation of what's occurred, not whether some minor model change has been made.

PROF MAIER: Thanks. I don't have really much to add and I think, you know, there's definitely a complex history but I think for now, really, it's reasonably simple. You know, it's what are the actual floor levels, you know, what was the actual flood level and then comparing both with their design values level, you know. Was the flood higher than was expected from the modelling and, similarly, are the actual floor levels different from what they were supposed to be because, you know, both supposed to be indicate there shouldn't be flooding we've said that a number of times. In terms of Thursday, I mean, the mention was made of the Maribyrnong -- you know, the mid-Maribyrnong model, you know, the verification that Jacobs did and there was some mention that there was some discrepancies. It would be -- if it was possible just to have some around, you know, what at that particular site -- you know, what -- you know, again, what is that difference or, you know, what would that be, that'd be really helpful but then also, of course, now the survey's critical and we can't -- you now, but that probably won't be available but at least it gives us, you know, the other two truth points we need to know of what was the actual flood level, what was the floor level and go from there.

DR DI LORENZO: Yes, yes.

MR PAGONE: Thank you. Well, that was described as a simple question. I'm now going to give it to Mr Peggie to make it a more complicated question.

MR PEGGIE: Thank you, Mr Chair. Just to qualify too, these are the Neil Craigie reports that were endorsed by Melbourne Water throughout. So there's a range and

various correspondence that endorses these numbers and that informs us in part of the planning permit that applies to the Rivervue development. In simple terms, we have a survey plan and the question I have to you because it's been sourced by yourselves is do you believe that to be a correct certified survey plan?

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DR DI LORENZO: yes. This is the various yes.

MS LUNN: Mr Peggie, that's a good question. The plan that we have provided is what we believe to be the copy of the certified survey plan from the date that's shown on that plan. We do have a gap in records management from one of the receipts of this but this is the date and as you will be aware a survey or certified by a qualified surveyor is unable to be altered, so the provision of this was provided to us by the applicant's surveyor and the date that it was provided on is as shown on here. So this is without actually having the lidar data to confirm that this survey matches to today and as you know land moves and it might not be precisely every single sort of to the second decimal point as today but this is what we believe to be the as built situation at Rivervue and obviously it shows a variety of cut and balance works and it shows a variety of floodplain modifications. So, yes, to answer your question that is what we believe was built when we've allowed changes and further permits at the Rivervue site.

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MR PEGGIE: Okay. And the planning scheme amendment that LSIO at the site, do you believe that this was the plan that they utilised to make those changes and be satisfied with those changes?

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MS LUNN: While I didn't work at Melbourne Water at the time, we've been able to speak to the officer who made that decision. It's our assessment of our records and the correspondence between ourselves and counsel and our flood modelling expert, yes, to answer your question this is the basis on which I believe decisions were made at the time to say that works had been completed to the extent that the land was no longer subject to flooding in the areas that it was and therefore, as you know, that overlays require us to remove encumbrances on land if the encumbrance no longer exists. So if there was a heritage property and it was removed, we would remove the heritage overlay. If there is flooding that we believe and models have shown us is no longer there, it's incumbent on us to remove the land subject to inundation or any other overlay.

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MR PEGGIE: And the numbers that elicit the here and it's probably useful to use the because that's the most recent report endorsed and it forms part of the planning permit, those numbers when they're – they are the one in 100 interval and the height at the site. When you're cross referencing those numbers with the numbers on the survey plan, it's apparent, clearly, that these are well above the 600 millimetre freeboard; you would agree?

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MS LUNN: I think pursuant to us coming back on Thursday just as Nerina said to us to do any checks to what's here, then I would agree with your assessment. If that is the correct plan and these are the correct last numbers, that does appear to be the

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case. Obviously, we're still undertaking further work but I would concur with your initial suggestion.

5 MR PEGGIE: And Mr Babister referred to the endorsed plan from 2017 to certain stages that were inundated and finished floor level noted and I'll benefit from – the finished floor levels in that plan clearly show numbers and elevations that are greater than the numbers in the Neil Craigie report and once again are above and beyond the freeboard required; is that right?

10 MS LUNN: So, yes, from the information he provided us, I'd say that the plan that you've just shown looks to me from the assessment that it's six to seven hundred mil above the floor level that's shown on your first document. Yes.

15 MR PEGGIE: Okay.

MS LUNN: Obviously, we'd need to come back and just check that and, yes, make sure that we've understood the documentation you've provided to us more fully.

20 MR PEGGIE: Thank you.

MS LUNN: Thank you.

MR PAGONE: Thank you for that. Unless there are other matters that you'd like to deal with now, we may as well just adjourn until the Thursday at the 1 o'clock time. That's the time where the facility available – that's what drives the timing. If
25 that's convenient, we will.

DR DI LORENZO: I think you've got a panel member asking a question. Yes.

30 MR BABISTER: Just – if I could just bring your attention to one other minor detail just so you come back informed. On the third page that I provided if you look at the third row of properties which would be (e), (f), (h), it's got the floor levels there, just it's worth noting that some of them have a 6.32 below the ones closest to the river. So you might want to factor that in. I've only just noticed it, so I just thought it
35 would be worthwhile to bring that up.

MS LUNN: Thanks. Agree and noted and we'll come back on that one. Thanks.

40 DR DI LORENZO: So just through the chair, so I think we were looking to play back some requirements that I think, you know, we imagine there might be some things that we would take away, that we'd come back with more information on this matter. This is the primary matter, really. There aren't any other matters that we're being asked to provide anything else out of the room, although if there any subsequent requests, we would be very happy to work with those. We have some
45 tasks being to digest what's – what you've shared with us as new documents. That is very useful. Thank you for doing that. We, I think, will resend or send the further –

you know, the Jacobs work that was done on the model. That would be useful to resend that. So we'll do that out of here.

5 What we'd like to do is work out – well, we'll try and work out if we can get some
timeframes on the survey data. That's going to be really critical and I think the
proposition is to return Thursday. The query or the thing I'd like to be able to do is
just confirm that once we've worked through how we manage this. So we'd like to
aim for Thursday as well but would like to just confirm that out of the room if that's
possible because we do need to just work through what can be provided by then. So
10 that's probably the one request that - - -

MR PAGONE: Well, I think it would be desirable if the confirmation occurs on the
Friday – on the Thursday, rather. I don't mind you telling us ahead of time - - -

15 DR DI LORENZO: Sure.

MR PAGONE: - - - but we – there may be some questions and answers about that
which is best done sort of face to face rather than in correspondence.

20 DR DI LORENZO: Yes, yes.

MR PAGONE: So that we – I mean, for example, it may be that you've got a
number of explanations about why is it you can't do it by Thursday which is
perfectly understandable. I'm not suggesting for a minute that it's a lay down misère
25 but organising these sessions given where everybody comes from as well as the
diktats of the bureaucracy the department is difficult so that organising another
face to face time just probably will be very hard and if the answer is it can't be done
by Thursday, then I think on Thursday that should be said. Not to suggest for a
minute that you're going to get wrapped over the knuckles or be criticised. It's just
30 that it ought to be said openly publicly and we may need to explore some issues
about why that is so. So I'm more than happy to have advance warning if you wish,
that's fine. I'll be here Thursday and it would be nice if one of you at least is and –
and I am also conscious of the fact that a potential other side in all this has
elected not to participate. That time for tomorrow is still available and I don't
35 propose to remove the time. I'll be here and if they turn up and say, "Well, actually,
we'd like to participate," that's fine too. Because there's got to be – there must be an
explanation for this. Either the explanation is that we've made a mistake or
somebody's made a mistake or somebody's fallen foul somewhere but it's not
desirable that it be left unexplored. Is that helpful?

40 DR DI LORENZO: It is. We value the face to face time as well. There is a lot
more that can be resolved through face to face discussion, so we completely
recognise that and value that. We also note that not all the parties are in the room
and also surfacing the information in the same way, so this is useful to get this
45 information but recognise that it is new information. So we will endeavour to - - -

MR PAGONE: Sure.

DR DI LORENZO: - - - utilise the time in the best way.

MR PAGONE: Okay. Thank you. All right.

5 MR BABISTER: I just have one – sorry. I keep doing this. One thing that if you have time and I know you might not would be to actually look at the river and this area too. I think that’s probably the only issue that can’t be resolved by ground survey, whether it’s changed significantly.

10 DR SMITH: Sure.

MR BABISTER: But you might not have access and time to do that.

15 DR SMITH: We can make the request and I’ll come back with that information either on Thursday or subsequently.

MR PAGONE: All right. Well, we will formally adjourn. We’ll be here again tomorrow with the next session and in the meantime thank you. The – I’m sure that I speak for my panel members. We’ve found the exchange informative and useful and so we do thank you for the time taken. These are difficult questions and have been very much assistance. See you in your case Thursday.

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MATTER ADJOURNED at 12.23 pm UNTIL TUESDAY, 18 JULY 2023

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MELBOURNE WATER

THE HONOURABLE G. PAGONE AM KC, Chair
PROF H. MAIER, Panel Member
MR M. BABISTER, Panel Member
MR T. PEGGIE, Panel Member

PUBLIC CONSULTATION SESSIONS

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9.15 AM, TUESDAY, 18 JULY 2023

Continued from 17.7.23

DAY 2

MR PAGONE: This morning's session will be very short. It really is just by way of apologies for those of you who are attending and a slight explanation about this morning. Late yesterday afternoon, more particularly yesterday evening we received an email from [REDACTED] who was due to appear today to assist us with understanding what had happened in this locality during the flood event. I understand that there had been a – an earlier communication by somebody from the council to Melbourne Water which informed us that we might be receiving a message or a communication from [REDACTED] who was supposed to be here today. The message from [REDACTED] is to the panel administrator and its contents is brief. It says:

Unfortunately, I won't be able to attend tomorrow. My apologies.

No further explanation has been given. There has been a communication between the panel and the Moonee Valley Council concerning [REDACTED]'s attendance. We – correspondence began at a time when [REDACTED] was still employed by the council. The panel members met [REDACTED] informally when we – not long after we were appointed. [REDACTED] had been very closely involved with the events at the time that they occurred and gave us a great deal of very valuable factual information which however because it was an informal meeting was received by way of background and not in any permanent form or in any formal way. So we have been hoping that [REDACTED] might have been able to give us that information, again, not on behalf of the council but just as the man who had been here actively involved in all of the activity way back in 2022 so that we could have received it in a more formal and permanent way.

We wrote to [REDACTED] in May thanking him for his assistance. We were informed subsequently that he was no longer employed by council. We acknowledged that fact. We invited council to attend and they're obviously being very helpful in providing these facilities and have made submissions for which we're very grateful. They have elected not to attend and that's a matter that they're entitled to do. We were informed again that on I think it was the 3rd of July that – no, it was a bit – that was a bit earlier we were informed yet again that [REDACTED] was no longer a member of council. We wrote back saying that we understood that. We also informed council that there had been no minutes taken of the initial meeting with [REDACTED] because it was essentially an informal site visit. That was in our letter of the 3rd of July.

We were informed by other communication from council that [REDACTED] was not representing council and should not be seen as representing council and most recently on the 16th of July we wrote back after yet another letter from council reiterating those positions that we understood that, that he was no longer an employee of the Moonee Valley Council and that he was not attending the consultation on behalf of Moonee Council and that I had proposed to make that clear at the commencement of the session scheduled for today to avoid any doubt that there might otherwise be. The council were again invited – as I say, they're perfectly

at liberty not to attend. It's unfortunate for us because someone who was actively involved at the time for council we are now not able to hear from and the public similarly can't hear from it. However, such recollection as we have we'll be able to act upon. I thought it was important for those of you who have taken the trouble to be here to explain why it is that there will not be the event that you expected at 9 o'clock today because the man who was going to give us the information is not here and we don't know why he's not here. We just know that he informed us at 6.21 yesterday that he would not.

So my apologies to you. We will now resume working in the background as we continue to do and there is another session which I think is planned for 1 o'clock. For those who are planning to be here for that, look forward to seeing you. Thank you.

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ADJOURNED

[9.22 am]

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RESUMED

[1.05 pm]

MR PAGONE: This is the second session. The third one scheduled but the second session of the public consultation with representatives from the Brimbank City Council. I presume we have Leanne Deans and Mr Tom Razmovich. Have I pronounced that vaguely correctly?

MR T. RAZMOVSKI: Razmovski.

MR PAGONE: I was completely off, wasn't I?

MR RAZMOVSKI: Close. That's all right.

MR PAGONE: Well, thank you. The process that we're adopting is – apart from thanking you from being here, it's really important for us to have as much feedback and comment as possible. We've read your submission and we thank you for that. I thought we'd give you an opportunity because some time has passed since the submission was put in and you've probably read some of the material that has also been sent to us over the time. You've had time to reflect and we need to make some recommendations and hopefully we'll be informed by what you've got to say about what we should do. So over to you.

MS L. DEANS: Okay. Well, thank you very much for the opportunity to present Brimbank City Council's submission to the review of the Maribyrnong River flood event. Brimbank Council has a strong interest in the review as the Maribyrnong River traverses the Brimbank municipality. Within Brimbank, the Maribyrnong River corridor accommodates a range of significant open spaces including Brimbank Park and Horseshoe Bend Farm as well as industrial and residential development and

agricultural uses in the Brimbank part of the Sunbury Green Wedge. While the impact of the flood event was more extensive in the cities of Maribyrnong and Moonee Valley, there were also impacts for some private and public properties within the City of Brimbank.

5 On the morning of the 14th of October 2022 council's emergency management along with emergency services and Victoria Police were called to provide assistance to Brimbank residents that were impacted by the rapid rise of water along the Maribyrnong River. It is understood that unprecedented prolonged heavy rainfall
10 over several days combined with an intense rainfall event over a short period of time on already sodden catchments were the contributing factors to the flood event. The Victorian State Emergency Services or SES is the control agency for flooding in Victoria and are responsible for planning for floods, supporting community preparedness and managing the flood response. We understand Melbourne Water is
15 generally responsible for the installation and maintenance of drainage systems including drain capacity and flood mitigation works for catchments within areas greater than 60 hectares.

20 It was advised by the SES on the 13th of October around 11 pm that the Maribyrnong River water levels were within acceptable limits, however, by 2 am that following morning water levels had significantly risen, impacting residential properties along Hunter and Flora Street in Keilor. Given the speed of the rising floodwaters during the nights and – residents and property owners did not have enough time to relocate equipment and belongings. Within the area defined by the Melbourne Water terms
25 of reference council is aware of 10 private properties within Brimbank that were impacted by the flood event. Four properties were either fully or partially in the land subject to inundation overlay and six were not. Two properties of these at 13/16 and 6/20 Hunter Street, Keilor are within the land subject to inundation overlay, while two properties located at 660 Flora Street, Keilor, being townhouses 7 and 8 are
30 partially in the land subject to inundation overlay and six of the remaining properties located at 660 Flora Street, Keilor being townhouses 1 to 6 are not in the land subject to inundation overlay. This is a correction to our written submission which indicated that the land subject to inundation overlay didn't apply to any of the eight properties at 660 Flora Street, Keilor.

35 None of the impacted properties received any advance warning about the potential for flooding in relation to the flood event and then after that council's clean-up assistance to these residents went on for a number of weeks which included waste removal from flooded properties and cleaning. Council's resources were also
40 allocated to the removal of debris from public property including the clean-up of public roads and repairs to public infrastructure in the surrounding areas. Council is also aware of properties along the Maribyrnong River and within the Brimbank Green Wedge which is outside the area defined by the Melbourne Water terms of reference also suffering losses including property and equipment damage and
45 equipment being swept away in floodwaters.

The historic Arundel Road Bridge in Keilor was also destroyed by the flood event. Again, while it's acknowledged that the historic bridge is outside the areas defined by the Melbourne Water terms of reference, the loss of this heritage asset is important nonetheless and at the time of preparing our submission we believed that our insurance would cover the bridge. However, we have since been advised this isn't the case. So we are concerned about the potential insurance implications for property owners adjacent to the Maribyrnong River and other waterways and we're aware anecdotally that across Australia there has been – when there has been reports of flooding that this has resulted in significant increases to insurance premiums or even cases where property owners are unable to secure insurance or insurance is limited. This is likely to create a level of stress and anxiety for property owners about future flood events and the ability to access affordable insurance.

Council also have included in its submission that the inundation of potentially contaminated floodwaters onto property adjacent to the Maribyrnong River may also present risks to human health. The Maribyrnong River Valley is surrounded by potential contaminating uses including aviation, industry and landfills. There is already known contamination in the Maribyrnong River and over recent years council has participated in a series of engagements with property owners in the Brimbank Green Wedge and Melbourne Airport representatives about PFAS contamination associated with Melbourne Airport. Council has raised in its submission that flood events may necessitate a health risk assessment to assess any potential impacts to human health from flooding.

Council's submission also made a range of recommendations for consideration by the panel and these include the need to review municipal storm and flood emergency plans including council's and provide advice about whether any changes are required as a result of the flood event, the need for some type of warning system and communication to residents and property owners about the risk of rising floodwaters, the need to give consideration to possible mitigation measures that could be implemented in the Keilor area to protect affected properties from future inundation, the need to review flood mapping data within the catchment with consideration to the type of future flood events anticipated, particularly as a result of climate change. And since preparing our submission we understand that Melbourne Water has commenced a flood study and recently approached council officers about involvement. Once flood mapping has been revised and updated, we believe that Melbourne Water should then undertake a GC amendment as the planning authority in consultation with Brimbank, Hume, Maribyrnong, Melbourne and Moonee Valley City Councils to ensure a consistent approach to flood mapping is applied along the Maribyrnong River.

We also highlighted the need to reflect this type of work in regional plans, strategies and planning policies to ensure that work is strategically aligned, integrated and coordinated. The flood event has had significant social, environmental and economic impacts on residents that experienced flooding to their properties. While this occurred to a lesser extent in Brimbank, council also highlighted the importance of providing continuing support including temporary accommodation, counselling,

access to affordable insurance and other support and to maintain this over the long term as required. Council looks forward to the flood review progressing and the implementation of meaningful measures that will help increase awareness, emergency management and mitigate the impacts of flooding on private and public property while promoting the health and wellbeing of the river and surrounding communities. Thank you.

MR PAGONE: Thank you very much. Do you wish to add something as well?

MR RAZMOVSKI: No. That's our complete - - -

MR PAGONE: Thank you. I'll pass over to my colleagues who have questions and then we'll come back to me.

MR BABISTER: Thank you for that. That was good and certainly aligns very well and that correction on the those two properties, that's really helpful. But what I'd like to explore is the warning. You mentioned they basically had no warning and it happened so quick. Can you articulate a little bit more about what some of the residents have said to you about warning during the event or how much they got or -- or were they completely caught unaware? Was it that simple?

MR RAZMOVSKI: Yes. Yes. It's pretty much that simple. I was there in the morning. I was there around about 5.30, quarter past 5 in the morning. Residents especially in the Flora, Hunter Street area were all outside their properties. The water had risen all the way until the -- their apartment building. So there's a garage underneath and then their liveable areas are on top of that. So the floodwater had risen above the -- well, to the underside of the garage areas. So anything in their property, cars, were absolutely flooded and they were outside. I was there with the police and SES volunteers assessing firstly human -- if there was anyone in the properties. We couldn't account for one person. We finally found that they were on holidays and the house was just locked up. Once we realised that we sort of felt more at ease that there was no human impact and then the recovery side of things.

As I was there throughout the day, I think it was about a couple hours later you can see the water dissipating, so the -- Flora Street had risen all the way to where the property boundaries were and then it had sort of like dissipated another probably metre, metre and a half over a number of hours. That's how quickly it -- it went up and went down sort of like straight away.

MR BABISTER: And the residents because they were out -- they were aware, they took some preventative measures and limited their damage?

MR RAZMOVSKI: They were getting what they could with them, personal belongings and making accommodation, you know, alternative accommodation where they could and seeking council assistance where they couldn't.

MR BABISTER: I guess there's not much you can do in a couple of hours anyway.

MR RAZMOVSKI: Correct. Yes.

MR BABISTER: Okay.

5 MR PAGONE: Next question. I might just sort of try to delve a bit more into the
warning issue because you're at the frontline of the warnings question, really, one
way or another. There might be a warning given by an authority like Melbourne
Water but the council might also need to do some warning or give some warning and
10 in any event you'll be at the receiving end if people are unhappy about it. One of the
problems with warnings is that if you give the warning and it doesn't eventuate,
people get really annoyed because they've gone to lots of trouble and – and yet if
you don't give the warning and something terrible happens as occurred on this
occasion, they get very annoyed because they weren't able to anticipate. What's the
15 solution from somebody on the ground floor?

MR RAZMOVSKI: Well, I think we've got a duty of care to provide that warning
even if it's received negatively, they got to be aware of it. Like, the people jumping
up and down, one had just bought a brand new car, put it in the garage and left for
20 holidays and when they got back the car was totalled, full of water. They just opened
the garage and it was actually the father who came and approached me and he said,
“My son just bought that car, \$120,000, put it in the garage and he's gone on
holidays and now it's,” and I said, “I hope he's insured.” So I'm not really where
they went with insurance but that could have been, you know, a costly exercise in
25 that regard but, you know, pre-advance warning saying that listen, we got – and we
knew in advance probably about a couple of weeks that the water – the rainfall
intensity was increasing, the land was saturated as we mentioned in our verbal
submission now. That people would be aware and make their own measures to, you
know, either move belongings or just make safeguard for their personal belongings.
30 I think that's more of a preventative measure than the last minute what occurred on
the day and people sort of like taken by surprise.

MR PAGONE: Well, what about last minute on the day where until the minute
before the last minute it didn't look as though it was going to – what did happen was
35 going to happen? What's your thoughts about - - -

MR RAZMOVSKI: I think there was enough evidence that something may have
occurred because the flood we mentioned at 11 o'clock it was increasing, the
floodwaters, and by 2 o'clock it had risen by more than 10 metres. So there was
indications that something did occur. So that advance warning at that point in time,
40 it would have been, you know, be alert, be aware, make your necessary measures and
there's understanding of those low flooding areas for those people to be notified, you
know, way in advance to make their own, you know, reasonable measures to
safeguard against their belongings.

45 MR PAGONE: All right. Moving away from the warnings issue and looking at sort
of the management of the infrastructure once the event has occurred, one of the
stories we heard largely informally, although we've now subsequently received

footage and information, was of a business not in your council – so this is a theoretical question from your point of view but nonetheless, be interested to have your view about where the waters were – were rising. The business – there was a business that was right on effectively the bank. It was on the other side of the road.

5 Nonetheless, not much space between the bank and them and the waters were rising, so it was going to get inside the building. And for some reason not fully understood and it's outside of our terms of reference some semitrailer is allowed to drive through the road with a consequence that the water ends up creating an additional wave, causes breakage and therefore increases the amount of damage that occurred rather

10 than just the damage that would have occurred without the semi going through. How do you balance from a council point of view all of those competing demands? Like, if you leave the semi sit where it is, there'll be damage. If you let it go through, there'll be damage. What's the answer?

15 MR RAZMOVSKI: It's not a simple question but everyone will undertake a risk assessment and see what the actual consequences are in that regard. So that one as a consequence would have been – the business would have been – I don't know – X amount dollars, you know, disruption and then are they insured against that decision? There's a liability, whoever makes those calls sort of thing. So, fortunately, we

20 didn't have that event happen to us but we did have the incident with the Arundel Road Bridge that – you know, the historical bridge. In our situation there was a property owner that had a container. He had equipment in a container. When the flood level rose, it took that container underneath the Arundel Road Bridge and once the water subsided, it went underneath the bridge and it took out that pedestrian

25 bridge. Completely just wiped it out.

So there's consequences there in terms of how people manage their own property and liability in that regard but in theoretical – I can't answer specifically your question because it didn't occur to us and we don't have that same situation with businesses

30 and other impacting interests. More in the local road response, we would close the road, make determinations, do some risk assessments and then if there's a request to allow traffic to go through, we'd understand what those impacts are and make a call on that. And in that situation, we didn't – it didn't come across – we didn't have that experience, so - - -

35

MR PAGONE: Sure.

MR RAZMOVSKI: - - - I can't specifically respond to that answer.

40 MS DEANS: Yes. And I might add, you know, my limited knowledge of semitrailers moving through flooded waters, it's also the pace that a truck might move through.

MR PAGONE: That's true.

45

MS DEANS: And I would suggest that, you know, with effective emergency management that you wouldn't just have a truck move through at the type of speed

that would cause that sort of disturbance. I would – you know, it's always easier with the benefit of hindsight but I imagine that if there were people onsite managing the response and are aware that a truck was going to move through flooded waters, that it would be moving through, you know, at a speed that wouldn't create the sort of disturbance that might contribute to - - -

MR PAGONE: Yes.

MS DEANS: - - - the damage that's occurred and I don't – I mean, it's a bit hard because we are talking without, you know, real knowledge of the circumstances but, you know, if a truck moves through at an unreasonable pace, you can imagine the disturbance in water that that would cause more damage than at a slower pace. It may raise water a little bit higher than it was as well but again if there is people onsite making these assessments, you would hope that if that's going to occur, it's a decision that's been made to minimise the impact rather than it just occurring without any thought or – of the consequences of - - -

MR PAGONE: Yes. I don't think it was travelling at formula 1 speeds but - - -

MS DEANS: No. Well, you don't – I mean, I guess, what I'm – you know, a truck that size doesn't - - -

MR PAGONE: Yes. It - - -

MS DEANS: - - - have to move very fast - - -

MR PAGONE: No. To have a - - -

MS DEANS: - - - to create a disturbance.

MR PAGONE: Indeed. All you need to do is look at the moving a hand in the bathtub and you'll see that just a slight movement will have an impact of some kind. Can I just ask you a couple of minor questions. I hope minor, although one of them might not be quite so minor depending upon how you answer it. In your recommendations, one of – your very first dot point is you wanted to change the terms of reference to expand the catchment to include you. Well, now beyond the fact that we've heard you, is there anything else that - - -

MS DEANS: Yes. Look, we have a number of property owners in North Keilor which – it's an area outside – just outside the urban growth boundary which is called the Brimbank part of the Sunbury Green Wedge. So, essentially, market gardeners and other types of uses in what is a – sort of an agricultural – more of an agricultural area. Those property owners came to our council and met with our CEO and executive very distressed about the damage that they received as a result of the flood event and I think it goes back to the warning again, that there was no warning and they weren't able to react to minimise the damage that occurred. But nonetheless, they certainly approached our council very, very early after the flood event and were

quite aggrieved about what had happened and then when the review was announced and the terms of reference were released, they were very upset that they were excluded from this review. So I guess because we are – you know, we represent the whole of the City of - - -

5

MR PAGONE: Sure.

MS DEANS: - - - Brimbank, we felt that we needed to raise that in our submission. We certainly encouraged them to approach Melbourne Water about it but they
10 continue to be, you know, very, very aggrieved about the flood event and, you know, there are a range of other implications for property owners in that green wedge too because it is an area that's commercially limited in terms of what it - - -

MR PAGONE: Yes.

15

MS DEANS: - - - can do. They are impacted by the Melbourne Airport Environs Overlay. They are in a green wedge. So there's only certain uses that they can actually pursue in that area. So it's an area which, you know, we're – we understand there are a lot more impacts than just, you know, things like a flooding event but I
20 guess those owners are particularly keen to have opportunities to be heard - - -

MR PAGONE: Yes.

MS DEANS: - - - about the issues they see as impacting them.

25

MR PAGONE: And apart from the fact of being heard, are there any – is there any particular thing that they want to be heard about that we are unlikely to have heard from others?

MS DEANS: I might refer to Tom because I think they met – were you in the
30 meeting, Tom, when they came in to council and - - -

MR RAZMOVSKI: No, not at council but I did meet with them onsite and their - - -

35 MS DEANS: Yes.

MR RAZMOVSKI: - - - their biggest issue was the damage, you know, to their fencing, a lot of the material that was – landed on their properties, they had to remove it so there was an additional removal cost. So we helped out where we
40 could. We're talking about large excavators going in on their land - - -

MR PAGONE: Yes.

MR RAZMOVSKI: - - - large properties. They're farmland properties. So we
45 assisted them with repair to their fencing and things like that. But they had other issues as well because with the PFAS going into Maribyrnong River, they use that

water to actually supplement their businesses in terms of farming. So they got those kind of concerns with the contaminated water.

MR PAGONE: Yes.

5 MR RAZMOVSKI: There's other activities happening on the other side because that's the boundary between Brimbank and Hume, so there's other activities. So they got a number of complicated issues that they're trying to address through council and they're so complicated. We're really receptive to them because they're our residents
10 and we're sort of like – we're accommodating where we can but a lot of their complicated issues, sort of like, we can't resolve as a council entity.

MR PAGONE: Sure.

15 MR RAZMOVSKI: So we just – we advocate on their behalf - - -

MR PAGONE: Sure.

20 MR RAZMOVSKI: - - - about their complicated issues.

MR PAGONE: All right.

MR RAZMOVSKI: But where we can support like - - -

25 MR PAGONE: I understand.

MR RAZMOVSKI: - - - clean-up and things, we do.

30 MR PAGONE: Well, just before I turn it back to the other panel members in case they've got any other questions, they – have you got any questions?

MR PEGGIE: No one.

35 MR PAGONE: Only the one. All right.

MR PEGGIE: I was just interested by the commentary in regards to the historic Arundel Road Bridge and the fact that the insurance didn't apply. Did you want to elaborate further in that regard.

40 MS DEANS: Well, I wish I could actually tell you why it didn't. I – we can get the information from our property manager as to, you know, the conversations and correspondence with our insurance company. I know that when we prepared the submission we thought that the insurance would cover the restoration of the bridge because we were reporting that to our heritage advisory committee and we've got a
45 very active historic society in Keilor who have been most interested in all assets in Keilor that really distressed by the loss of that bridge and I only learned recently that the insurance wasn't going to cover the – well, the bridge wasn't insured. So I think

we'd have to take that question on notice and just get some advice from the property manager as to why it – but that's probably the best we can do today.

MR PEGGIE: Okay.

5

MR PAGONE: Thank you. Thanks, Tim. We've got another one.

10 PROF MAIER: Thank you. You mentioned, you know, a really important point about climate change and the impact on the LSIO and how do you think that would play out in terms of, you know, say if the boundary was changed and how would that effect residents and how you – you know, and the impact on them for example insurance and also, related to that, how aware do you think people are where the LSIO is? You know, you talked about those eight townhouses and two are sort of partially in there and six are outside. Do you think – in general, do you think people
15 are really aware of where that boundary is and how that impact is and also then the climate – you know, if that - - -

MS DEANS: Yes.

20 PROF MAIER: - - - boundary changes, what's the impact of that going to be?

MS DEANS: It's funny you should mention that. We were just talking about, you know, what used to be one in 100 years doesn't seem to really be the case. It feels like it's one in 10 these days but when you – so, you know, what are the impacts. I
25 mean, we expect that flooding – when flood events occur, they'll be more intense. The droughts will be drier, the temperature will be hotter but when we do get the flood events that they will be – they'll be more intense. It was a very specific set of circumstances that led to this. We were in the La Nina pattern at the time. So, you know, you don't – you know, it's not as common that you would have all of those
30 circumstances but I guess that's the thing about climate change. You know, you expect the unexpected and I think, you know, from our perspective we expect flood events to be more intense and for that, you know, there needs to be a certain amount of preparation.

35 When you ask about the awareness of our community, Brimbank is a really multicultural area where more than half of our community don't – well, English is a second language. And I think, you know, it's easy for, you know, for us to think that they would probably be aware of these things but we know that our community is not always as aware of the things that we think they might be aware of and because a lot
40 of the communications going out are still in English and I guess, you know, there's a lot more that we know needs to be done around community engagement and information that goes out to the community and I'd probably draw your attention to some of the early communication around the COVID pandemic and I don't know if you recall, but Brimbank was one of those highly impacted municipalities and one of
45 the reasons for that was because, you know, the communications going out very – very early in the piece were in English and it took some time for the translation of that information to occur and it took some time for us to get the right sort of

engagement happening with different cultural groups and that information really being understood at a local level.

5 So, you know, I – there's definitely parts of our community that would understand climate change and the impact of it and there's certainly some people that would understand that, you know, when you have a big weather event that there is the potential for flooding but I don't think anyone really thought that it would be as extreme as that and to some extent – like, I come from the country and I'm used to bushfire warnings so, you know, when there's a bushfire warning that goes out, I
10 listen because I've lived in the middle of the bush and there is no escape. You just need to have a place you can go and be safe. You can't – you're not going to get into the valley. You're in the bush in the mountains. And so I think for those people that have grown up used to warnings and used to, you know, reading weather patterns and thinking beyond, you know, just, you know, it's going to be 35 degrees
15 tomorrow and a north wind blowing. I think that, you know, my assumption is that a lot of people sort of need – you know, they need a bit of assistance and guidance around understanding what that actually means, particularly in a place like Brimbank where a lot of people haven't necessarily grown up here or they might only be first generation, so - - -

20 PROF MAIER: Thank you. I mean, so but do you think they're aware that they might be living in potentially a flood zone? Do you think there's a lot of people – you know - - -

25 MS DEANS: I would say some people, not all people that – yes.

PROF MAIER: Yes, yes.

30 MS DEANS: There's a lot of people that don't do their due diligence when they acquire property.

PROF MAIER: Yes, yes.

35 MS DEANS: We hear that all the time and we love it when they call council and say, "I'm about to buy a property."

PROF MAIER: Yes.

40 MS DEANS: "Can I just inquire about, you know, what the overlays are," we love that.

PROF MAIER: Yes, yes.

45 MS DEANS: But – yes. Not enough people do that.

PROF MAIER: Yes, yes. And so I guess that means the warnings are doubly important, aren't they? Because then if people aren't aware that they might be living in a flood overlay or something like that.

5 MS DEANS: Yes.

PROF MAIER: In terms of the warnings though, I mean, it's very tricky, isn't it? I mean, in particular, you've had this event where it was sort of in the event and you had – you know, it was a very quick rise. Like, do you have any thoughts about –
10 you haven't personally had much opportunity to sort of talk to the bureau or SES or someone who – you know, issues the warnings to provide your input? Is that – or do you sort of just – it just happens?

MS DEANS: I don't think council really do generally have those conversations
15 with the bureau.

PROF MAIER: Right.

MS DEANS: I think the expectation thought would be that – I mean, you know, again it's easy with the benefit of hindsight. I mean, when we look back and look at the circumstances that led up to it, they were pretty unusual to have that much flooding over the catchment and, really, to have that intensity of rainfall in the manner that it came through, I think when we look back, we would assume that if we were meteorologists, we probably could have predicted it, you know, and then I
25 guess if we could have predicted it and we know where it's going to happen, it's an easy thing then to contact councils and say, "Look, it'd be great if you could go out and give the residents in specific areas some warning and to get that sort of communication out through the media."

30 PROF MAIER: Yes.

MS DEANS: I think all those things can be done and I think they can be done in a way that is – you know, that this is a particular event that we're experiencing. There is absolutely potential for flooding and people may, you know, need to stay alert and
35 consider whether they might want to move along from sort of lower areas that could be at risk. I think from our perspective, we didn't have as many properties that were impacted but our guys were out onsite the next morning and through our emergency services probably could have gone out the night before if we'd known.

40 PROF MAIER: Yes.

MS DEANS: I think, you know, we didn't know at 11 but we did know at 2.

PROF MAIER: Yes, yes.

45 MS DEANS: So and we're out in those early hours of the morning. I know that gets harder for bigger areas but then I think, you know, we do – that's where I think,

you know, maybe we do need to have that conversation with the meteorologists to sort of say, look, you know, maybe our communication does need to be different around this sort of stuff. Without saying it's going to flood, talk about the potential for flooding and having people on alert rather than thinking nothing's going to happen.

5

PROF MAIER: Yes, yes.

MS DEANS: I don't know. It's not an easy - - -

10

PROF MAIER: No, no, but - - -

MS DEANS: - - - easy - - -

15

PROF MAIER: - - - it's good to understand though. Yes.

MS DEANS: - - - problem to solve.

MR PAGONE: I think Mark's got a question. Did you want to add to that?

20

MR RAZMOVSKI: No, that's fine.

MR PAGONE: No. Okay.

25

MR RAZMOVSKI: I was just going to say one thing. There's a Vic Emergency app that everyone uses. When I speak to Melbourne Water and emergency services, they say that's one source of truth. So if people are connected with that, they can see early warning systems but not everyone may be familiar with that - - -

30

PROF MAIER: Okay.

MR RAZMOVSKI: - - - but that's one thing I - being part of emergency services at Brimbank, I usually look at that - is there warnings and specific sites and if people were aware of it, they can actually monitor it through that actual app.

35

PROF MAIER: Yes.

MR BABISTER: I was just going to follow up Holger's question on climate change. He asked most of it. Do you think there'd be much push back from the community if the LSIOs went up with a climate change scenario?

40

MS DEANS: Probably.

MR BABISTER: Yes. But you do - - -

45

MS DEANS: I - - -

MR BABISTER: - - - still think that's an important and good thing to do?

MS DEANS: I mean, I think this is where it's tricky, isn't it? I mean, we have to balance a whole lot of things when we – you know, when we plan for, well, all areas
5 and I guess if we know that there is the propensity for flooding in an area then, you know, we need to consider what is the appropriate overlay if – or if there – if it's appropriate to apply the overlay if it – if – you know, if it's justified. It's really tricky one. I mean, we – you know, I have strategic planning in my department and, you know, we upset people all the time when apply overlays. Some people love
10 them and some people don't but it – you know, unfortunately, if the justification is there, then – then it's warranted. I mean, it has to go through a process to demonstrate that but I – yes. I guess, you know, if the data supports it.

MR BABISTER: Okay. And just on your container story, that's a story I hear way
15 too often. You know, people can't build on a floodplain. They buy a container or put their stuff in a container because they're not allowed to have a shed. Container floods away, container takes out bridges or blocks a big culvert and you can force people to tie them down, but they float really well. Like, they're pretty much a boat and they ram things quite hard, so it's very hard to do something about that.

MR PAGONE: Anything more from you? I might just try to unpick a little bit more
20 your warnings issue, if I may, because as you were talking I was wondering whether there might be different – well, I'm sure there are different levels of warning. So, obviously, there's a warning to the public and then there's a warning to other entities
25 and bodies like councils and I was wondering whether you think that the two are adequately setup – I don't mean that the timing is right because the timing might not have been right for the reasons you've said – but – but are the things that make up the processes where say the councils are approached adequate? Should there be more involvement with council? Should doubts be more willingly expressed to
30 council members or to councils than they might be to the public? I mean, take, for example, this events where everyone went to bed at midnight thinking it won't be that bad. Should there have been a different signal to councils or like bodies that might have had a response role if things did go bad to say, "Look, we thinks it's okay but just letting you know about it"? Any thoughts?

MR RAZMOVSKI: Everything's good in hindsight. That would have been perfect
35 if we could have but similar to how you mentioned, everyone was of the understanding it might just go away, it won't happen, but definitely early in the morning it was happening and people were impacted significantly to the point not as
40 – we weren't as affected as other municipalities nearby lower down in the catchment. Our residents – we identified that area, so it would be easy for our – for us to actually have a warning system, you know, for those houses that would potentially be affected again. Obviously, they've lived through that experience but depending on if they sell the house or whatever, that should be associated with the property. So there
45 should be a warning system to notify the potential buyer or the owner moving forward sort of into the future that there is a warning system – flood warning, you are in a inundated area based on that flood which was the highest flood since – the

residents were telling me since '96 or something like that and they were there. They've been there for like 30, 40 years some of these residents. So they're familiar with it. And even those that knew something could happen weren't prepared and they – you know, for whatever reason they weren't as prepared as they should have been.

MR PAGONE: Yes.

MR RAZMOVSKI: But could we do better? Yes. We got a municipal emergency management planning committee that has involvement with all the first responders, all the services, so we do plan regularly throughout the year and one of the critical risks is flooding in our area and we do plan but just the surprise nature of the impact, the intensity and everything just happened, it was just too quick, sort of, to respond

MR PAGONE: Yes.

MR RAZMOVSKI: --- in a more effective manner.

MR PAGONE: Yes. You mentioned this app.

MR RAZMOVSKI: Yes.

MR PAGONE: Now, lots of people I know don't like the app.

MR RAZMOVSKI: Yes.

MR PAGONE: But you seem to think it's a good idea.

MR RAZMOVSKI: I seem to – I use it and that's ---

MR PAGONE: Yes. You use it because you speak English and you've got need to use it but do you think it's a sufficiently good idea for the community as a whole?

MR RAZMOVSKI: I think it's a tool. In comparison to having nothing else, I think there's something there that we can actually build upon. It could be modified to have different languages and things like that. There's always opportunities to do that. But it's – you're starting at a base. So – and it's – I think it's effective. I look at it all the time but you have to use something more frequently to get a better appreciation of it and that's what I do. Others wouldn't. But all you need is like – if they know in advance and you can look at your weather map. It tells you days in advance if it's going to be raining. So if we have a – you know, a month full of rain, you know that the ground's going to be saturated, you know there might be flooding occurring, so you continue to look at it. The next step would be to look at your emergency services map and if there's any notification, you know, flooding warning, flood warning, especially in our flood areas, they should be more knowledgeable about that

and be more prepared to deal with something should that occur. So I think there's a bit of ownership on the people who live in those areas - - -

MR PAGONE: Sure.

5 MR RAZMOVSKI: - - - upon themselves rather than relying on someone else, so you live in that area, you understand like Leanne mentioned, there's - when people ring up, "I'm going to buy this property," well, these are the conditions on that property, so you should have your own self-awareness of what the conditions you're
10 buying into.

MR PAGONE: Yes, yes. Anything else?

MS DEANS: It might be - and I'm sort of thinking back to the way that we've had
15 to respond to bushfires, you know, that one at one point I believed there was a text - you know, an SMS sent out to people in areas that are in danger and I wonder whether - I know that's a very expensive way to - - -

MR PAGONE: Well, I thought that was - - -

20 MS DEANS: - - - alert people.

MR PAGONE: I thought that was positively stopped, wasn't it? Wasn't - didn't they take that offline because it wasn't effective?

25 MS DEANS: Yes. I don't know. I recall it being used and I - at one point in time and I recall it's being used overseas as well.

MR PAGONE: Yes.

30 MS DEANS: But - yes. Whether it's being used now, I don't know. It's not - - -

MR BABISTER: It's actively used in Australia, but it's a little bit clunky - - -

35 MS DEANS: Yes.

MR BABISTER: - - - at the moment where, you know, you really want a targeted message - - -

40 MS DEANS: Yes.

MR BABISTER: - - - at a few small households when in fact you draw a big rectangle - - -

45 MS DEANS: Yes.

MR BABISTER: - - - and you alarm a lot of people who don't need to be alarmed. There's a new iteration coming around that hopefully will be better but - - -

MS DEANS: Yes.

5

MR BABISTER: - - - on many river systems often when there's a dam they'll just have a register where the dam operator has a list of text messages for - - -

MS DEANS: Yes.

10

MR BABISTER: - - - for all the farmers downstream - - -

MS DEANS: Yes.

15

MR BABISTER: - - - and they just send a text message, "We're releasing water today or we're doing this" - - -

MS DEANS: Yes.

20

MR BABISTER: - - - "or we're doing that," and that seems to work a little bit more effectively where people opt in but if you've only got a handful of residents, that's - - -

25

MS DEANS: I think - I mean, I would have thought something like that for more of your emergency sort of - you know, or to alert - to put people on alert and to get - but to have more of a registered approach. So I wouldn't be sending it out to everyone that's in the catchment. I think that would cause concern but I think that, you know, in this particular case I think there were very specific areas that were impacted and, you know, I guess, if - in a perfect world if it was possible to target areas, I reckon that would be a really interesting - - -

30

MR PAGONE: Yes.

MS DEANS: - - - tool.

35

MR BABISTER: One thing we find when we do post-event interviews with residents is we often ask them to walk through when did you get the warning and what did you do.

40

MS DEANS: Yes.

45

MR BABISTER: Often they'll do a validation process. So they might get a warning from you, they'll look at the bureau or they might get a warning from the bureau and they'll look at council's web page or something. That's a really important step to make it easy for them to validate because they don't want to change their life plan until they've worked out it's for them and I would encourage you to do

the same because anything you can do to make it easier for them to validate might mean they - - -

MS DEANS: Yes.

5

MR BABISTER: - - - gain an extra half an hour.

MS DEANS: Yes. And also making sure they don't think it's a scam because that's what most people do when they get an SMS these days.

10

MR BABISTER: I hadn't thought of that.

MR PAGONE: Well, thank you very much. Thank you for coming. Thank you for the submissions. We've found the submissions helpful. We're indebted to you for being here. It's important to us. I think it's important to the public and important also to your – members of your community. So a big thank you all around.

15

MS DEANS: Thank you very having us.

20

MR PAGONE: Thanks a lot.

MR RAZMOVSKI: Thank you. Thanks.

25

MATTER ADJOURNED at 1.47 pm UNTIL WEDNESDAY, 19 JULY 2023

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PROF H. MAIER, Panel Member

MR M. BABISTER, Panel Member

MR T. PEGGIE, Panel Member

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9.02 AM, WEDNESDAY, 19 JULY 2023

Continued from 18.7.23

DAY 3

MR PAGONE: Good morning. This is the third day of our public consultations. I am, as you know, the chair of the panel, and I have with me the other members of the panel. On my right Mark Babister, and next to him is Holger Maier. Then on my left is Tim Peggie.

5

PANEL ADMINISTRATOR: Can you turn the microphone on? Sorry.

MR PAGONE: I think this microphone is a bit more powerful than I had anticipated. I remember once giving a talk where said that you needed to hold the microphone so close that you're almost eating it, but this one, if I eat it, it will be ---

10

PANEL ADMINISTRATOR: You'll have to speak up. It's not working.

15

MR PAGONE: Not working.

PANEL ADMINISTRATOR: Well, it is - - -

MR PAGONE: All right. Okay.

20

PANEL ADMINISTRATOR: - - - but it's affecting the court

MR PAGONE: Anyway, if you can't hear me, that is to say, if I look as though I'm speaking and you can't hear the content, just say something and I'll try to speak up. I assume that we have James Reid.

25

MR J. REID: Yes.

MR PAGONE: Yes.

30

MR REID: Good morning.

MR PAGONE: And, welcome. Thank you for – and the lady, who - - -

35

MS N. GILL: Ms Gill.

MR PAGONE: Ms Gill. Thank you, Ms Gill. Yes. Thank you for coming. As you know, we've been appointed to do a technical review and, as you know, part of the terms of reference specifically refers to the famous wall at Flemington. So it's of assistance to us to have you here and to speak to you about it as best we can, and as best you can, and I understand that you've got a presentation you'd like to make, which is - - -

40

MR REID: Yes. Yes, we do.

45

MR PAGONE: - - - indeed, a divining offer. So that's great news. Thank you.

MR REID: All right. Thank you. We also submitted a statement, which I'll take as read and go into the presentation.

5 MR PAGONE: Well, I think we actually only got the statement very early this morning, or very, very late last night. I think.

MR REID: Okay.

10 MR PAGONE: So, taking it as read might be - - -

MR REID: Would you like me to read it?

MR PAGONE: You don't have to read every word, but, I mean, I saw it for the first time, I think, 10 minutes ago. And, so, I didn't get to digest very much of it.

15 MR REID: Okay. I can hit the high points if you like.

MR PAGONE: Great .

20 MR REID: My name's James Reid. I'm the executive general manager of operations at Victoria Racing Club. I have been in full-time employment at the VRC since February 2005. I have held a number of positions over that time, effectively moving from a entry level event services role through until the executive general manager role that I hold to date. As part of my role as the executive general manager of Flemington I report to the CEO, and I have a number of people that report through to me as my operations leadership team. Part of my remit is to manage the emergency management response and preparedness for the venue, and any incident that happens either on a race day or throughout the year.

30 On October 14 I was at the racecourse with my team. Given we were building for Melbourne Cup Carnival, generally speaking, through that time there's someone onsite as early as 6 o'clock in the morning, because we are building to a tight timeframe. We first heard of the potential flood warning early that morning, and as soon as I arrived, of course, I went down to the – what is known as the Elms and Riverbank enclosure, which is on the western side of the property adjacent to the Maribyrnong River we noticed that the water was quite high at that point in time, and we continued to monitor the water to a certain time when we stopped our business as usual works and shifted to a flood preparedness works and recovery should something happen.

40 I set up within our office a VRC response team in a room, which is referred to as an emergency coordination centre, where I sat and took the role of chief warden, and was supported by a deputy chief warden, two communications officers and a PR manager, and we sat there and managed the incident, with the help of our broader team across the venue, made up of our operations, tracks, trades and gardens team. I will skip through the detail of some of the stuff that I've touched on in the presentation. Primarily, once the flood had registered its peak height we shifted into

a recovery mode, and that is to make sure that we could deploy our event, being the Melbourne Cup Carnival, and what impact that might have on the floods, because our infrastructure was under water at that time.

- 5 We had reviewed the flood emergency response plan annually, as it does call for that, but given it hadn't been tested previously it's reviewed, but there was obviously no new information to update in that plan. We had the high-water mark surveyed through our surveyors, and we also have the wall surveyed each year to make sure that it's not moving in any great detail. We also considered the wall was effective
10 because there was no overtopping of the wall.

- I will now move into the presentation, please, Nadia. Thank you. Just the next slide, please. I touched on my role, and there are my current – or the previous roles I've held within the organisation, an organisational chart of the executive leadership team.
15 As I said, I report in to the CEO and we have a number of executive general managers that make up the leadership team. The next slide, please, Nadia. That is my racecourse operations leadership team. Primarily, those eight or so people formed part of the response team on the day.

- 20 The next slide, please, Nadia. For context – context, this is an aerial view of Flemington. Fish Parade Bridge on the northern side there. On the southern side is Lynch's Bridge, which joins Ballarat Road and Smithfield Road, and then on the right-hand side of that slide is the Smithfield Road entry point.

- 25 So, early on the morning of October 14 the Maribyrnong broke its banks. The flood river was managed by myself, as chief warden, with the assistance of the deputy chief warden, a PR manager and two communications officers. Other members of the operations, tracks, trades and gardens teams were on the ground providing regular updates. The VRC emergency coordination centre was receiving regular and
30 constant updates from the State Police Operations Centre, and we were providing feedback to that centre as a two-way stream of information. You can see here that some of the areas in question, the picture on the left is the water beginning the inundation of our property. The picture on the right is Saturday after the water had lowered.

- 35 Next slide, thanks, Nadia. So, during the incident the VRC emergency management coordination centre made sure that all staff and contractors were restricted from entering the areas that were being flooded, and the operations staff, under the direction of the chief warden, being myself, assisted critical infrastructure asset
40 owners access to the site when and where required. We have a number of high-pressure gas mains that run adjacent to the river and underneath the river, as well as some large gas meters. We have substations onsite and we also have, obviously, high voltage power lines.

- 45 The peak river height – sorry. The river height peaked at approximately quarter past 11 and was at 2.4 metres at Lynch's Bridge. We know that because we have a flood indicator measurement on one of the poles down there. Following the peak being

reached, the management shifted from an incident response to business recovery to those affected areas. Those two pictures are of Smithfield Road, one looking towards the entry point of the Lynch's Bridge area and the other looking back down towards the river at Smithfield Road.

5

The VRCs response included assessing and checking our critical infrastructure, being power – high and low voltage power – and gas once the water had subsided on the Saturday morning. Management had engineers inspect these structures by scaffolding and marquees to ensure that they were safe to occupy, and all the affected structures needed to be deep cleaned, sanitised or removed, and/or replaced with new stock. The engineers needed to come in to recertify all our temporary infrastructure that we had there, being marquees, scaffolding. We also had our on-staff arborist assess the trees. Given what had happened last year with a tree, we were obviously on a heightened alert for trees in the water sitting around those trees. And that is the end of the presentation.

10
15

MR PAGONE: Good. Thank you. Well, I'm sure that my other panel members will have some questions that they want to ask. I might, though, first of all, do two admin things. I understand the presentation's going to be made available physically, in some form or other.

20

MR REID: Yes, it's on a USB stick.

MR PAGONE: Yes. So, for the purpose of, you know, the recording and identification, we might call it VRC 1 so that we're able to, for the record, know what it is that we're referring to. And thank you for that.

25

MFI #VCR1 PRESENTATION BY MR REID OF VRC

30

MR PAGONE: The second thing is, thank you again for – or thank the VRC again for the ability that it gave us to look at the facilities; the wall. We were able to see that in May, and it was useful to be able to see physically onsite. Photos are great, but nothing is better than actually walking around and seeing it.

35

Can I, having sort of dealt with those two things by way of background, just ask about this: our problem, or the issue for us, are the two terms of references that specifically relate to the wall, and they're numbered 6 and 7 in the scope. If I can leave 7 for the moment, because it has some linguistic, or interpretational issues. But 6 is – what we're asked to do is to examine whether the wall contributed to the extent and duration of the flood event. Now, it may be that you can't assist us on any of that, and if you can't then it's useful to know that, because it may just be that the answer is that the VRC can't provide anything to us that will be of assistance to us. I don't say that critically. I say that just as a matter of fact. But I do need to ask you whether the VRC – maybe not you, but somebody – is able to assist us on our examination of whether the wall contributed either to the extent or to the duration.

40
45

MR REID: That's not something that I can answer, and I don't believe the club can answer.

MR PAGONE: Right. Well, that's useful to know. That may not be a good answer
5 but it may just be the best we're able to do. My colleagues may wish to explore that
in a moment. But can I go, then, to 7. There's a potential ambiguity in 7. So what
we've been asked to do is to review the efficacy of the – and it says “proposed
conditions of approval”, but I presume what was probably meant was the conditions
10 of approval that had been proposed and had been, in fact, approved. Anyway, that's
how I'm reading it. Because I don't think there are any other conditions that are
proposed going forward in the future, unless you know some that I haven't been told
about. No. So that's what it must mean.

So the efficacy – in other words, are the conditions of approval, and the mitigation
15 measures, are they doing what they're supposed to be doing? Again, the question to
the VRC is, and again your answer may be the VRC can't help. I'm not inviting that
answer. I'm just telling you that, on a Wednesday morning, I have braced myself for
that possibility. But that's what we've got to look at. And is it the case, are you able
20 to assist in our understanding of whether the proposed conditions and mitigation
measures relating to the wall, and its implementation, were efficacious?

MR REID: The - - -

MR PAGONE: That just means had effect.
25

MR REID: Yes. The proposed, I suppose, conditions and the implementation of the
wall whilst I was employed at the club, I suppose, during the implementation of the
wall - - -

30 MR PAGONE: Yes.

MR REID: - - - I wasn't involved in that part of the business at the time. So I can't
speak to that – those two specifically. I think for the effectiveness of the wall, from
what I saw on the 14th of October, and understanding what the wall was meant to do,
35 did it stop the flood overtopping the wall? It stopped the water. It never overtopped
the wall. It was well below the wall height.

MR PAGONE: Yes. But weren't some of those approved conditions and mitigation
measures also intended not to cause greater flooding in other parts of – that is to say,
40 not to the racecourse but to other parts of Melbourne on, say, the other side of the
river, or - - -

MR REID: That's something I can't speak to. I don't know.

45 MR PAGONE: You don't know?

MR REID: No.

MR PAGONE: Now, you can't, but is there anyone who is likely to know within the VRC?

MR REID: Not within the VRC, no.

MR PAGONE: No. All right. All right. Well, I'll pass it over to my colleagues, who may have some questions.

MR BABISTER: I've certainly got a couple of - - -

MR PAGONE: You want to try this, do you?

MR BABISTER: No, I'll just talk, then. The first one is just a quick one. One of your ongoing requirements is to get an annual survey, which you've talked about.

MR REID: Mmm.

MR BABISTER: Is there any other ongoing requirements you have?

MR REID: Oh, there's someone ongoing maintenance to the wall in terms of management of the stormwater internally at the venue.

MR BABISTER: Yes.

MR REID: And that's things like making sure that the drains aren't obstructed; management of the - it's - we refer to as the wetlands but it's the settling pond, making sure there's management around that in terms of vegetation and debris sitting in there. Specifically for the wall there's things around we can't underboard in particular areas. We must maintain certain levels of vegetation around it. There's simple things as, if there's graffiti on the wall we need to remove it with an approved - - -

MR BABISTER: Okay.

MR REID: - - - thing.

MR BABISTER: But you need to supply that annual survey to Melbourne Water, do you - - -

MR REID: Yes.

MR BABISTER: - - - as a part of your consent conditions? Yes.

MR REID: Yes.

MR BABISTER: And you've been doing that since it was built.

MR REID: Yes.

MR BABISTER: Okay. The other question I've got, which – well, there's two parts to it, really – is, in terms of the flood, can you give us some sort of measure of
5 magnitude or metric on the cost that you incurred, even with the wall, or man hours it cost you, or those sorts of - - -

MR REID: We certainly put a – there's a number of, obviously, insurance claims across that, given the infrastructure to some of our suppliers and contractors had
10 damage. So I can't obviously speak to that. In terms of man hours or person hours to get our event back to the level in ready for that, we haven't costed that up, no.

MR BABISTER: Okay. And I guess the follow-up question to that would be, can you outline the consequences if the wall wasn't in place?
15

MR REID: I could speculate to - - -

MR BABISTER: Yes, hypothetically.

MR REID: Hypothetically I could speculate to that. I think the water would have entered the course. I don't know how far it would have gone. I don't know what the damage would have been. So, purely speculation of what I saw on the day, if it wasn't there.
20

MR BABISTER: And would the Melbourne Cup have gone ahead, or do you think
25 - - -

MR REID: I can't speculate on that, because I don't know what the damage would have been.
30

MR BABISTER: Okay. Thank you.

PROF MAIER: That was my question as well around, you know, what the probably avoided damage might have been by the wall in terms of, you know, not necessarily
35 the financial but in terms of, you know, if you had to move horses or move, you know, infrastructure or all that sort of thing.

MR REID: And that was – in the response that was very much at play around the equine athletes that do use Flemington as a base. We had secured some standby
40 boxes from the showgrounds if we needed to move some horses up there. Moving horses in the event of an emergency, it's not something that we do regularly but we have got some learnings in this space. When the industry was under the effect of equine influenza there had been a plan in place to move horses very quickly. So we didn't need to move horses but we certainly had a plan under that, should we need to,
45 we could move them.

MR PAGONE: Tim.

MR PEGGIE: You just mentioned in your submission about the impact. So it was the stabling areas that were impacted?

5 MR REID: It's referred to – that western part of the property is referred to as the stripping sheds, for no other reason than it used to be an area where horses, particularly Bart Cummings would, after track work, go there and they'd strip the horses before working them up. So it's a term, it's a name. We don't use it for any horse areas.

10 MR PEGGIE: Right. And is utilised on race days, or is it - - -

MR REID: It's utilised over carnival for caterers, for cleaners, as a back of house space to service the front of house marquees.

15 MR PEGGIE: Right. So it's not actually utilised for the purposes of equine - - -

MR REID: No. There are some – there is a farrier and a rug maker down there.

20 MR PEGGIE: Yes. And, so, the implication is that flooding was minor in terms of the response required?

MR REID: For the equine industry, yes.

25 MR PEGGIE: Yes. Okay. And the front lawn flooded, obviously?

MR REID: No. The Elms Enclosure there is adjacent – the design in which the wall is done there's a large runoff. So I think the last page of the presentation, that is the Elms area. It's a – it doesn't have a wall that sits there. That was about 170 metres away from the bank of the river.

30

MR PEGGIE: Yes.

MR REID: And that was about 50 – 40 or 50 centimetres under water at that point in time.

35

MR PEGGIE: Okay. And how long did it take for that to drain, or to - - -

40 MR REID: The water – by Saturday morning, mid-Saturday morning on the 15th the water had gone, but obviously the effect of water sitting on the grass was still significant for the remainder of that week leading into carnival.

MR PEGGIE: And when was the next race day to be held?

45 MR REID: It was Derby Day.

MR PEGGIE: Right. So that was in three weeks?

MR REID: No. It was two weeks.

MR PEGGIE: Two weeks.

5 MR REID: Yes. 10 days.

MR PEGGIE: Right. And that went ahead without any impacts as a result of - - -

10 MR REID: The race day got away with no impact. Some of the corporate marquees, in terms of containers and kitchens, obviously had to be completely recertified and re-cleaned. There was some, obviously, stock loss. We had to change over to some temporary power, and etcetera. But, for all intents and purposes, if you were a guest coming on Derby Day, if you hadn't been reading the media, you probably had no idea that there had been a flood.

15 MR PEGGIE: And were there any implications or any other impacts that were unusual, or that weren't forecast in terms of the plans that you had in place?

20 MR REID: Not that I can recall, no.

MR PEGGIE: No more questions.

25 MR PAGONE: Thanks. Can I just go back, now, to something that I have asked about before, and that is, has there been an incident report, or was there an incident report at the time?

30 MR REID: There hasn't been an incident report. There was a – the emergency coordination log of events that was transcribed in the room when we were making our key decisions. But there hasn't been an incident report based off the flood.

MR PAGONE: And did the VRC commission any report or evaluation about whether the wall did what it was supposed to do, and whether the mitigation effects did mitigate?

35 MR REID: No, we have not.

MR PAGONE: Right. All right.

40 MR BABISTER: So there was no process to capture the learnings from this event?

45 MR REID: We've caught the learnings from the event, but just given the timing of the response, and getting up for Derby Day, having formalised a incident debrief, which we normally do after all of our incidents, whether they be a false alarm or a – a false fire alarm or a real incident, would normally take place. Given the timing that just wasn't done – one done.

MR PAGONE: All right. Well, if there is anything else that you think would be of assistance to us, particularly in items 6 and 7, and then not to restrict you to other things, obviously somebody is interested in our views about whether we should blame the wall for something, and whether we should say that what was proposed
5 wasn't good enough, or something more should have been proposed. So they are obviously matters that will, if we say them, affect you – and when I say "you", I don't mean you individually, but although no doubt it will have an impact upon you individually in a broad sense, but it will affect, potentially, the VRC. So if there's
10 anything – any other learning that you'd like to give us, or assistance about what you think we should say about these matters, we would certainly gratefully receive them.

That said, thank you for your attendance. Thank you for the submissions. And thank you for the additional presentation.

15 MR REID: Thank you.

MR PAGONE: All right. Well, we will now – that's the end of today's session, and we'll resume the next one. Thank you very much.

20 MR REID: Thank you.

MATTER ADJOURNED at 9.27 am UNTIL THURSDAY, 20 JULY 2023

Index of Witness Events

Index of Exhibits and MFIs

MFI #VCR1 PRESENTATION BY MR REID OF VRC

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THE HONOURABLE G. PAGONE AM KC, Chair

PROF H. MAIER, Panel Member

MR M. BABISTER, Panel Member

MR T. PEGGIE, Panel Member

PUBLIC CONSULTATION SESSIONS

**MEDWAY GOLD CLUB
57 OMAR STREET
MAIDSTONE, VICTORIA**

9.07 AM, THURSDAY, 20 JULY 2023

Continued from 19.7.23

DAY 4

MR PAGONE: Well, good morning to those who are in attendance today. This is the fourth day of our public consultations, and we're very pleased to have the opportunity today to hear from this morning the City of Melbourne. I understand that Mr James Reid is here. Yes?

5

MR S. RAJAPAKSE: I'm sorry, we have three of us.

MR B. RAJAPAKSE: Three of us here. Bandara, Sanjeewa and Cintia.

10 MR PAGONE: I'm terribly sorry. I'm looking at the wrong – that's my mistake. Right. My great apologies. I looked at the wrong bit on the page. My apologies to you all. Anyway, I got the city right, and we are grateful for that. We're grateful for the submissions that you put in also, and it's very important that we get the kind of
15 feedback that we have been getting from you, because you're, as it were, on the ground and has seen what has happened and your residents have spoken to you, and so on. So I understand that you have got a presentation that you would like to put before my colleagues and I will ask you some questions?

MR S. RAJAPAKSE: Yes, we have a presentation.

20

MR B. RAJAPAKSE: Yes.

MR S. RAJAPAKSE: We

25 MR B. RAJAPAKSE: I suppose you can stop me

MR PAGONE: Sure.

MR B. RAJAPAKSE: Whatever works.

30

MR PAGONE: Sure. All right. Well, over to you then. Thank you.

MR B. RAJAPAKSE: Good morning, everyone. Thank you very much for the opportunity for City of Melbourne to do this presentation. We have three of us here
35 today from City of Melbourne. My name is Bandara Rajapakse. I'm a manager infrastructure. My role at City of Melbourne is to basically look after the roads, and any road assets. And Sanjeewa is my drainage engineer, and Cintia is Water Sensitive City Lead. So we will do the presentation, the three of us. I will start and then do the introduction, and then Sajeewa and Cintia will complete the presentation.

40

So we made the submission, and so we prepared this presentation based on the submission and some other information, including some photos. So there are sort of three parts to our presentation, you know, City of Melbourne interest, flood event and impacts, and

45 review, because part of the Maribyrnong River sits within City of Melbourne, with the City of Melbourne.

And we would like to – you know, I mean, City of Melbourne we have experienced flooding over many years, especially that part of municipality. So we have properties there, and we have ratepayers there, and also City of Melbourne have assets, like the roads, footpaths, drains, and the water is, you know – every time there is rain, big rain, there is always some issue with the flooding and people not being able to get out. Over the years the area has been developed so we would like to know what we can do with Melbourne Water to improve the area, you know, how to prevent flooding and what actions we can take for flood mitigation.

10 MR PAGONE: The photograph in the slide before, where was that photograph of?

MR B. RAJAPAKSE: Before? This is Hobsons Road, right.

MR S. RAJAPAKSE: Hobsons Road.

15 MR B. RAJAPAKSE: This is Hobsons Road near the river. End of Hobsons Road.

MR S. RAJAPAKSE: There are some photographs at the later presentation, so I will explain those in detail.

20 MR PAGONE: All right.

MS C. DOTTO: Which day was this Sanjeewa?

25 MR S. RAJAPAKSE: 14 October.

MR B. RAJAPAKSE: So this was taken by Sanjeewa.

MR S. RAJAPAKSE: Yes.

30 MR B. RAJAPAKSE: Yes, Sanjeewa, because he went out during the flooding and took some photos, so he will talk to the photos a bit later.

MR PAGONE: Right. Thank you.

35 MR B. RAJAPAKSE: I will hand over to Sanjeewa for the rest of the presentation, or part of the presentation, because he was the one who went out and took the photos. He is familiar with all flooding, flood hotspots and the issues that exist, dealing with the flooding.

40 MR PAGONE: So that's obviously from the – one bank of the river, looking across the river.

MR B. RAJAPAKSE: Yes. Yes.

45 MR PAGONE: And what's the street or road on the other side?

MR S. RAJAPAKSE: This photo is Riverside Park.

MR B. RAJAPAKSE: Riverside Park.

5 MR PAGONE: Riverside Park. Okay.

MR S. RAJAPAKSE: Yes. In the next few slides I will show you detail - - -

MR B. RAJAPAKSE: Where Riverside Park is.

10

MR S. RAJAPAKSE: - - - important detail of that. Yes.

MR PAGONE: Okay. Okay.

15 MR B. RAJAPAKSE: Because the Riverside Park is actually an elevated area, so that's - that's a retarding basin, whereas next to the Riverside Park is Hobsons Road. That's the road that gets flooded. And recently the developer built a bund there to stop the water overtopping the - you know, that area. But that provides some protection to the development, and also they can cross the road at a higher point. But
20 still either side gets flooded.

MR PAGONE: Yes.

MR B. RAJAPAKSE: Yes.

25

MR S. RAJAPAKSE: Hello everyone. I am Sanjeewa, drainage engineer. The next few slides I will talk about the flood extent, flood impact and how our City of Melbourne drainage infrastructure behaved in that flood event. So this on your right-hand side you can see the flooded areas. So this is starting from Smithfield Road. It
30 was flooded from somewhere here, and then further down in Riverside Park. I will show you some photos in the next slide, the Riverside Park road flooded. And the photo you were showed before, it's somewhere around here in - just before the road hump in Hobsons Road. This area, the road is to - as a flood mitigation option. So this part was not flooded. Only a small section was not flooded. The river water
35 didn't in this section.

But then Hobsons Road was flooded up to Kensington Road. And from Kensington Road from Mercantile Parade further down, it was flooded up to the railway underpass. And here is the JJ Holland Park. JJ Holland Park was flooded. And then
40 going back to Childers Street, you know, the newly completed Metro Tunnel stage, and half of it is flooded. Not the station. Childers Street was flooded up to somewhere here. And then this whole area was flooded, including this Dynon Road from here to the river, including into both of these railway underpass.

45 MR PAGONE: Will we be able to have a copy of these slides at the end?

MR S. RAJAPAKSE: Yes, we should be able to give copy. Yes.

MR PAGONE: Yes. For the purpose of the transcript, we might just call them CM1, so that we will be able to cross-reference when we come back to writing the report.

5 MR S. RAJAPAKSE: Yes. Yes. No worries. Yes.

MR PAGONE: Thank you.

10 MR S. RAJAPAKSE: So these are, like, the same with some photos added to it. So this is -- this is at Riverside Park. It's the earlier photo that we showed you. And this is just before the road hump and within the river. It's somewhere here. And this photo shows the other side of Hobsons Road -- other side of the rail road hump. And then this one is from actually JJ Holland Park, and this is Childers Street. You can see in this photo this is the railway underpass. This whole area was flooded. And
15 this -- and the last photo is from actually Dynon Road from somewhere here. So you can see the railway underpass. It was flooded as well.

MR PAGONE: And do you know what time those photos were taken? It looks very peaceful.

20 MR S. RAJAPAKSE: Yes, the photos were taken one day after the flood event. It was then only -- I went to site and went around all the areas and took some photos. I just wanted to see the extent of the flooding.

25 MR PAGONE: So it was the day after or two days after?

MR S. RAJAPAKSE: No, one day after.

MR PAGONE: So it was the 14th?

30 MR S. RAJAPAKSE: 14th I think, yes.

MR PAGONE: Yes.

35 MR S. RAJAPAKSE: And flood damage, five businesses had light to medium impact. And one of the basement was flooded in Hobsons Road, and approximately 80 vehicles were damaged. You must have seen from the previous photos some of the vehicles in the floodwater. And then after that, the City of Melbourne went and did some cleaning process, cleaning the footpaths, debris -- cleaning the debris on
40 roads, footpaths and public spaces, and including the council underground drains. And council spent nearly 105,000 for the clean-up process.

MR PAGONE: And just going back for a moment, it says that 80 vehicles were damaged. Was that just because of water getting into the vehicle, or vehicles being
45 pushed against each other?

MR S. RAJAPAKSE: Not – we don't have much detail but, you know, maybe they were parked in the flooded areas, but we can come back to you if you want more details.

5 MR BABISTER: What was the depth in the basement? Was it quite high?

MR S. RAJAPAKSE: I don't know. We don't have that information, sorry.

10 MR BABISTER: Often what happens when a basement floods is the cars float, smash up against the roof of the basement, and then the water goes down and then the cars are completely written off because the top is smashed in and the car is inundated because it has been in water for a long period of time. The only positive about flooding a car is you tend to get an insurance payout without any questions.

15 MR B. RAJAPAKSE: So, Sanjeewa, if you go back to the photo - - -

MR BABISTER: 80 cars is a lot.

20 MR B. RAJAPAKSE: - - - I think these cars were mainly parked on the road. Right?

MR S. RAJAPAKSE: Yes. I think most of the cars were parked on the road.

25 MR B. RAJAPAKSE: So they were basically parked and they went under water. MR BABISTER: On the road. Okay.

MR B. RAJAPAKSE: Yes. Yes.

30 MR PAGONE: Well – well, how did you capture that information of 80 cars? Was it people who told you? Because there might have been more than 80 cars.

35 MR S. RAJAPAKSE: That's – I don't know. So that may be council helped the businesses and property, or the impacted people. So they must have got some information from the customer inquiries they received, or something like that.

MR PAGONE: Could you later let us know how you did capture that information. It would be useful for us to know - - -

40 MR S. RAJAPAKSE: Yes. Yes.

MR PAGONE: - - - what systems you put in place to work out what the extent of the damage in your area was.

45 MR S. RAJAPAKSE: Yes. Definitely. Yes.

MR PAGONE: Thank you.

MR S. RAJAPAKSE: This photo is actually from Smithfield Road, so you can see how much debris is in Smithfield Road and Road, around most of the river. And then I will talk about a few issues for the panel's consideration in this event. So there are a few flood mitigation in this area. We will just talk about how this

5 infrastructure behaved in this flooding event. So there is a levy in between the river and the Riverside Park, and the river water did not in that flooding incident. And there is an across one of the drainage outfalls which is going to Riverside Park somewhere here.

10 And that and stopped water coming from the river into the inland. And because of that because of the local catchment there are some areas flooded next to the Riverside Park and adjacent areas, and all the other areas were flooded because of the – you know, the river water is, like, high. And there is a council pump station in Kensington area. That pump station also was flooded because it's not actually

15 designed for the high storm events. It's only designed for the low – low flows only. So I will hand over to Cintia now to talk about the rest of the presentation. Thank you.

MS DOTTO: Thank you, panel. There is a lot of noise. My English is not clear at times, and I can rephrase. Upon the review of what the damage was, and how our infrastructure worked through the flood event, we collated a few topics on the issues and information that we believe the panel should consider, and they relate to a couple of – a few different things.

20

25 One is really around communication around flooding. We have done some community engagement around the area, and it was clear that the community really wants more transparent flood risk information. So there was a bit of a lack of notification and emergency warnings for the area. And in particular we believe there is a need to be a stronger focus on vulnerable groups that cannot be achieved via

30 social media or this kind of immediate and fast warnings. And also in terms of language, it's important that we approach for other languages in informing the risk – the imminent risk. So that's a very important point that we would like the panel to consider, and as Bandara said in the beginning, we are obviously willing to work with the relevant authorities on these improvements.

35 MR PAGONE: And does the City of Melbourne have a view about what would be the best method for communication?

MS DOTTO: We do actually, and I would prefer to come back to you with a formal answer later, but what I can disclose is that we have neighbourhood portals where we have – which is an online space where people from that particular neighbourhood can communicate with us. And that is one way. But what we feel through that way is that we do not achieve the vulnerable communities. And our suggestion for that is really we need to have people on the ground. And the responsibility around that is

40 something that we need to discuss as well. But we need to have people on the ground that can achieve vulnerable people, so I think we need a bit of workforce in terms of personal.

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MR BABISTER: I was just going to follow up from that. Clearly if you enable better communication during the event, a significant number of those cars probably wouldn't have been damaged if people were aware. It would have been a fair hike back, I think, for people to move their cars but we could have really significantly
5 reduced the damages and the consequences on the community. Would that be correct?

MS DOTTO: Yes, absolutely. That's why it's really important we thought that. And when the community mentions that they want a more transparent flood risk
10 information is exactly that. We – there is a wish of having a portal or a central information where the information is easily available and not static maps from previous times or things like that. Something friendly.

MR PAGONE: You may come back to this later, and so I don't want to anticipate if
15 it's something you want to do later on. But the issues about communication are issues about when, what and who. And at midnight on the day of the event the expectation at midnight was that the event was not going to be as severe as two hours later it became. And one of the people who spoke to us recently said, well, there should have been an indication that it could have gotten worse, and then – but there's
20 a balance there, isn't there, because you can't be sure. The best information is ambiguous, and people are going to sleep. What are your thoughts about – and some people – if you explain it in detail with all of the possibilities, that will be difficulty to explain across the whole of the community in all of the languages that need to have it explained in. Does – have you got a solution for that?

25 MS DOTTO: I personally have, but I will not – but I am here representing the City of Melbourne.

MR PAGONE: Sure.
30

MS DOTTO: There are many cities that go through flooding way more frequently than we do, river in floods around the world, and they do have emergency plans in place that can adapt the community to be prepared without doing the alarming. So I think we could learn from other places that are doing well.
35

MR PAGONE: Well, I'm very interested to hear that. Have you got one overseas model that is a good one?

MS DOTTO: I can come back to you on that one as well.
40

MR PAGONE: Okay.

MS DOTTO: But there are many cities that have adapted including – Copenhagen is a great example. They had a major flood - - -
45

MR PAGONE: Yes.

MS DOTTO: - - - in 2011, if I'm not mistaken, and things are happening different. But that is a suite of management interventions that lead to that. If you don't mind, I will just go through this because I might come back on what type of information we might need as well.

5

MR PAGONE: Okay.

MS DOTTO: Is that okay?

10 MR PAGONE: Yes.

MS DOTTO: All right. Another thing that might relate to what you just said is, really, the approach to flood modelling and predictions. Flood information is currently very difficult to navigate for the community. It's highly technical and perhaps there is a need for making that a little bit more tangible. Fit for purpose information is really important, including up to date flood modelling and mapping. We are all aware that the flood mapping for the river area of that river is quite old and outdated. Perhaps having more up to date information would be helpful.

15

20 Another management way that would be really good is making sure that planning scheme amendments need to be streamlined, using the best available information for future conditions, including sea level rise and climate change. So all these three things would be part of a – could be part of a suite of best management for future events.

25

In terms of strategic planning, we would like the panel to consider that flood mitigation management needs to be considered prior to development approvals to avoid the same thing in the future, and those should include up to date data. And we would welcome Melbourne Water's and active involvement in the planning and delivery of flood management projects. As a local council we count on them for leadership.

30

Another thing that we would like the panel to consider is the need for good design for the flood-affected areas. Urban design considerations with flood risk mitigation need to come into place. Setting up building floor levels above the flood level and provide guidance for buildings in flood-affected areas. That, combined with design with flood protection. So there is a few issues that we would like the panel to consider, and we are happy to expand on those if you like, and our submission also expand on those a little bit.

35

40 So what we currently have in place to manage flood is council has – City of Melbourne has allocated for the delivery of drainage maintenance, operates renewal through a 10 year asset management – through 10 year asset management plans, as well as, as required. Drainage data collection and condition assessments to have more accurate data. We have been working for the last past year collating best data to understand how our systems are working. That includes CCTV of all days. We undertake pump station maintenance and upgrades, construction of new pumps

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and for flood management considering future climate change in the areas for the rainfall in-flows. And we actively maintain and construct new stormwater harvesting systems that help us to keep stormwater reused instead of reaching the streets.

5

In terms of planning controls and design requirements, we have introduced flood overlays. Major catchments are completed, and flood modelling for the remaining catchments are going to be undertaken through the next two years, starting this financial year. We also require on-site retention and design requirements of private development to ensure that they're impact – their development does not impact on the public And all major development projects need to confirm that they do not adversely impact on the area and adjacent properties and streets. So all these are currently in place. We also have developed, in conjunction with Melbourne Water and the City of Port Phillip, a document that's called Good Design Guide for Buildings in Flood-Affected Areas which really provides good guidance on how to achieve good design flood protected.

Some of the challenges that we have in managing flood is really a little bit on governance and leadership, and that might come to what we were speaking before. It really needs a collective work between the flood authority, councils and perhaps the emergency system to work together, to come with management and emergency plans in place to avoid what happened without doing – without alarming the community. It's really important to say that we – as a council, we were partners in the delivery – we collaborated in the delivery of the flood strategy for Port Phillip and Westernport that is currently endorsed for '21 to the next 10 years, I believe. And we believe that all the actions – objectives and actions in that flood strategy will highly address a lot of the concerns that we raised in our submission. So I believe – we believe that the implementation of the strategy is something that really needs attention and perhaps needs to be accelerated.

30

So the guidance and active involvement is needed in the planning and the delivery of this flood strategy. The flood strategy proposes to work with partners to solve, or at least improve governance around flood management, which would be very helpful. Other things that are in part of the plan that we think should be accelerated, mainly for areas where are in high risk of flooding, is identifying flood mitigation projects and prioritising projects where they are needed. Undertake municipal-wide flood modelling, preparation of flood maps, and developing flood mitigation and management strategies. Local councils need assistance and leadership from Melbourne Water on this one. And also in developing funding and delivery strategies for adapting and mitigating flood across the hotspots and risk areas.

40

We always flag the need of updated modelling. We currently work with outdated modelling of the main rivers in the city. This is under Melbourne Water responsibility. We update our stormwater flood models and have been doing that to account for climate change impacts. So there is a big need of updated models, and we really would like you to consider the need to update modelling with the latest technology once in five years, so they don't become obsolete. These are the key

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things we would like to ask you to consider, and perhaps advise on how authorities can work together to come up with and resolve these issues. The next slide I am going to pass to Bandara which is a specific project that – he is in the area, and it is highly related to the flood event. Thank you.

5

MR PAGONE: Thank you.

10 MR B. RAJAPAKSE: We have included this slide to show what is happening in that area in Hobsons Road. As you can see, right there, that's where the bund that we mentioned was built about three or four years ago. That was built by the developer of that property and that was a requirement from Melbourne Water. The developer had to set their flow levels above one in 100 years, you know, water level, and then that bund wall was built at the same level. So the idea was that the bund was to basically – when there is a flooding, basically both sides of that bund is going to get flooded, and then people can actually access the higher ground through that elevated section of the road.

20 When this was first presented to the council we actually objected to it because we thought, okay, so there is a bund wall, so what happens when this property Why are you going to build one here; what about here? So all these developments are going to be – not happen in the same year in – over the years. So we thought, okay, we're going to have bunts on the road here, a number a bunts, and so that's not a proper plan, you know. So we saw it as some sort of an ad hoc, you know, reactive measure. You want though that would protect that particular development. So we asked Melbourne Water that what is the plan for the area. So, you know, that's one of the things we mentioned before. Build the flood modelling, having accurate flood maps, and having a plan for the whole area.

30 So the reason there, I suppose, you know, Melbourne Water came up with this plan because this area is getting developed. So this area is getting developed. To stop I suppose flooding that area, so they thought, okay, you're not going to have bunds everywhere, so we could have a bund here, bund there, raise the road, and then a levy bank along the river to stop water overflowing the property and then there's that – this area is going to be elevated. And then the drain and a pump station to pump the water out from here.

40 Even this with this – the reason I put it there, for me this is still not complete because this area still gets flooded from the local drains because when the river level is up, this wouldn't work. They wouldn't drain under gravity. So water will sit here until the river level goes down. So if you want to have a proper plan, then you need to have a pump station or pump stations along this side as well. So what I was trying to say is that, you know, what we need from Melbourne Water is to have plans that can be implemented over the years rather than – you know, this is a plan, this might change.

45

MR PAGONE: 71 – the property 71 there. Is that where the basement flooded?

MR B. RAJAPAKSE: Sanjeewa, is that where the small basement flooded?

MR S. RAJAPAKSE: This is 80 or something.

5 MR B. RAJAPAKSE: 80?

MR S. RAJAPAKSE: It was there in that slide, 80.

10 MR B. RAJAPAKSE: I can't see 80 here. Is it on the other side? No. Because this side is all elevated. is elevated, so that area doesn't get flooded. So when this area was this was elevated, but this Hobsons Road and this area is still low, so that area – but can you find - - -

15 MR S. RAJAPAKSE: No. It's not there. We can come back to it.

MR B. RAJAPAKSE: So the reason I put it because currently Melbourne Water has a DSS, a development services scheme. They are working with the developer to – yes.

20 MR PEGGIE: You showed a photo before from Hobsons Road though, that showed inundation. Where is that on this map?

MR B. RAJAPAKSE: It's somewhere here.

25 MR S. RAJAPAKSE: Yes, somewhere there.

MR B. RAJAPAKSE: Somewhere.

MR PEGGIE: It is there. Yes.

30 MR S. RAJAPAKSE: Yes, somewhere, yes.

MR B. RAJAPAKSE: And also here as well. So the bund doesn't get

35 MR S. RAJAPAKSE: Yes.

MR B. RAJAPAKSE: So the cars parked – if you have any cars – cars parked here, they will get flooded if you don't remove the so here. And also the – the car entrance – car park entrance get flooded so the cars – you can't get out of the

40 building, only where this – through the bund here. So this is the end of our presentation, right?

MR S. RAJAPAKSE: Yes.

45 MS DOTTO: Yes.

MR B. RAJAPAKSE: And if you have any questions?

MR PEGGIE: So while the – we had a submission from one of your businessowners on Dynon Road. Have you had the opportunity to read that submission and make a commentary on that submission? This is the [REDACTED] submission.

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MS DOTTO: I read most of them, but I won't remember

MR PAGONE: The specific submission that Mr Peggie is referring to is a company called [REDACTED], and it was and still is a computer-run business. And what had happened in that case was that the flood levels were going up, water levels were going up. And in addition to the impact of the water levels going up, two semitrailers in different times drove through the road and that caused an impact – an additional impact which caused the – I think some of the glass windows to break. That's the one he is referring to. And the question is have you got anything that you can say about that submission that might help us?

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MR B. RAJAPAKSE: We haven't - - -

MS DOTTO: Yes, I am aware of that one in our emergency and safe team, which is led by [REDACTED]. They were the ones who worked with that property, but I – I can't remember at the moment - - -

20

MR PAGONE: Sure.

MS DOTTO: - - - about the submission. But we can put that in a document for you.

25

MR PAGONE: One of the – one of the issues that that raised was what to do with traffic, and we asked that question of somebody this week, and we were told, understandably and sensibly, well, there's a judgment call to be made: do you allow the traffic to go through, not to go through. There is a question about how fast the semitrailer was going. I am not an expert on the impact of semitrailers at slow speeds or high speeds, but I know from just sitting in a bathtub from time to time that if you move the water even gently with your hand there will be an effect. So I suppose one question should have been, well, when you have got an event like that, should all traffic just stop and there be no traffic allowed to move at all.

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MR PEGGIE: Do you mind if I show them that photo?

MR PAGONE: Sure.

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MR PEGGIE: That's the photo that [REDACTED] provided, with the wake of the – yes.

MR BABISTER: The bow wave the truck blew the windows out in a sort of warehouse shop facility, and probably increased the damages by millions. And you could conclude reasonably that it was not really necessary. Those trucks could have waited or gone slower so they didn't create such a bow wave.

45

MR B. RAJAPAKSE: Is this Hobsons Road or - - -

MR PEGGIE: Dynon Road. Dynon Road and Kensington Road.

5 MR BABISTER: Corner and Kensington and Dynon.

MR B. RAJAPAKSE: Yes. Okay.

10 MR PEGGIE: A further criticism in that submission is the pump station and the failure of the pump station to operate, even post-event, in terms of - - -

MR B. RAJAPAKSE: Is that the one in Kensington Road you're talking - - -

MR PEGGIE: Correct.

15 MR B. RAJAPAKSE: Yes. Yes. The Kensington Road – I will show you where it's somewhere here that we have a pump station. Yes, somewhere here. This area is actually lower than the river, so the water doesn't drain into the river under gravity. So you need the pump station all the time. So even there's any rain that
20 pump station, the smaller one – very old one. The purpose of that pump station is basically when there is any low – low-intensity rain, just to pump the water from that area into the river. But it's not there to prevent any – any flood. That's why in the flood, the pump station got flooded because it's too much water to handle. It's not – it doesn't have the capacity. So currently – not here, but we have Stubbs Street
25 near the Moonee Ponds Creek. So we have six pump stations there. So we're in the process actively of upgrading all the pump stations to one in 20 year capacity. Currently they are one in five, so we are basically – we are already working on two pump stations right now. The costs – spending about 11/12 million dollars to upgrade the two. So – and then it is to be a continuous First we will upgrade the
30 pump stations and the drainage network to have a one in 20 year capacity.

MR PEGGIE: Is there any current commitment to the upgrading of that station?

35 MR B. RAJAPAKSE: Not – not currently. We have a lot of pump stations, so it's just basically we are looking at – have to prioritise the work because Hobsons Road - - -

MR PEGGIE: Of course.

40 MR BABISTER: - - - there a number of properties which get flooded all the time. So we are basically putting our money into Hobsons Road because – and – whereas here normal flooding there are no property damage, whereas Hobsons Road is a different story. So we're basically spending money there, and then we gradually – and also as part of the Arden-Macaulay Structure Plan or the Urban Renewal Area
45 Development. So there are a number of drainage improvements identified by – between the council and Melbourne Water, including, you know, drains, pump

stations, levy banks. So we are basically in the process of implementing that as part of the Arden-Macaulay Structure Plan developments.

5 MS DOTTO: Yes. Can I add to that, that really flags the lessons we can take from this flood event in terms of authorities working together. We – as Bandara's team can work into updating the plans, we need to work together with Melbourne Water to update the drainage that drains to that pump and connections so it is a combined effort to upgrade the drainage infrastructure in a way that it will work. That's not just for this area. We are talking about general flood areas.

10 MR B. RAJAPAKSE: Basically to having a municipal-wide planned mitigation plan that addresses flooding in the area. So it's not that common. It's not an easy thing. So what they have to – for us – our understanding is firstly do the flood modelling. Council has spent – last six years we have spent over two to three million
15 dollars collecting the data. So we want to know where what size, what capacity. And then with that data we want to do a proper flood modelling, and then the flood maps. Flood modelling, flood maps, and then we can come up with a plan like that, to say, you know, if you're going to this area, this is the plan.

20 MS DOTTO: Yes. Yet we need to remember, Bandara, that we can do that for the stormwater.

MR B. RAJAPAKSE: Yes.

25 MS DOTTO: If the river flood model is 20 years old, we won't be able to keep our – we can do the stormwater for the catchments, but we won't be able to understand what will be the future impact or what is really the current impact of the river flooding on the catchments. Right. There was a lot of improvement in flood modelling techniques and data in the last three or four years.

30 MR PAGONE: How much of the catchment area is within the City of Melbourne zone?

35 MS DOTTO: We can show you what that means. So the Maribyrnong catchment, as we know, goes up all the way. We are the last one. And if you look at that, the blue area at the moment – the blue shade, that is the flood from the Maribyrnong. Is that it Sanjeewa?

40 MR S. RAJAPAKSE: Yes, yes.

MS DOTTO: The river in flood, that was modelled a long time ago. So what does that mean for us, is that with our municipality through the Maribyrnong, that is a lot of areas just on the side of – on the side of the Maribyrnong that is impacted by that river in flood. Not mentioning that we are at the bottom of the catchment. So even if
45 we are not within the broader catchment, interventions or management or the lack of management of flood upstream will impact our catchment downstream.

MR PAGONE: We understand that. I'm just wondering physically are we talking about 20 hectares, 100 hectares?

MS DOTTO: I wouldn't know. I can't tell you that.

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MR S. RAJAPAKSE: It's more than 20 hectares but we don't know exactly. We exactly what the amount is. We don't have the - - -

MS DOTTO: Our municipality goes across the Maribyrnong catchment, the
10 Moonee Ponds Creek catchment, the Yarra catchment, so it's very difficult to know.

MR PAGONE: Yes.

MR PEGGIE: Can I ask a question?

15

MR PAGONE: Sure.

MR PEGGIE: So in the [REDACTED] submission, that's submission 23, there is criticism of the traffic management. The question I have for you is who was
20 managing the traffic?

MR B. RAJAPAKSE: If it is Dynon Road, Dynon Road is It's not council. It's the DTP, Development Transport Plan. But normal council roads, we have our contractor, you know, which normally get called out – emergency callouts. They
25 normally go and close the road. So, like, in Stubbs Street, as soon as there is a flooding, they would go out and close the road and stop any vehicles going through. That's depending on how many calls they get and how many places they can go. So if the flooding is municipal-wide, there can be a delay. They have a team. Depending on whether daytime, night-time, or weekend, how many people that can
30 go out, and how long it would take. But that is the current plan. Basically our contractor will get the callout. If anyone is ringing the council hotline, they're directed to our contractor, and then they organise for team to go out and close the road. So – but in the case of Dynon Road, Dynon Road is actually not – it is an RTA road. But if council get called we might go as well. So sometimes we get a call, we
35 don't say it's not us. But depending who get the call first. Yes.

MR PAGONE: Are the lines of authority clear to the people who need to know? In other words, there are different people who are able to have an impact and control traffic. This morning, for example, I was getting on a tram and a section of Bourke
40 Street was sealed off because there was some construction work going on, and so somebody who was not Yarra Trams and didn't look like City of Melbourne, but somebody said I can't go that way, "You've got to go the other way." So there are different people who might have an impact on the flow of movement of people or traffic at any one point of time. In the case of a flood, you will have somebody who
45 is normally in charge of traffic flow in a road. Some roads are controlled by some people rather than other people or other authorities. Then the SES gets involved. Is there a risk for mixed messages and/or confusion? And if so, what is that risk?

MR B. RAJAPAKSE: I will go back to a previous question about the construction works, so that's much easier in a way because normally constructions works are planned unless there is an emergency. So anyone who wants to close a road or part of the road or blocking the footpath, they have to get approval from council. They will come to us and then plan. You would normally approve, and, you know, we normally check our records to see, you know, if there any – any other approvals in the area and then we so we know exactly who is occupying and what part of the road and when.

But with emergency I suppose it's depending on the type of emergency. If it is emergency that – you know, that might – the police might be called first. And when they go there, if they think they need assistance from council, then they call council and we will send our traffic management. But if it is a flooding or something, that may be – the call might go to our contractor first because – it is an emergency but what is required is closing the road. It – depending on who goes there first, if they need assistance, then they will call the other – the party, you know. So that's the current arrangement.

MR PAGONE: And is there a risk that two people will be called and two people will go there and two people will conflict about what to do?

MR B. RAJAPAKSE: I suppose there can be. But if the police is there first, then they will I suppose coordinate who should be doing what.

MR PAGONE: Yes. Okay.

MR B. RAJAPAKSE: But if it is some other party - - -

MS DOTTO: Can I add – I know I – I repeat myself a lot. But that is bringing back to the – one of the points that we really emphasise in our submission which is the need for improved governance into flood management. And our ask is really for the authorities to work together. And then that goes into not just then the flood, it's not just Melbourne Water and us. It's all other asset owners and managers of things that are impacted on during the flood. It is really needed, that we have a systematic approach across various authorities, that we can all work together towards something, and put our efforts where it's needed to avoid this risk that you are mentioning. The ask is that – we ask you to consider is who should lead that. That's a clear action in the flood strategy for the next 10 years. It's a clear action to work on governance and better management of flood, prior, during and post-events. I guess what we ask you to consider is how can we accelerate that and who could start leading the works.

MR PAGONE: Good. Thank you. Any more questions?

MR PEGGIE: I've got one more. The terms of reference for the inquiry discuss the Flemington Racecourse flood wall. Your original submission detailed the process and the way in which you were involved in the process. But today you haven't

necessarily provided anything further in regards to that aspect. Would you like to elaborate further in terms of the wall or the implications or the impacts of the wall?

5 MS DOTTO: We – I don't think the submission mentions. In the Parliament submission we did after that – that's why I can say because it's public. We asked for a total review of the whole process.

MR PEGGIE: And noting that it's within your municipality, the wall?

10 MS DOTTO: Absolutely. And noticing that we are just a referral. We don't make the last decisions when it comes to that.

MR PEGGIE: So that's alluding to the fact you're not the planning authority for the facility.

15 MS DOTTO: For flood, no. We are referrals only.

MR PEGGIE: So nothing further to say in terms of – other than the fact that the Parliamentary submission has requested a thorough review?

20 MR B. RAJAPAKSE: No, I don't have enough information on that. Happened a long time ago, so, yes,

MR PEGGIE: That's all.

25 PROF MAIER: Thank you very much. You have mentioned the modelling. And Thank you. There's a few mentions of the need to update the modelling, probably every five years, and also using the latest technology. And so am I just correct you're referring to the HEC-RAS model for the Lower Maribyrnong? Is that
30 – when you're talking about the outdated technology and the modelling, is that sort of 20 years old? Is that the – which – which modelling are you referring to for that?

MR B. RAJAPAKSE: Not HEC-RAS modelling. We are talking about 2D modelling maybe TUFLOW of the - - -

35 MS DOTTO: 1D/2D modelling.

MR B. RAJAPAKSE: Yes.

40 PROF MAIER: No, I'm just saying the – you're saying, you know, the latest technology should be used. And so what is currently used, is that – like, is the - - -

MS DOTTO: 2D/3D TUFLOW modelling.

45 MR B. RAJAPAKSE: Yes.

PROF MAIER: Is that what you are using, or is that - - -

MS DOTTO: Yes, that's what we use.

MR S. RAJAPAKSE: Yes. That's the mostly widely used software, TUFLOW.

5 MS DOTTO: Yes, that's what – yes. That's industry standard at the moment.

MR S. RAJAPAKSE: Yes.

10 PROF MAIER: I am just saying – so you referred to Melbourne Water's modelling. Is that – I mean, I wasn't quite sure. You were saying - - -

15 MS DOTTO: No, it's not the tools that are more the new models, but the inputs and – and software improvement of what you can do. You can provide more accurate data. You can use more than – I am assuming than 20 years ago. We can use new future climate change projections. So there are a lot of advances within the field that should be considered in flood modelling compared to 20 years ago.

20 PROF MAIER: Sure. Absolutely. But who is responsible, I guess? I'm sort of saying you've got your own sort of models you're using. Are you referring to your own models? And the data – I'm just thinking about the sort of delineation between Melbourne Water's responsibility for the modelling and what you are doing.

25 MS DOTTO: So what we are doing is catchment modelling, and that includes using all our dataset, plus all Melbourne Water dataset. And we use, as good as it is, available for drains and pipes that are from their remit. And that is our remit. In this model we need to assume a flood level for the river.

PROF MAIER: Yes.

30 MS DOTTO: Right. And then river management and river flood management is within Melbourne Water remit, therefore we use the best available information for the flood modelling in the river to put in our models.

35 PROF MAIER: So the output from the Melbourne Water model is an input into your modelling?

MS DOTTO: Exactly.

40 PROF MAIER: Yes.

MS DOTTO: Exactly. So once the river – the Maribyrnong River flood model is updated, we will have to come back and re-run our models to understand how that impacts into our catchment.

45 PROF MAIER: Yes. So that's going back to my question then, which is when you're saying the modelling is outdated, that was referring to the river modelling?

MS DOTTO: River modelling.

PROF MAIER: And that is the HEC-RAS that is currently used?

5 MS DOTTO: I am not sure. I haven't done the flood modelling.

PROF MAIER: So you don't know what modelling is - - -

10 MS DOTTO: We assume a flood level that comes from a model that is

PROF MAIER: Okay. But the model is not being updated regularly at this point? Is that sort of what – is that what you are saying?

15 MS DOTTO: Exactly.

PROF MAIER: Yes. And so – and you talk about the latest technology. So – I mean, again, that's using the – you know, the 2D modelling? That's not currently used in the river model? Is that what you are - - -

20 MS DOTTO: No, I don't think it's that. I think it's major – mostly consider what is the bathymetry current in the river. I am not even sure if it's still the same as before, mainly in the lower areas. So what is the bathymetry in the river? What is the impact of climate change? Rainfall intensities in the future? And considering that the river model needs to have the inflows from the catchment, probably we have a lot
25 more in-flows from urban areas now than in the past.

PROF MAIER: Okay. So when you're talking about a five year sort of update frequency, that would be the – those changes both in terms of the rainfall input through climate change, and the input in the catchment – the run-off due to
30 catchment changes, and then potentially changes in the bathymetry and other things as well. So that basically is more the input information which should be updated.

MS DOTTO: Yes.

35 MR S. RAJAPAKSE: And also all the software, they are also updated annually because, you know, they find errors and they update that software. So that's why need to update once in five years. In five years the software can be developed a lot more, like, accurately, understanding the issues so – with the past experience. So that's why once in five years is a good time to update all the flood models with the
40 latest land use data changes, rainfall pattern changes and, you know, the software changes, and everything, to capture.

PROF MAIER: Yes. So you're saying that you're doing that at your end, when it's in the sort of stormwater modelling, but the inputs are the things that you have
45 got no control over, and that should be updated as well.

MS DOTTO: Yes.

PROF MAIER: Great. In terms of the – I guess, going back to that question about, you know, warning and awareness. So, you know, I think there seem to be two issues there. One is around the – people are aware they are living in a flood zone, and then – you know, then there is the actual event, the actual warning on the day of the event. Do you have a sense, like, of how aware people are that they might be living in a flood zone? Because I think we're talking about more frequent events, because more frequent events, I guess, help build that awareness which is obviously not the way we want to do it, but that's the – so do you have a sense of your communities? And then, you know, if people move in from – if there is a high turnover of people and there's people from different backgrounds, they probably might not be aware.

MS DOTTO: Yes. I don't know about my colleagues. I don't know how people are aware. But what we have done in the past years is with the update of our overlays we had community consultations in all catchments and areas where – information and consultation in all areas where the overlays were updated. And we – and they are all available online. So we make the best available information we have available.

PROF MAIER: Yes. But do you think in general is it a challenge? Because floods occur sort of infrequently, that people are just – it's not on their radar at all?

MR B. RAJAPAKSE: I think if you're living there for many, many years you know.

PROF MAIER: Yes.

MR B. RAJAPAKSE: They know from they know it's coming, so whereas if they're new, then they probably wouldn't know. Just the long term property owner, then they know.

MS DOTTO: Maybe if you are a tenant you are not that aware, but if you are a property owner you will need to ask permit and you will see you are in a flood zone.

MR B. RAJAPAKSE: Yes.

PROF MAIER: And in terms of the – you know, I mean, it's really good to see that you have been proactive about, you know, trying to mitigate. I guess, you know, in terms of with the climate change impacts, do you see – so the land is subject to inundation overlay. Do you think that might sort of, I guess, change with climate, and then what – what – you know, what the implications of that might be and what you can do about it. So is it more some of those mitigation strategies you talked about, having more pump stations and levies and things like that?

MR B. RAJAPAKSE: Yes.

PROF MAIER: Do you think there will be big changes, like, in terms of – and the impact that might have, by shifting those inundation boundaries potentially?

5 MR B. RAJAPAKSE: I suppose one of the things we are probably – we are trying to do right now in the City of Melbourne is to basically have flood modelling for the whole municipality, and have flood – sorry, flood overlays for the whole municipality. So if anyone is buying any property they can go and see whether their property will get flooded in – you know, they're within the zone or not. But that information wasn't available because we haven't done the modelling yet. So –
10 because right now we have done it for part of the municipality, and we have got the funding to actually complete the rest of the within the next two years.

And then it will become a part of the planning, you know, approval. Right. And then basically if you want to develop any property within that area, then we will be
15 setting the floor levels. So that's a long term plan to – because drains, pump stations, levies, there is only so much you can do to provide the protection. Currently – current drains and pump stations provide protection for one in five year rainfall event. We are working on to improve it to one in 20, which is very ambitious in a way. But I don't think Melbourne Water has that target, but the City of Melbourne is
20 working on that. So all our pump stations we are upgrading. We are upgrading to a capacity of a one in 20 year rainfall event.

And then once the pump stations, we upgrade the drains. And again that's only part of the flood mitigation. Then the next one is to set the floor levels, and then the
25 communication. It's a multi sort of a facet sort of thing. Yes. It's not easy because in these areas there is a lot of money required and ongoing, you know, flood modelling updates. And so – yes.

MS DOTTO: Yes. And can I just confirm if your question was that if the management strategies will shift because of the new extends? Was that your
30 question?

PROF MAIER: Yes. I mean, partly. I mean – I guess – you know, it's more so much that, you know, the boundary that's subject to flooding, like, the area that's
35 subject to flooding is likely to increase with the climate.

MS DOTTO: Yes.

PROF MAIER: And absolutely – I mean, you know, raising floor levels and those
40 sort of planning controls are the best way to – but that's for - - -

MS DOTTO: But that's not - - -

PROF MAIER: - - - future – that's for future development.
45

MR B. RAJAPAKSE: Yes, that's for the future, yes.

PROF MAIER: But then you have got existing infrastructure that's – you know, and then you - - -

5 MS DOTTO: So that's – yes, absolutely. And Melbourne Water drainage – flood strategy also addresses that, and looks into how we can – we, as a collective, of authorities work with the community to live with the residual flood, do whatever we can in retrofit situations, but how we can work with them to learn how to live with the residual flood. And that is – that is highly addressed in the strategy. It's a matter of implementing the actions now.

10 PROF MAIER: Thank you.

MR BABISTER: I have only got a couple of small questions. Holger has asked most of mine. Your submission discusses some of the residents being quite critical of the SES local flood pamphlet and the mapping in it. And I have looked at it, and I can see their point or your point, that it shows areas that didn't flood, flood in areas that did flood. So it's very confusing for the residents and would have given them quite a confusing message during the event. Is that pretty much going to stay as it is until new mapping is carried out, or is there changes underway?

20 MS DOTTO: There are a few changes that we can already work with them, because our maps were updated. But obviously the impact of the river in flood is not going to change until that model is updated or ours.

25 MR BABISTER: So that's really quite a constraint, this out of date mapping on many of the things you have described today?

MS DOTTO: We think it is, yes.

30 MR BABISTER: Yes. Okay. Thank you.

MS DOTTO: Thank you.

PROF MAIER: I've actually one more. Thank you. Just going back to that governance issue which I think is a really important issue, is that – you know, is there progress being made on that, or is it – you know, do you feel you have got a – enough – getting enough traction in that, or is it – is there still too much sort of compartmentalisation in that space?

40 MS DOTTO: I feel that some of this is very new for our flood authority in terms of retrofit. And I think we are making progress in working together when it – and one example of that, that you might be aware, is Fishermans Bend and Arden-Macaulay. I think we have done a lot of progress, working collectively with other councils and authorities to improve flood in retrofit areas. But as identified in the flood strategy
45 there is a big gap that needs attention.

PROF MAIER: And so is there – is that – so Fishermans Bend, for example, is that more of just – you know, a number of parties working together willingly or – and so you need more formal – do you think you need more formal mechanisms to actually
- - -

5

MS DOTTO: Absolutely.

PROF MAIER: - - - make that happen? Yes.

10 MS DOTTO: Way more formal mechanisms would be good, yes.

MR B. RAJAPAKSE: And funding - - -

MS DOTTO: Yes.

15

MR B. RAJAPAKSE: - - - All these things cost money, so – for example, the flood modelling we are doing, you know, took nearly three years to get the money to do it. So, you know, there is so much you can do with - - -

20 MS DOTTO: It's funding and leadership - - -

MR B. RAJAPAKSE: Leadership, yes.

25 MS DOTTO: - - - we would say. I think we mentioned that in our submission a lot, is leadership to hold our hands. Local government needs leadership to – you know, to start some process until it becomes business as usual – because we are not experts in that area, until it becomes business as usual. So we do count on the leadership of relevant authorities to start with more progressive process.

30 PROF MAIER: And who would be, you know, those authorities, do you think? Is there various different authorities or what – who are the main players who should be, in your opinion, taking - - -

MS DOTTO: Melbourne Water.

35

PROF MAIER: Melbourne Water.

MS DOTTO: And State. Yes.

40 MR B. RAJAPAKSE: Flood planning authorities - - -

MS DOTTO: State for planning. Melbourne Water.

PROF MAIER: Yes. Yes. Okay. Thank you.

45

MS DOTTO: Thank you. Maybe a new authority.

MR PAGONE: I just want to go back to the Flemington Racecourse matter, if I can, because there was a lot of concern expressed by members of the community about that. And it is in the City of Melbourne. So has the City of Melbourne done or requested any analysis of the impact of the wall during the flood?

5

MR B. RAJAPAKSE: I'm not aware of I suppose one of the questions I asked myself was – normally when – you know, when we approve a levy bank, obviously water that normally would go there has to go somewhere else.

10 MR PAGONE: Yes.

MR B. RAJAPAKSE: So has someone looked at the – you know, like a modelling or done modelling to see what is the impact of raising that area? What would happen to that water? Where would it go? How is that going to impact the rest of the area? Obviously this was approved by Melbourne Water, so I'm not too sure exactly what happened. But that was the questions I have in my mind.

15

MR PAGONE: Yes.

20 MR B. RAJAPAKSE: Because when you protect one area, and then not allow water to go to that area, natural water, then it will go somewhere else. So that's why I said you need to have a municipal-wide or area-wide plan. To have a plan for just one property there will be a flowing over to the other properties, you know.

25 MR PAGONE: Yes.

MR B. RAJAPAKSE: And that's – you know.

30 MR PAGONE: Well, I suppose the question I can put differently, has the City of Melbourne asked the VRC whether a wall on the City of Melbourne land has had an impact on other people?

MS DOTTO: I am not sure we can comment on that. We were – none of us were there at the time when this happened, and - - -

35

MR PAGONE: The flood event?

MS DOTTO: No, at the moment that the wall was approved and questioned at the time.

40

MR PAGONE: No, no, I'm asking about the flood event. Has there been any follow-up to see whether something on land under control of the City of Melbourne is having an impact, either in the City of Melbourne or elsewhere. I mean, it's the question that you're asking but I'm just refocusing it - - -

45

MR B. RAJAPAKSE: Yes, yes.

MR PAGONE: - - - to say it's your wall. What impact has your – I mean, when I say your wall, it's – I mean, it's not as in your wall. It's the VRCs wall. But the VRC is not really a – you know, it's not a private corporation like some private corporations. It's a publicly – the formal structure. I haven't got it at the top of my
5 head. But it's an organisation which has some connections to the public in one way or another. And so the question really is whether on the questions of governance, there has been any inquiry about whether what has been allowed – not necessarily by you but by somebody else – that allowed on land controlled by you – not controlled, but land within your council area is having an impact on other people, either in the
10 council or out of the council. That's the question.

MR B. RAJAPAKSE: Yes. I understand the question but I'm not too sure what the – we can – we can make some inquiries - - -

15 MR PAGONE: Can you?

MR B. RAJAPAKSE: - - - at the City of Melbourne and come back to you because obviously none of us were involved – the three of us. So there may be other a lot of people working So there may be others in the council who know who
20 know what happened.

MR PAGONE: Well, we would be very grateful if you could make inquiries, even if the answer is that you don't know.

25 MR B. RAJAPAKSE: Yes. Yes.

MR PAGONE: Because it does seem – the very question that you asked was the important question, and it would be nice to have – for the public to have an answer about how – how our institutions are monitoring and evaluating the impact of such
30 an event. Because it must – as you correctly say, if the water can't get through to the racecourse, it has got to go somewhere. And if nobody is looking to see where it's going, then as a matter of governance that might be regarded as poor governance. That's not a criticism of Melbourne City Council necessarily.

35 MS DOTTO: It is a - - -

MR PAGONE: But it is a question that we will find helpful to have your views about.

40 MS DOTTO: Yes. And that is really relevant what we have put in the submission, which is we really need a better mapping of roles and responsibilities across drainage assets and management practices. We currently have very simple rules for asset management ownership and management. And we do call in the submission for better governance and decisions around that.

45

MR PAGONE: Yes.

MS DOTTO: As a collective, obviously.

MR PAGONE: Yes, of course. Have you got any questions?

5 MR PEGGIE: No.

MR PAGONE: Well, we don't have any further questions. We do want to thank you. It has been very helpful. We are really grateful by the way you have presented the material as well. It's targeted and not just here are some complaints, but targeted
10 to the kinds of issues that we need to look at. So we are very, very grateful for that. Thank you. We're not encouraging you to keep writing to us, but there are one or two things that you have said that you will come back to us.

MS DOTTO: Yes.

15 MR PAGONE: And the sooner we get that, the better. So - - -

MS DOTTO: Do we - - -

20 MR PAGONE: - - - thank you - - -

MS DOTTO: Do we send everything via Wendy?

MR PAGONE: Yes.

25 MS DOTTO: Okay. No problems.

MR PAGONE: The administrator. Thank you very, very much indeed.

30 MS DOTTO: Thank you.

MR PAGONE: We will now end this session and resume, I think, at 1 o'clock.

MS DOTTO: Thank you. Can I ask a question?

35 MR PAGONE: Well, that's unusual but, yes, of course.

MS DOTTO: Sorry. Yes. It's my first panel hearing. Is it okay if the panel
40 identify themselves or introduce themselves?

MR PAGONE: I'm terribly - - -

MS DOTTO: So that's something that is not allowed?

45 MR PAGONE: Sure. Look, I'm - - -

MS DOTTO: You tell me, then I learn for the next one. Is it something that's not allowed?

5 MR PAGONE: No, of course it's allowed. It's public knowledge who the panel members are. I'm Tony Pagone. I'm the chair. Mark Babister, who is on my extreme right. Holger Maier, who is my next right. And Tim Peggie, who is next to me on my left.

10 MS DOTTO: Thank you.

MR PAGONE: I didn't introduce us all – I did on the first session – only to save time. But it's public knowledge. I think it's listed on the Melbourne Water website, and now you have been told also by me.

15 MS DOTTO: Apologies that I didn't do my full homework.

MR PAGONE: No, not at all.

20 MS DOTTO: I will do the next time. Thank you.

MR PAGONE: No, no. And - - -

MS DOTTO: I was not aware.

25 MR PAGONE: And probably I should have thought about it and re-announced us all. So next

MS DOTTO: Thank you very much.

30 MR PAGONE: At 1 o'clock I will do exactly that.

MS DOTTO: No, you don't have to.

35 PROF MAIER: It's on the website.

MR PAGONE: Thank you very much.

40 **ADJOURNED** **[10.18 am]**

RESUMED **[1.01 pm]**

45 MR PAGONE: Well, sorry to have been slightly delayed for you. This is the resumption of day 4 in our public consultations. For the benefit of the transcript and in view of the request from the previous session, I'm the chair of the panel, Tony

Pagone. One my extreme right is – I'm having a moment – blank – Mark Babister. On my right is Holger Maier and my left Tim – I am having a blank now – Peggie. This session now is session number – let me just check the number – number 6, I think, with the Maribyrnong City Council. I understand that Ms Mellan is here to make a presentation to us. We thank you for – first of all, for the assistance that you gave us when we met you informally in May. That was very helpful in getting – helping us get a lot of background material and the subsequent material that you sent us and submission today. So if I can now hand over to you and hear from you before we can ask you some questions, hopefully. Thank you.

MS L. MELLAN: Yes. That's great, Chair. Thank you. Thanks for rescheduling me from yesterday as well. Much appreciated.

MR PAGONE: Quite all right.

MS MELLAN: So my name's Laura-Jo Mellan. I'm the director of planning and environment at Maribyrnong City Council. Within that portfolio sits the emergency management team, the building services team and the planning services team which are particularly relevant to this submission. What I propose to do was just do a quick run through of our submission material today. There's a few updates in terms of figures as we've worked through data that are different from the previous information that we've provided you and that will probably be an ongoing thing as we work through the data. So as the panel is aware, council endorsed their submission at their meeting of the 28th of March. The flood that occurred in Maribyrnong specifically impacted the residents of the Township of Maribyrnong, albeit that there was parts of Footscray Park and other public assets that were flooded through that process, but the majority of the properties impacted were in Maribyrnong Township.

We're still working through some of the long-term impacts of the event and we're still very much in the early recovery stage and there continues to be ongoing challenges just with recovery and rebuilding, trauma, some homelessness insomuch as people are still in emergency accommodation in some instances and with the 12 month anniversary coming up, we are aware that a few people have now got concerns about their insurance accommodation periods running out which is resulting in some significant community displacement which is, you know, a challenge when you're trying to work with the community through that recovery phase. So as we outlined in our submission, we continue the – we consider this review to be critical to understand the and contributions of the flood, recognising that it won't be able to address all the issues under the terms of reference and we still maintain that the terms of – terms of reference, sorry – are slightly too narrow in their scope and that they should be considered in the existing policy framework and at least making recommendations on some potential mitigation measures, particularly at catchment scale.

So I won't repeat the information in terms of what happened in the flood and when – what the river peaked at. As I've said, we're still reviewing the long-term impacts.

What we have included on there is just a summary of the table there is just the – the kind of notifications we got in terms of the flood at a really high level. So on the 11th of October around 4 o'clock in the afternoon we were advised by VICSES that the flood modelling had predicted moderate and possibly major flooding. We were then issued with a kind of flood watch for minor to moderate flooding which we shared with the community. On the 11th of October we were also advised by the SES that they were making preparations for door knocking of the local area but that – and then on the 13th of October in the morning we were advised that there would be a major flood warning which then as the panel will be aware of from the information provided by council and others, that was downgraded to moderate in the afternoon – early evening – early evening, sorry – of the 13th and we were advised that a few properties, particularly Anglers Tavern and a couple of properties and a couple of properties on Chifley Drive would be impacted as well as some council assets on the river trail.

But then on the 14th of October around 3 o'clock in the morning we were requested to open the community relief centre as there was now expected major flooding. So we shared all the warnings through social media challenge and the web – channels and the website. Obviously, with a late announcement of the major flooding, it was a bit difficult to reach some of the community through those means. When we were advised on the 11th that there was the potential for the major flooding, we placed all our staff on standby, we got the emergency relief centre ready for opening. We went through and checked drains and other assets and made sure everything was clear and we had our operational crews briefed and ready to go as well.

So as I said, after nine months we're still working through what the impacts were. There was more than 500 properties impacted. The blue box up there is a slight update on the information that we provided to the panel before which just outlines the stats-based approach, I suppose, in terms of the damage and impact of the flood. The main change is that we have updated data which shows that 335 of the residential properties are considered damaged which based on the terminology that Emergency Recovery Victoria use mean that they are habitable and then we've got 177 properties that are considered to be uninhabitable or destroyed in the terminology of ERV. We've still got two businesses who haven't returned and the other four businesses named including the two petrol stations are reopened. We also had two community – two religious groups impacted. Their actual facilities – the places of worship where they meet were impacted and we've had 10 community groups who have variously been impacted the impact on council assets which is largely youth clubs and sporting clubs.

Sorry. So as outlined in our submission, we think looking at the flood management and the land use planning together is critical. We think it's important to analyse not just the impact to the Flemington Racecourse but the impacts of urban development across the catchment. We've had some discussion in our submissions about the existing planning controls, including the Land Subject to Inundation Overlay and also some of the building permit triggers which mean that there is certain instances where people can rebuild in the current state without triggering

either a planning permit or a building permit. To date we haven't had a huge amount of planning permits sought. We've had about nine inquiries and probably about eight planning permit applications and we've probably had about eight or nine building report and consent sessions so far but we are aware that there's still over
5 100 properties that don't have their insurance resolved at this stage, so we would expect that number to increase.

One thing we would note is that while the flood was generally consistent with the extent of the mapped Land Subject to Inundation Overlay it's the height of the flood
10 that was fairly significant and that's something that was fairly significant and that's something that might require revised controls and that would be equally applicable to the building permit process as well. We do have or we did have a flood management plan that was prepared with Melbourne Water that ran till June 2021. That was in the process of being updated and it's – now the modelling's been in the process of
15 updating it again but I think it's critical to note that that identified on the model and at that time there was only 293 properties that would be impacted by a one in 100 year flood event and that's what basis of the design standards that are then the schema and the building permits. So as we outlined in our submission, we think it's important that this document is updated as a matter of urgency and we understand
20 that Melbourne Water are working to try and complete that modelling by early next year.

Again, as we outlined – and I'm not a hydrologist so if there's any detailed hydrology questions, I may have to take them on notice – that the modelling should
25 include climate change scenarios and they should be reviewed more regularly. We would like to see a comprehensive approach to the modelling that also exists in stormwater management plans and development services schemes to ensure that all of the catchments have been factored in along with the climate change scenarios which links in to the update that we would like to see to the planning controls which
30 should be looked at in the context of the actual flood that happened in October 2022. And then I think one of the key things which I know is slightly outside the terms of reference is that we think there should be a state-led approach to planning reforms and the development of any mitigation strategies on a catchment scale, just similar to what was introduced with the bushfires. There should probably be on a catchment-
35 based approach and that would actually help Melbourne Water, I think, because it means that they would be looking at a whole catchment and working with a group of councils to do amendments rather than having to do planning scheme amendments individually with each council.

40 In terms of the Flemington Racecourse wall, we did manage to find some of the files which we've passed on to you in terms of council's submission to VCAT. We're still looking for some other files that we will hopefully be able to source from the archives and provide to you but as you're aware we objected to the construction of the wall at the time based on a peer reviewed report that we commissioned on the
45 flood protection report which raised concerns in terms of the methodology used and as a result the effectiveness of the proposed mitigation measures. So there's probably not a huge amount I can add to that given the time but if there's any

5 questions that I can't answer today, I can certainly find out the information. There we go. So finally, just to summarise, the recommendations that we stated in our submission, acknowledging that some of this stuff there is some work in train particularly around simplifying the warning process and some improved transparency around that.

10 We'd like to see changes to the modelling and prediction systems and improve how the public see and interact with those warnings, a statewide program to support the community in terms of flood preparedness similar to the campaigns and education that we had around bushfire recovery given that this is an increasing natural disaster that we're dealing with and then the other stuff that's there is just what I've reiterated already, so looking at the urban densification across the whole catchment, any improvements or alternatives to the flood modelling process and the planning – mapping and that state-led approach to the planning reforms as well as looking at a
15 more integrated approach to water management I suppose across the board building on the work that State Government are already doing through the integrated water management forums that exist across the state and I suppose just acknowledging that, you know, there is people at the other end of these reforms or any changes that are proposed and it has to be done with that economic and social impact lens.

20 MR PAGONE: Thank you very much for that. I know that other members of the panel have got some questions and so too do I. Perhaps if I – perhaps just before we do that, I understand that the – you'll be providing us with a copy of the slides.

25 MS MELLAN: Yes.

MR PAGONE: Yes. And for the benefit of the transcript, we might refer to that as – identify it as CCM1, just so that we know what we're referring to if we need to go back to it. Thank you, Ms Mellan.

30 MR BABISTER: Thank you for that. It was great. You mentioned at least I think it – I can't read it perfectly well but I think it was 177 houses now destroyed.

35 MS MELLAN: So the classification for destroyed is that they're deemed uninhabitable. What exactly people are doing in terms of how they're going to address the reports that they've received we're still not sure of yet.

MR BABISTER: And so these people are not living in those houses.

40 MS MELLAN: No.

MR BABISTER: They're displaced.

45 MS MELLAN: Not at the moment. Yes. They're displaced.

MR BABISTER: And what's the or what's your understand of the source of the discrepancy between the previous 293 houses Melbourne Water's modelling or working identified versus that much larger number you have now?

5 MS MELLAN: Just looking at the flood plan which I can provide a copy of because I don't know if we actually provided a copy of that with our submission, I think it's essentially probably the climate change modelling is one aspect of it. The other aspect of it is potentially just at that point in time because it was the – I think the modelling was 2016 period.

10 MR BABISTER: But do you think the flood was higher than the one per cent flood? Because that would account for that difference.

15 MS MELLAN: I think it was slightly higher than the predicted, so I'm not sure if that accounts for that distance – that difference. I can check that and provide that further information.

MR BABISTER: If that's possible, that would be - - -

20 MS MELLAN: Yes.

MR BABISTER: - - - really helpful.

25 MS MELLAN: I don't want to give a hydrology response - - -

MR BABISTER: No, no.

MS MELLAN:

30 MR BABISTER: I appreciate – I don't want to ask you any hard questions. I'm just seeking to really understand that - - -

MS MELLAN: Yes.

35 MR BABISTER: - - - difference if that's possible and, yes, I accept that's a question on notice. That's - - -

MS MELLAN: Yes.

40 MR BABISTER: - - - for your more technical hydrologist people.

45 PROF MAIER: Thank you. I just had one question. It's sort of around modelling but but it's just more about how you use those models. So Melbourne Water does the modelling and you use the outputs. So how do you – I guess, how do you rely on those outputs from modelling and what do you use it for if you can just elaborate a little bit more on that.

MS MELLAN: Yes. So from a planning perspective, we work with Melbourne Water to prepare the plans and the modelling because, obviously, there is some drainage assets that council will own that feed into that modelling as well and that information is generally used to map the extent of any controls that we use in the planning scheme. So that could be the Land Subject to Inundation Overlay or it could be a special building overlay. We do have some special building overlays throughout the municipality, particularly in areas where we've got smaller creek corridors or if there is flash flooding that is an issue, so it's generally used for that and then that helps determined some of the conditions that we then have in the planning scheme that people have to address as part of a planning permit application.

PROF MAIER: And is it also for communicating or educating the public about potential flood risks or is that done by other – by the SES or somebody else?

MS MELLAN: It has been in the past. So there was – and I'll have to check the date for you – there was in probably about – I think it was maybe the mid-2015 to '18 period there was information that was developed that was given to each of the landowners in a flood impacted area that outlined what the potential impact could be for them and what they could do. I think it was something that wasn't necessarily kept up with the turnover of residents in the area as well, so that is something that we're looking at how we could, you know, reinstate and reinvigorate something like that that we can then keep up to date more easily as well.

PROF MAIER: And you mentioned that there's going to be new modelling and so is it – is the – like, how often was the information that you received updated, like, in terms of the modelling? Has it been – was it updated regularly or - - -

MS MELLAN: I would say that it's probably – I mean, it's – that plan was 2016 to 2021 and we're in 2023 now and we don't have updated modelling yet, so I think there is probably an intention that they update it at the kind of five year period of the plans but just in terms of, you know, workloads and things, that might not always be possible.

PROF MAIER: And that – do you – is your understanding that updated modelling will include the impacts of climate change as well? Yes.

MS MELLAN: That's my understanding - - -

MR BABISTER: Yes.

MS MELLAN: - - - from recent - - -

MR BABISTER: All right.

MS MELLAN: - - - discussions with Melbourne Water. Yes.

MR BABISTER: Yes. Thank you.

MR PEGGIE: Ms Mellan, you particularly in your initial submission and then final submissions we have discussion of permit triggers in the LSIO. Would you like to just elaborate further on that now.

- 5 MS MELLAN: Yes. Sure. I'll just pull up so I think some of the challenges that we're facing at the moment is that there – in terms of the LSIO, so the planning scheme trigger for the residents in the Maribyrnong Township in particular, the planning scheme states that a requirement for the construction of a building or to carry out works does not apply, so you don't need a permit and that's under clause
10 62.02 for the internal rearrangement of building or works provided the gross floor area of the building or the size of the works is not increased and the number of dwellings is not increased and there is also room and routine maintenance. So we have had some situations in the past – it hasn't happened from any of the residents impacted by the floods – where people can argue that they can take the building right
15 down to the stumps and that's still considered to be not increasing the floor area, so it hasn't triggered a new permit. We have rejected those proposals on a number of occasions and, you know, the result was that the applicant went for a full planning permit application.
- 20 There is also under the Building Regulations, there is some things that do require – that trigger a building permit, so a report and consent from council in this instance which would be referred to Melbourne Water. So where there's an increase or a decrease in the floor area, height or the height of the building any underpinning or replacement footing, structural alternations or the removal of any supporting element
25 and the proposed demolition of a dwelling. Again, some of the kind of – I suppose the areas at the moment that are causing a bit of debate and potential issue is that if people are just rebuilding after the flood and they're not making any structural changes and they're not changing the floor area, they may not be triggering building permits either even under that report and consent clause in the building regs which I
30 think is reg 153 for report and consent.

MR PEGGIE: And so are you seeing that in this round or that in this event that that's occurring?

- 35 MS MELLAN: It's - - -

MR PEGGIE: Is there anything anecdotal to suggest that?

- 40 MS MELLAN: It's probably anecdotal at this point because the only ones that we actually have visibility on are the ones who've applied for report and consent which so far we've only had I think it's seven in total that have applied for that. Again, I can send through that information for you.

- 45 MR PEGGIE: And no one has applied for a planning permit?

MS MELLAN: So we've had 10 who've applied for reports and consents that have all - - -

MR PEGGIE: building.

MS MELLAN: - - - asked for demolition or significant structural works. In terms of the planning permit applications, we've received eight applications from that rea,
5 but there is only four of them actually as a direct result of the – the flood and we've determined five applications in the last few months, so that's eight that we've got at the moment and two of those were a direct result of the floods. The other ones were discussions that we've been having with the - - -

10 MR PEGGIE: And that was a replacement dwelling or what was the actual - - -

MS MELLAN: There was a combination. I can send you through the details. Most of the flood impacted ones were replacement dwellings. Some of the ones that are not linked to works after the flood were people trying to do multi-unit development
15 or various other things but I can send you through the details - - -

MR PEGGIE: Okay.

MS MELLAN: - - - of those applications.
20

MR PEGGIE: And the implication of the initial submission is that you would like more control in relation to aspects of repair and routine maintenance as well as internal rearrangement of the buildings or not leading to an increase in gross floor area; is that right?
25

MS MELLAN: I think it's more looking at the existing controls are fit for purpose, acknowledging that you can't mitigate to the full extent against every hazard but does there have to be a look at the minimum floor level, for example, which I think is 300 mils above the - - -
30

MR PEGGIE: And I'm attempting to understand. Do you think it's reasonable if someone makes minor alterations to their welling that the floor levels should change as a result of that?

35 MS MELLAN: I think it's probably something that needs a broader view in terms of if you're severely impacted by a flood event, what are things that could be done within reason because obviously they've got an existing dwelling and if it's only had internal damage, you know, that doesn't require floors to be changed or anything like that, what the trigger is and what the – I suppose what we can do to help that
40 landowner mitigate as much a possible against the potential next event and it also which – and it was not a subject for this panel but it also then has implications on insurance coverage for those residents as well if they're just – you know, basically fixing what was already there at the same levels. But I think that's where the updated model and – and just reviewing the controls are important to understand
45 what can and can't be done from a planning and building perspective.

MR PEGGIE: And so if you were to provide recommendations to us or to – for that matter to the Minister, how would you either alter the LSIO or the exemptions within 62.02 of the planning scheme?

5 MS MELLAN: I think from the exemptions, it would – for the LSIO, it would probably be looking at if – and I don't know how you would word this in a provision in the scheme – but it would be looking at if there was a flood event and the house was impacted, water over the floor, and they were doing a significant amount of works that triggered the planning permit, is there additional – well, I suppose is there
10 additional assessments that can be done as part of feeding in from the flood event that happened to see how they could maybe do more than what's in the scheme currently or is it just a case of ensuring that the LSIO is regularly updated based on updated modelling. Acknowledging that there's a huge resource commitment, we do modelling more regularly.

15 So I probably – at this point in time it's more about understanding what the revised model would say with those climate scenarios in it, what we should be doing with the broader Victorian planning provisions and then whether there's any localised policies that we would have to look at as well. It's a bit difficult, I suppose, when people are
20 living there, you know, and acknowledging that it's also the owner's right to – you know, they're making decisions on their own home, it is a challenge and I completely recognise that if you're basically saying to someone, "Well, you can't just put back what was there," if that's what their insurance is allowing them to do. So I think it's quite a complex - - -

25 MR PEGGIE: Yes.

MS MELLAN: - - - issue that probably needs a whole discussion really.

30 MR PEGGIE: There is the opportunity in the LSIO to write out certain exemptions. Would you suggest that the LSIO should write out those exemptions that you've referred to?

35 MS MELLAN: I think where it's – yes. I think it's something that should be looked at but again it would have to be based on the model and on the evidence from the updated modelling, I think, and the risk and consequence of any changes that were made to that LSIO including any exemptions that might be granted.

40 MR PAGONE: Thank you for that. I might just pursue that issue as well for a little bit, if I may. I must say, when I read your submission and I reread it again – your first submission, I read it again a couple times today, I – my initial reaction was, "Gosh, how can that possibly be?" It was very persuasively written that where it was said the result of the existing LSIO control is a dwelling effected by the flood are able to be almost entirely demolished down and reconstructed without requiring
45 permission. And my initial reaction was, "Gosh, how could that possibly be? And what should one recommend to ensure that that isn't the case?" But the more I think about it, the more it seems to me to fit into the too hard basket because if you have a

requirement that says if there's an event and you got to do repairs that are significant, then you need an approval which might result in lifting the level, you might end up – the floor level – then you might end up with people not making applications and living in much worse conditions than if they just repaired what they had and lived in slightly more dangerous conditions than otherwise but nonetheless, not as based if they stuck with not being able to make any repairs at all.

So I had difficulties understanding or working out how one might accommodate the competing, you know, demands, and I wondered whether even a requirement that was triggered after an event was as a matter of social policy a good idea because it means that you have to wait for the thing to happen rather than take pre-emptive action before the event. So I then began not to like the after the event trigger. What is the answer?

MS MELLAN: That's a big question. I think what you've - - -

MR PAGONE: Well, help up with an answer.

MS MELLAN: So I think one of the things - - -

MR PAGONE: I'd like to say something but I'm just not sure what.

MS MELLAN: Yes. I think one of the things that's important is actually the mitigation measures that we could put in place across the catchment to help manage, you know, sea level rise flood storm – increased storm surges. Those kind of elements would go some way, I think, to addressing some of the issues. What those mitigation measures look like I'm not sure. You know, they're fairly significant capital projects that would have to be looked at as well which I think is why in our submission we've kind of talked about that more integrated approach to water management across the whole catchment because the planning controls just by the nature of the planning schemes kind of do look at it on a council by council basis and not necessarily that catchment might impact. So I know the modelling will look at the broader catchment but just in terms of a control. So I think mitigation is probably a key and looking at future – I suppose the way that we look at zoning of land in the future. Where it has been in a historic floodplain is maybe another element that has to be looked at going forward just given the growth that Melbourne's going to continue to experience over the next 20 years or so.

MR PAGONE: Thank you. I suspect that you're confirming my reaction which is that it's a bit hard. Any other questions?

MR BABISTER: Just one clarification. I just want to make sure I'm interpreting something correctly. So - - -

MS MELLAN: Yes.

MR BABISTER: - - - going back to the houses, you had 435 and 177, that's a total of 435 - - -

MS MELLAN: Yes.

5

MR BABISTER: - - - including 177 that were uninhabitable or plus 177?

MS MELLAN: Sorry. Can you say that again.

10 MR BABISTER: Is it – I've probably read the next bullet point and answered my own question.

MS MELLAN: Okay. Yes. So there's 335 plus the 177 and then the commercial businesses and the places of worship, so that's the properties that were impacted and
15 then council. There is obviously council facilities included in that as well, like, the overall figure.

MR BABISTER: Thank you for clarifying that.

20 MS MELLAN: Yes.

MR PAGONE: Thank you again, Ms Mellan, for coming again and you have been very, very helpful. Thank you for the time that you've given us. I know that you're partly paid to do these kinds of things but it's good that they have you here and it's
25 great that you've assisted us both in the past informally and now more formally, so we do thank you very, very much and at this stage we'll adjourn until tomorrow morning. Thank you.

MS MELLAN: Thank you.
30

MATTER ADJOURNED at 1.34 pm UNTIL FRIDAY, 21 JULY 2023

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THE HONOURABLE G. PAGONE AM KC, Chair
PROF H. MAIER, Panel Member
MR M. BABISTER, Panel Member
MR T. PEGGIE, Panel Member

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Continued from 20.7.23

DAY 5

MR PAGONE: Well, good morning to all those present. This is the fifth day and the concluding day of the public consultations that we have organised for this week. We thank you all for being present. We're in the independent review panel. To my far right is Mr Mark Babister. To my immediate right is Dr Holger Maier and on my
5 left is Mr Tim Peggie and I'm Tony Pagone, the chair of the session – of the independent panel, I should say. Today we have the fortunate position of hearing from the Rivervue Residents Committee and one or two of the residents. We're very grateful for your attendance. Thank you very, very much indeed for coming. What happened at Rivervue is a matter of great concern and it really is important we hear
10 from you about the situation. So thank you for that. Mr Goddard, I think you're going to do the main speaking but if you need the assistance of others, please let us know and - - -

MR T. GODDARD: Thank you.

15 MR PAGONE: It's to be as informal as we possibly can be, so thank you.

MR GODDARD: Thank you. I do have copies of the submission which I'll give to Wendy afterwards, a copy for each of you. If I could start.

20 MR PAGONE: Yes. Please do.

MR GODDARD: Good morning. My name is Tony Goddard. I'm the secretary of the Rivervue Residents Committee. I've been invited this morning to address the
25 panel. With me today as presenters are Mr Rob Blachford and Mr Colin Waters. Acting as observers are Mr Stan Korkalinski, Mr Neil Little, Mr Ron Davis and Mrs Elle Goddard. All of us here today were impacted by the flood. I provide this submission to the panel on behalf of those Rivervue residents who have chosen to have input. As one of many voices, I don't pretend to represent all resident views or
30 thoughts. This is because their flood experiences very much vary. Some residents lost a great deal in the flood, some less so. Some had friends or relatives they could stay with while their homes were rebuilt. Many had to find a place to rent. Some had insurance, some did not. Some are back in their homes, some are still waiting. Some residents are reserved and have chosen not to provide input to the review.
35 Others are very passionate and vocal in what they have to say. It's very important that we listen to them all. What I provide you with today is a snapshot of their feelings, thoughts, concerns and questions.

Mr Colin Waters will also be providing more detailed submission and based on his
40 own experience and concerns. Much of what happened on the 14th of October at Rivervue is on the public record. It's well-documented in residents' submissions, interviews of experience and media reports. The extent of flooding was shown on the site plan included in village owner Tigcorp's March submission. That submission also outlined damage and a rectification process. I'm happy to answer
45 the panel's questions but do not intend this morning to recount the detail previously presented. Residents have spent nine months living through it. The simple fact is 47

homes were subjected to flooding with residents still in their beds, receiving no warning of the impending flood. A neighbour knocking on doors when water is lapping at residents' doorsteps is not warning.

5 The lower ground floor of our Rivervue community centre was also flooded. This had an added impact on residents living in apartments and those using the centre facilities. Rivervue residents are very concerned about what happened. In many cases, they are anxious about further possibility of flooding. The main concerns and questions they've expressed are are their homes now built on a floodplain? With
10 what implications? This would seem a fact even if technically argued by some not to be the case. How did this happen in terms of past planning and boundary decisions? History suggests that the decisions should have been better considered. What might this mean in terms of future decisions and home values? Many Rivervue residents have put their life investment into this village.

15 What will it mean in terms of future insurance premiums? We understand Tigcorp may have a lot more this time for the same level of insurance. Why didn't we receive any warnings if the data used by Melbourne Water to sign off the flood boundary change was as good as they thought? What flood mitigation changes ought
20 to be made to the river surrounds or to Rivervue Village by Melbourne Water or Tigcorp to protect us in future? Has the panel or Melbourne Water visited Rivervue post the flood to see the impacts firsthand? Being seen would provide comfort to many residents. Unfortunately, very few of our residents' concerns seem answerable by the panel or Melbourne Water based on the respective terms of reference. I'll
25 now expand on some of those concerns.

Regarding the shift as – regarding the decision to shift the boundary closer to the river, residents who spoke to me view that decision as being overly focused on modelling data, made in haste and perhaps under undue guidance. There seems to be
30 a mountain of local history and experience to show flooding would be a likely issue at Rivervue. Therefore it's reasonably to think that any decision to relax the flood boundary or dismiss a long-term AHD requirement would take that history and experience into strong account. If Melbourne Water's modelling was focused on a one in 100 year flood event, how did that result in that boundary being shifted as we
35 understand inside the historic 150 year marker? If there was a proper balance between modelling and history, such a result would make no sense at all.

It seems absurd that we now have a situation where the previous AHD requirement of 6.6 metres in a historically flood prone area has been so readily overturned. Could
40 this mean our homes now sit at a much lower level? Tigcorp's initial submission included a comment that Melbourne Water was satisfied the Rivervue development would – the Rivervue development would not impact adversely on the river's flooding capacity, nor would it cause flood inundation to dwellings. Their 2015 submission to council which proposed that a change be made to the flood boundary
45 also described existing LSIOs as based on outdated historical flood occurrences. Yet after seven years history repeated. Mr Nick Wimbush said in his panel report that Melbourne Water had described the modelling methodology as industry best

practice. If this was the case, how did Melbourne Water and Mr Wimbush get it so wrong? Why was the Melbourne Water decision panel comprised, as we understand it, of just Mr Nick Wimbush?

- 5 Did the modelling consider the building of the Flemington wall in 2007 or the drainage system plans at Rivervue? It was suggested two weeks after the floods surveyors were at Rivervue checking levels for Melbourne Water. It was also said they were ordered off-site by a village representative. Is this correct? Was this work stopped? Aside from citing drawings and design plans, were the levels at which
10 Rivervue homes were built checked to see if they were at the correct specified level and will we – will we receive advice in that regard? Regarding future planning decisions, could we see a scenario where Melbourne Water reverse their decision on the flood inundation boundary? Residents are concerned what this might – what this could mean for their homes' values and insurability. Is the review panel prepared to
15 consider the question of compensation from Melbourne Water given the flawed Melbourne Water decision?

- Regarding the reality of flood risk, we understand Tigcorp may have had difficulty pre-flood in securing adequate flood risk insurance. Given that the flood eventuated,
20 does this mean that those in the insurance industry took the importance of the historical perspective more seriously than Melbourne Water? Most if not all affected residents are substantially out of pocket due in part to a shortfall in Tigcorp's building insurance covering resident relocation. Yet the latest insurance guidelines that were received from Tigcorp last month suggest that residents should now
25 consider funding their own relocation needs as part of their contents insurance. Is this in case Tigcorp's building insurance which residents themselves already fund again proves insufficient to cover relocation costs should a flood reoccur? This double cost to residents highlights some of the ongoing frustration in getting the owner Tigcorp to contribute more to mitigate risk.

- 30 Regarding warning systems, residents noted that responsibility has now been shifted away from Melbourne Water. However, concerns still exist regarding the capacity of emergency services to respond. We were surprised when an SES area manager said he understood Rivervue had received a warning. The residents did not. The area
35 manager said this during the initial round of public meetings months after the flood. This suggests there were communication issues within the SES both during and after the flood. Without proper attention to flood mitigation strategies be they big or small, the SES could continue to be stretched on the ground.

- 40 Regarding mitigation strategies and we see this as the biggest issue for Rivervue, we note that Melbourne Water wrote last Friday to affected Rivervue residents acknowledging that the existing modelling system can be improved. But changes to data modelling aside, there are physical mitigation strategies that can and should be started. These are what residents want to hear about and physical strategies may also
45 help keep a lid on insurance premiums. For example, a review of the Rivervue drainage system is immediately recommended given it was a significant source of water entering homes. Can Melbourne Water help Tigcorp with inspection and

advice on the adequacy of our drainage? Are one-way valves with traps feasible? Are our pondage systems also fit for purpose? If Melbourne Water can't help, who is the authority to contact? Tigcorp, the village owner, has told residents it will await the findings of the review before considering mitigation yet the panel's terms of reference do not include mitigation strategies. This is particularly odd given the future development planning in the upstream Maribyrnong catchments.

The Melbourne Water letter sent to residents last Friday also said they had gathered information about managing flood risk at our location. So why do the terms keep the review panel at arm's length from this? If mitigation is not within the panel's terms of reference, then who does have the responsibility for recommendations in this regard? Surely, it's not up to residents to lobby local and federal members to ensure this happens. What's going to drive Tigcorp, Melbourne Water or council to contribute to mitigation action without recommendations to do so? Who will apply the political pressure to revisit the Arundel dam proposal. Let's face it, if the Arundel dam had existed, we would not be talking about a flood nor a Flemington wall nor a need for this review panel.

Regarding the scope of the review, it does not go anywhere near far enough. This is hugely disappointing for Rivervue residents. Mitigation strategies beyond just the Flemington wall as well as changes to the warning system are obvious errors the panel should be making recommendations or comment on. As it stands, because of the narrow scope the review could be seen as short on content, courage and independence. Many areas of resident concern could go unanswered if the panel or Melbourne Water isn't prepared to act. Also very disappointing is the decision of Rivervue management and Tigcorp not to accept the panel's invitation to appear and face questions. Again, content and courage would seem to be absent.

In closing, Rivervue residents urge the review panel to proceed boldly without agency or political favour or influence. The focus cannot just be on the – the focus cannot just be on the what the modelling systems did or did not tell us or the decision-making process inside Melbourne Water nor can it be just on the Flemington wall given the other big developments happening along the Maribyrnong. We urge Melbourne Water not to overlook any solutions wherever they lie in better managing the river flow and impacts. While this is principally Melbourne Water's role, we will continue to strongly voice our concerns to Tigcorp the village owner. Thankfully, most affected residents are now back in their homes at Rivervue. Homes have generally been rebuilt and life goes on. But for some lifestyle on the river will now not be the same again with fears of a flood every time there is heavy rain. I thank you for your time this morning. Residents and I trust the review will provide answers to the many questions we put to you today. Thank you.

MR PAGONE: Mr Goddard, thank you very much. I just want to say a few things in general but one of the questions I wanted to ask is whether you'd like us to ask questions now or to wait until you've all had a chance to say something. We're flexible about that.

MR GODDARD: We're quite happy to answer any immediate questions you've got. Colin's got a submission he'd like to go through. Colin, what's your preference?

5 MR C. WATERS: I think at the end because - - -

MR GODDARD: At the end.

10 MR WATERS: - - - what I've got to say is kind of related, of course, to - - -

MR PAGONE: Yes.

MR WATERS: - - - Tony's discussion.

15 MR PAGONE: Just before you do, can I thank you again for what you've had to say. It is things that are really important to be said and whether we're able to take them all up is a different matter but we're really very grateful that they are being said and I'm sure that I speak for all of my colleagues on the panel but we – the significance of the impact for the residents has not been unnoticed by us and the
20 limitations of what we have has also not been unnoticed by us so - - -

MR GODDARD: Okay.

25 MR PAGONE: Thank you.

MR GODDARD: Thank you.

MR WATERS: Thank you. Well, good morning, everyone. My name's Colin Waters. During my working career I was a trained professional engineer, so
30 naturally when the flood took place I had a basic instinct to think how on earth can this happen from a technical kind of perspective. So before I start I can only say that along with many of my neighbours we are livid with the abuse of power and the acts of bastardry that have been inflicted upon our twilight lives. That's heartfelt. Those living at Rivervue, we have been let down by the terms of reference that this review
35 panel has been given, so we only see limited merit in the overall future findings because the root cause of the Rivervue floods rests with rezoning of the land not being carefully thought through, considering many decades of history of the site. It was a floodplain in 1974 when a flood happened and nothing has changed since other than rezoning.

40 It is somewhat an oddity that I'm presenting crucial technical information that is external to the terms of reference but the public data needs to be expressed if full transparency is to be achieved. The following is a result of my own personal experience as a resident of the flooded villa – of a flooded villa at Rivervue and is
45 submitted in support of the general RRC submission that Tony present except that this is a compilation or readily obtainable information in the public domain to

understand some basic reasons why a 50 year flood caused so much heartache and damage at Rivervue and if there are any prospects of it reoccurring again.

5 It's taken nine months to repair our homes during which time anxiety, discomfort and great expense has been incurred by all displaced residents. All building design work adjacent to a major river is based on one in 100 year flood event engineering standards. Rivervue suffered only a one in 50 year flood event on the 14th of October. It was a similar flood to within two centimetres that occurred back in May 1974 which was also a 50 year flood and about 50 years ago. About 60 households at Rivervue have purchased 99 year leases that are subject to the one in 100 year standards that have proven to be a massive failure against those standards. This 50 year flood has ruined all our property wealth, has cost each household around \$100,000 to rectify just on contents and out of pocket living expenses. Some folks were insured, others were not which has caused a lot of grief and hardship. Nobody had any awareness that the villas were constructed on a floodplain because the public information was misleading and a lack of disclosures at the point of sale.

Major insurers such as CBA now don't offer new contents insurance to us which is a massive concern. The root cause of what happened at Rivervue lies in the evidence that all the flooded villas have been constructed on a floodplain without adequate protection and all remain susceptible to a repeat event unless government mitigation works are implemented upstream as appropriate. The public domain evidence. Can the review panel consider the following discussion items that I have gleaned from public records and I have 24 points to make. The Melbourne Water map of Greater Melbourne appears to exclude the massive high density housing development in the Sunbury Lancefield corridor. I might be wrong with this but when I looked at it, it doesn't seem to be – it seems to be the case. This is where most of the water originated for the flood. Therefore Melbourne Water 100 year flood modelling along with other reasons such as data collection or a combination of both is not fit for purposes as evidenced on the flood data.

Early attempts for building permits at the Rivervue site were being rejected from the turn of the century, so the prevailing owners went to VCAT in 2004. A VCAT 2006 ruling had sensibly applied a 6.6 metre AHD plus 600 millimetres of freeboard for dwellings. That means that buildings built on the site must have a finished floor level no lower than 7.2 metres. VCAT had adopted – and this is really important – VCAT had adopted Melbourne Water's AHD requirements back in 2006. Is it reasonable to conclude that the Melbourne Water modelling of VCAT 2006 even then probably fell short at predicting a 100 year flood? The question for the review panel needs to know was it the same version of the modelling that Melbourne Water accepted in the 2015 C151 Wimbush report? This may be true but seems illogical because of a further nine years of development along the catchment area as evidenced last October. The 2015 modelling couldn't even predict a 50 year flood.

45 How can it be that the river manager can actually go backwards in predicting flood events and the degree of damage? Does it come down to a lack of understanding and attention to detail or human resources capability interpreting the real-time situation?

Rivervue wanted to build terraced villas which is what has actually happened and it looks beautiful. It's a lovely place. Unfortunately, to achieve this the LSIO needed to be removed from the building envelope on the site just because of the height difference of what you're trying to squeeze in. Long story short, this was achieved
5 through the agency of the mystifying Wimbush report of 2015, C151. Incredulously, Melbourne Water being the proponent of removing the LSIO asked Moonee Valley City Council to commission the C151 panel of one man being chairman of himself supported by consultants. Why would Melbourne Water want to remove the LSIO from a floodplain with decades of history of flooding events? What motivated the
10 government to initially appoint Mr Wimbush as chair of this inquiry? Why was the current Melbourne Water chair – why has the current Melbourne Water chair recused himself from this inquiry? Because as I see it, the board has presided over too much inaction with flood safety for far too long.

15 If anyone had only looked at the historical data kept on the river since 1871, they would not have even considered shifting the 100 year flood line 80 metres plus down a steep hill closer to the river. Has the panel discovered why was the fix on to extinguish the LSIO despite the obvious consequences? Would the panel agree that the summary and recommendation opening paragraphs of C151 report craftily
20 written unintentionally summed up the impending disaster that only took six years happen? The SBO was a complete disaster. The LSIO removal and the building – from the building envelope, a complete culpable disaster but it had strong support for undisclosed reasons. Has the panel discovered what the motivation was at the time and who was driving it? Chairman Wimbush presided over the future misery and
25 financial ruination and despair of at least 1963 affected dwellings and families in the district.

Given the evidence that the Melbourne Water modelling is woefully inaccurate, would the panel agree that suggesting that only 1963 properties were affected by
30 realigning the flood lines is a gross underestimation of reality? The C151 report had the sole purpose of removing the LSIO and to achieve it there is evidenced bizarre logic or lack of logic as to the – as to draw the required conclusions. The panel needs to do a forensic study of the report and how objections were dismissed out of hand and obtain the documents that Rivervue submitted via BMDA Town Planners.
35 In it you will see that, in effect, the owner asked the czars of Melbourne Water to remove the LSIO. Would the panel consider this to be an abuse of power by Melbourne Water? The C151 – indicates some confusion as to whether or not Melbourne Water did perform modelling confirmation of some consultant's estimations. Does the panel agree that this needs to be evidenced and clarified
40 because of the massive liability potential?

Does the panel think that the use of consultants is acceptable in such a major and serious policy change by Melbourne Water? Melbourne Water needed to ensure that they had the modelling skills in-house so as not to use consultants with probably far
45 less resources than a giant institution with 144 years history at the time. If the panel finds this to not be the case, does the panel consider this to be a scandal and professional negligence? Is it true that when the LSIO was arbitrarily removed by

Melbourne Water in 2016 Rivervue was able to potentially design the village with an adjusted AHD of 5.85 metres which then only attracted a standard 300 millimetres freeboard? If true, how can that have ever occurred on a floodplain? Does the panel agree that how a 2015 C151 review panel of one person with such weaknesses led to Melbourne Water overturning its own historical AHD from 2006 and reduce it by 1.1 metres?

Is it true that Moonee Valley City Council stamped and approved this adjusted 5.85 AHD for the site which allowed the site to be developed with presales and constructions in 2017? Many finished floor levels along Evergreen are designed as 6.4 metres AHD but actual built is 6.35 according to some Melbourne Water survey results. The finished floor levels along the next street away from the river has some lower AHDs than Evergreen which is closest to the river. Does the panel believe this to be a prudent design when it was a Greenfields site built on the side of a hill? The villas were all flooded by the complete failure of the stormwater drainage system well before the water crept across the flat land. It's very important for the panel to visit Rivervue and just have a look at what the construction looks like there.

I witnessed water spouts about a metre high flooding the streets at the rear patios of the under buildings along Blueridge and this was a metre high going through already about two foot of water, so there's a hell of a lot of energy. The management have – the management have stated that there are no surge protections devices installed in the stormwater pipes which would appear to be true. There appears to be a lot of confusion as to whether or not previous owners had done the earthworks which would mean that the site would have had a minimum 7.2 metres finished floor level against a design of 6.4 as it actually is along Evergreen at least. The panel needs to draw its own conclusions about the integrity of what has been submitted but the required earthworks were never done because the flood level peaked at about 6.5 metres AHD at my villa.

BMDAs submission on behalf of Rivervue is extremely illuminating on how indefensible the Melbourne Water position is on this fine mess. The entire situation has been created by the hands of Melbourne Water and Moonee Valley City Council. Dozens of Rivervue residents were encouraged into buying properties that are designed to be uninhabitable and at great cost with huge contractual exit penalties due to capital losses in land values as a result of the land being flood prone. Does the panel accept this to be the case? The BMDA submission number 44 states that the earthworks were completed for years 2014 to 2015 but this is before the LSIO was extinguished in 2016 by Melbourne Water. Therefore the earthworks should have reflected the 2006 VCAT ruling of 6.6 metres plus 600 millimetres of freeboard.

This needs to explained as it is contradictory, misleading and clearly the 7.2 metre finished floor levels never happened. Submission 44 also shows some pictorial history of AHDs over the relevant time period which is quite useful to consider. Attachment 44A shows a one in 100 year LSIO which went from December 2005 to – up to the Wimbush inquiry in 2015. Virtually all over stages 2, 3, 4A, 4B and partially 5 and 5A of the Rivervue building footprint. It's interesting to note that that

one in 100 year pictorial thing actually almost accurately models a one in 50 year flood event. Attachment 44B, reference C151, 9th of July 2015 shows the one in 100 year pictorially covering slightly more of the site than attachment 44A but quite similar in shape and that's a little weird in the context of what I'm explaining.

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Attachment 44C shows the Melbourne Water proposed LSIO dated the 22nd of October 2015 post-C151 report. However, it still encroaches about three metres over several villas along Evergreen Avenue stage 3. Note that all the land where the villas are built is dead flat. How does the water know when to stop? Clearly, the new Melbourne Water one in 100 line is only proposed, extremely fanciful and technically not supported by Melbourne Water modelling proficiency because they have none but compliant with the desired outcomes of the interested parties at all levels. Remember that it was only a 50 year flood that accurately replicated the 100 year model.

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Following the submission by BMDA where they only asked for the LSIO to be removed, why would the town planner such as BMDA expose their reputations on a certain loser if they are competent operators? Attachment 44D dated the 4th of August 2016 to the current date shows the gazetted new 100 year flood area issued by Melbourne Water. Note that the flood data has been recently removed from the Melbourne Water webpages for Rivervue which I find disgusting. The BMDA gazetted 100 year flood line clearly has been arbitrarily moved closer to the river by about 15 metres because it is roughly coincident with a walking track behind my back fence line. I estimate the walking track would have a AHD of something of around 4.5 to five metres and that's the new 100 year line. How can that possibly be the case by a professional government institution charged with the management of a river?

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A prospective purchaser – this is really important. A prospective purchaser of a 99 year lease armed with the gazetted flood information according to Melbourne Water's BMDA has been deceptively encouraged to buy into a 99 year property lease based on the Melbourne Water incompetently published data. Does the panel have any alternative explanation and does the panel agree that this blatant level of misinformation amounts to causing unintentional deceptive entrapment of all purchasers who collectively have lost many millions of dollars?

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Conclusions from the above 24 points. If as a resident I can research enough background information to create a clear idea how the disaster that is Rivervue came about over the last two decades, does the panel agree that Melbourne Water acted without sufficient due diligence to remove the LSIO from Rivervue and is responsible for misinformation issued to the public along with the Moonee Valley City Council who commissioned the C151 report and stamped the approvals to construct a large section of Rivervue on a floodplain that had onsite degraded mitigation protection by the flawed adjusted AHD design and execution of earthworks? Does the panel agree that the muted land and pondage are in fact a laughable embarrassment to be passed off as suitable flood mitigation works when

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the adjusted design AHD is so low? Who does the panel consider is responsible for this situation?

- Nothing has changed and the villas are still exposed to the next 50 year flood event.
- 5 Does the panel agree that Melbourne Water's newfound obsession with modelling shows an immaturity of governance of what is required of the organisation? Why is there almost no discussion from Melbourne Water about taking all immediate mitigation measures that they have at hand? This is urgently needed along the – with positive mitigation engineering countermeasures that recognises the fundamental
- 10 problem including the reality of massive upstream high density housing development is not – apparently not currently part of the Greater Melbourne regional map. According to the recent published newspaper information, modelling revision was expected to take another three years to complete but suddenly a three year job has been condensed to April 2024. Is this an indication of how it has been neglected for
- 15 years and now the panic has set in?

- I would have zero degree of confidence that it would be meaningful and useful. Modelling is a tool that is mostly backward looking after the event. The engineers only need to extrapolate from the vast historical flood data and apply a substantial
- 20 safety factor to their designs. Let the modelling catch up three years later to see how practical solutions stake up against Melbourne Water fantasy modelling. Does Melbourne Water have the technical personnel to develop major engineering works such as the software modelling? Why are they taking the lazy route and again using consultants that I consider from the C151 experience are just as inept as Melbourne
- 25 Water? Melbourne Water's displayed beyond any shadow of doubt that they are clueless with their modelling and cannot even differentiate today between a 50 year and 100 year flood event. Melbourne Water directors and senior management have been asleep at the wheel for at least two decades from the review of all evidence at hand.

- 30 When I witnessed the public persona of Melbourne Water in a number of community forums that I've attended, I feel as if I'm a bit player in the TV show Utopia with a lightweight management team ill-suited to face the commercial world and reality of protecting the population from floods. Melbourne Water has a massive public image
- 35 problem that they have created all by themselves through incompetence and a dire decision to realign the floodplain at Rivervue in particular. This land always was and remains today a floodplain. The pinch point in the river under the Canning Street Bridge inherently causes floodwater to back up over the residential land. The kinetic energy of the floodwater is expended as massive waterspouts in the road drains and
- 40 backyard drains of the villas. The drainage system cannot possibly be fit for purpose, yet all of these things have been approved. So how can the authorities get so much so enormously wrong?

- 45 Does the panel agree that the 47 plus Rivervue villas that flooded have been built by design underwater interspersed by dry periods? Therefore they are uninhabitable and a health danger to the elderly residents. Will the review panel recommend the demolition of all floodplain constructions and substantial compensation be paid to

- the victims of this massive and incompetent mess? Does the panel agree that the development has not considered all prudent building safeguards despite the land having numerous decades of history as a floodplain only for the Melbourne Water contrivance of rezoning in 2016? There's no meaningful construction protection. Is it a fact that the design AHD was adjusted to 5.85metres and accepted by Moonee Valley City Council planning department? The selling of 99 year leases at Rivervue is a massive misstep as a result of institutionalised incompetence which encouraged the developer to build these villas.
- Melbourne Water needs to be far more aware of what they present to the public and as a minimum update the lack of greater Melbourne of land zonings that are – so that the engineering not misled or able to find workarounds for future unscrupulous developments. The gazetted flood line has been arbitrarily moved approximately 100 metres closer to the river from where it was sensibly positioned back in 2006, although it was then still exposed to the flawed Melbourne Water modelling and what we have witnessed with this 2022 flood, Melbourne Water flood modelling has not – is not even close to fit for purpose and a huge embarrassment to the organisation but obviously a huge wake up surprise to the sleepy senior management. Management systems appear to be completely insufficient to protect the community or even reveal through internal audits that they have huge disconnects between departments for vital activities such as publication of updated information over several years. This is evidenced by the current sewerage works information to Avondale Heights that still shows Rivervue streets being built on PPNR zoning. How can that occur?
- Melbourne Water senior management are forever stressing the need to refine the modelling which seemingly ignore that its engineering mitigation works that are needed immediately. That's lazy and delusional management and new people are needed in the roles to get paid for the requirement results, not guaranteed failure with a business as usual approach. In conclusion, how can it be that Moonee Valley City Council can apply rates to a swamp? We need a renewed valuation estimate on the unimproved, almost worthless land. That concludes my presentation.
- MR GODDARD: Mr Pagone, I might like to point out that as I said a couple of our residents are quite passionate and vocal. Mr Colin Waters has expressed that through his own opinions on everything. That is the separate input from Colin as opposed to the resident – submission that I put up on behalf of the committee.
- MR PAGONE: Thank you, both of you and, yes, we can see that there's a great deal of passion there but also a great deal of good commonsense and hard work, so I thank you for that. A lot of the issues that you've raised we are aware of and it's good to hear them. I'll ask my panel members in a moment whether they've got some questions. One housekeeping matter, I think you've said that you're going to give us a copy of what you've read out.
- MR GODDARD: Yes.

MR PAGONE: Yes.

MR GODDARD: I have one.

5 MR PAGONE: We might for the benefit of the transcript call one of them RR1 and
the other one RR2 just so that we have can identify what they are. Before I do pass
the microphone to the other panel members, can I just ask you a couple of quick
mechanical things that you might help us on. We had wanted to visit the site in May
10 where we'd been constituted as a panel at about that stage and the beginning of May
we arranged to do some site visits of the area generally and we were not able to go
on the premises of Rivervue. We couldn't do that without permission and we were
not able to get that. We saw – we did a drive by, so we saw outside and of course we
could see what we could see from – even from the other side of the river.

15 MR GODDARD: Excuse me, Mr Pagone. Who are you saying didn't provide
permission?

MR PAGONE: The people that we asked. They were not the residents.

20 MR GODDARD: The management there.

MR PAGONE: The management. Yes.

25 MR GODDARD: I personally invite you.

MR PAGONE: Well, I'm going to ask you this question because we may well be
able to organise a visit possibly at the beginning of August and the question I was
going to ask you was this. Is it still worth seeing the site or has too much time
passed and the value of seeing the site diminished?

30 MR WATERS: No. It's still worth seeing it because when you actually see it and
you look at what has been published in terms of the flood line, you'll see it's total
fantasy.

35 MR PAGONE: Yes.

MR WATERS: You'll see culverts that aren't even shown. You will see Canning
Street itself was flooded. I mean, it's metres higher than the floor of the buildings.
So you'll just see how ridiculous, sadly, the Melbourne Water understanding of the
40 100 year flood line actually is.

MR PAGONE: Well - - -

45 MR GODDARD: I agree with Colin. You'll also see the pondage systems and I
think it would be extremely useful if you look at them and - - -

MR PAGONE: Yes.

MR GODDARD: - - - in your own mind work out the adequacy of those.

MR WATERS: By the way, on the day of the floods, those ponds were full and they're supposed to be part of the flood mitigation works which is actually quite
5 laughable. If you actually visited or witnessed the actual flood on the day, if those ponds were empty, it'd take about five seconds to fill them all up.

MR PAGONE: Yes. Thank you for that. That's very helpful. I'll raise the question of a possible visit with my colleagues later on and we might see whether we
10 can organise something and - - -

MR WATERS: Yes.

MR PAGONE: - - - possibly your invitation up - - -
15

MR GODDARD: Yes.

MR PAGONE: - - - if we can't - - -

20 MR GODDARD: Yes.

MR PAGONE: - - - organise something more formal.

MR GODDARD: Yes.
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MR PAGONE: Now, I might just pass it to my colleagues. Mr Babister.

MR BABISTER: Yes. I would like to reiterate the chair's thank you for those two presentations. It was quite helpful and also, Colin, I must commend you too on some
30 of the information you tracked down on your submission as well.

MR WATERS: Well, anyone can do it.

MR BABISTER: Yes. And I'm going to go a little bit further. I'm going to ask
35 you, there is a - I've looked at a lot of documents and reports. You've got a reference there to a 1975 Melbourne Metropolitan Board of Works report on the 1974 flood.

MR WATERS: Yes, no. I didn't refer to the flood being as a report. In 1974 there
40 as 50 year flood in May.

MR BABISTER: Yes, yes. I - just to quote your submission, it says:

45 *Reference report of the flood of May 1974 Maribyrnong River Basin MMBW -*

Metropolitan Board of Works and a document number and then April 1975. So I've not seen that document, so I'll be trying to track that down so we might have to contact you.

5 MR WATERS: Okay. This is – you're referring to my original submission.

MR BABISTER: The original submission. Yes.

MR WATERS: Yes. Okay. I'd have that somewhere.

10

MR BABISTER: Okay.

MR WATERS: I have the files.

15 MR BABISTER: I'm sure Melbourne Water - - -

MR WATERS: Got no idea.

MR BABISTER: - - - has that somewhere too.

20

MR PAGONE: Could you look for it.

MR WATERS: Yes. I'll try and do that.

25 MR PAGONE: We'd find that helpful, I think.

MR WATERS: So just repeat the reference, please.

MR BABISTER: The reference number is MMBW D-0001 April 1975.

30

MR WATERS: Okay.

MR BABISTER: It's point 1 on your original submission.

35 MR WATERS: Okay. All right.

MR BABISTER: And you did talk in your presentation about some other attachments. Are they attached to what you're going to give us or - - -

40 MR WATERS: No. I'm just - - -

MR BABISTER: - - - they're just referenced?

MR WATERS: - - - going to give you my presentation.

45

MR BABISTER: Okay.

MR WATERS: That's all.

MR BABISTER: And just a couple of questions about the backflow which I presume either of you gentlemen could answer. That happened in your courtyards
5 and it also happened in the street further back. Is that the locations?

MR WATERS: Yes. So I'll tell you exactly what happened. Half past 7 in the morning my sister-in-law actually pounded on our front door, etcetera. We went outside and we could see the water coming up behind our back fence line because
10 our property faces the river. So my friends came around to help me, Mr Korkalinski and his wife, and we're putting up stuff high, etcetera, etcetera, and I said, "Oh gosh, Stan, I've got a – I've got an electric bike. Can I whizz it around and put it in your garage." I was thinking he'd be higher up in the back street. So we ran around there and his house was already flooded. He walked through knee water – high water
15 because the surge up the drainage system which is supposed to run off the rainwater from his rear patio, well, the surge was a metre high coming up and the way the under buildings are built, the water is totally trapped like it's a swimming pool except with a glass door of the rear entry into the house. So when the water fills metre high surge, it doesn't take long to fill up a little patio and the only way the
20 water can go out during the flood is back through the house, so when he ran inside he was knee deep, whereas the water hadn't even come up to my back patio and I'm closest to the river. So that's a massive failure of - - -

MR GODDARD: Drainage.
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MR WATERS: - - - the drainage. There's no safety devices in the drainage system to stop the kinetic energy of the water from the river.

MR BABISTER: Okay. Well, if we visit, I'm very interested in having a bit of a
30 walk around - - -

MR WATERS: Yes, yes.

MR BABISTER: - - - with you.
35

MR WATERS: Well, when you come to visit, sadly, I'll be overseas – well, happily. So you'll have to make sure one of the residents are with you and I recommend Mr Korkalinski. He's the most affected.

MR BABISTER: Thank you. One of your colleagues has got his hand up in the
40 back. I'll pass to the chair.

MR PAGONE: Yes. Mr Goddard, there's somebody back there who might be one of your team - - -
45

MR GODDARD: Yes.

MR PAGONE: - - - who might want to speak to you, so - - -

MR GODDARD: Okay.

5 MR PAGONE: - - - if you want to just have a chat to him.

MR S. KORKALINSKI: Can I address the panel.

MR GODDARD: Yes.

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MR KORKALINSKI: Yes. My name is Stan Korkalinski.

MR PAGONE: No, no, no. Unfortunately, we've got a rule for the observers. The
15 observers can't address the panel but you can talk to Mr Goddard if you want and Mr
Goddard - - -

MR KORKALINSKI: Well, I'll speak to Mr Goddard. As Colin pointed out, I have
been massively affected in that we have a drain at the back of our courtyard and 12
Blueridge, where we live, is the lowest dip. So there's five other drains in front of
20 our place. So we've got a double loader from the drains and within 10, 15 minutes
we were knee high in water.

MR PAGONE: Thank you.

25 MR GODDARD: Thank you, Stan.

MR PEGGIE: Just that question of Tony and I think it was then qualified thereafter
by Colin but the 6.6 metres, you're taking that from the VCAT hearing - - -

30 MR WATERS: Yes, yes.

MR PEGGIE: - - - in 2006.

MR WATERS: That's - that was the prevailing AHD for the site where our houses
35 are up until the Wimbush report when it was just expunged.

MR PEGGIE: And so that's 6.6 without the freeboard?

MR WATERS: Without the freeboard. If you had freeboard, you'd get to 7.2 and
40 by design it was 6.4 and if we had the 7.2, I could have gone fishing that morning.

MR PEGGIE: That's all

MR PAGONE: Thanks. One of the things that we're asked to look at are the
45 specific effects of the flood and we may not be able to look at - in fact, I'm sure that
we cannot look at all of them and there is also a question about how far down the
chain of events of subsequent events and consequential events we can sensibly look

at. So what I'm going to ask you may not ultimately appear in our report but in terms of understanding what the scope of what we can look at, I wonder whether you might just give us some sense of the consequential impacts upon the residents of the flood - - -

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MR GODDARD: Sure.

MR PAGONE: - - - and what has – what arrangements there have been if any for reallocation of people, repairs, the cost involved in reallocating. I don't mean figures and numbers but last we heard there were still a number of people who were not able to get back into their homes and from what we have heard before and I think you've said today there's been very limited assistance – financial assistance for those who have not been able to go back into their home.

15 MR GODDARD: Sure. Well, if I talk about my experience. I'm at 25 Evergreen which is basically I guess you could probably say a little bit further up from Colin but around about the middle. What we found when the flood occurred the immediate impact was, of course, watching out for the floods and seeing it come through and doing all the efforts we could do to sort of sweep out water. My wife and I thought we would immediately be going back in after I'd swept out all the water but, of course, the water gets into all the upstream parts of the walls and we were immediately told that we needed to evacuate and we were given almost that weekend to get out – make sure we were out. In fact, that night, to Rivervue's credit, they did arrange a whole lot of stuff with hotels to put us into if we were – didn't have any friends or relatives to stay with. But, of course, we were provided with that relocation support for two weeks and being told that we had six months it would take to rebuild the homes.

30 So for – if you take two weeks out of six months, that's the difference in terms of what we needed to find money for ourselves. In my wife and I's case, we ended up with a rental property which was costing us close to \$500 a week and there's no doubt that just in terms of my impact, there's no doubt that the expenses of that \$500 a week for six months is the sort of impact you're talking about and I'm probably typical of a lot of people. So that's immediately the financial side of things. I don't know. Colin, you want to add to that?

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MR WATERS: Yes. In my - - -

MR GODDARD:

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MR WATERS: In my case, down sorry. In my case, down the northern end of the village which is closest to Canning Street, it took us nine months bar a day to get back into our place. So there's a hell of a cost.

45 MR PAGONE: And how many people, do you know, are still not in?

MR GODDARD: We're basically at the stage, particularly if I again refer to Evergreen, we're at a stage now that Colin is one of the last people - - -

MR WATERS: Yes.

5 MR GODDARD: - - - to be settled and we're actually at a stage probably within a few weeks that all the people will be back and, again, full credit to Rivervue and to Tig. I must admit, in terms of them having somebody - a group of people onsite immediately to help us with the immediate clear out of the villas and putting in train
10 a - a reparation process that at least kept it down to six months. I well appreciate there are people in other parts of the Maribyrnong that are probably not even close to - - -

MR PAGONE: Yes.

15 MR GODDARD: - - - having their homes being rebuilt.

MR PAGONE: Yes.

20 MR R. BLACHFORD: Mr Chair, Mr name's Rob Blachford and I'm actually sitting here with Tony to support him in that - - -

MR PAGONE: Sure.

25 MR BLACHFORD: - - - he has a health issue and he thought if his voice faded, I would - - -

MR PAGONE: Sure

30 MR BLACHFORD: - - - pick up the reading but since you asked the question, from another resident's point of view, I'm at 17 Evergreen Avenue, halfway between these two guys. When my late wife and I negotiated the 99 year lease going into Rivervue, we were assured by the salespeople that there would be no flood issue. Now, they
35 may have provided that information in good faith based on the decision by Melbourne Water. The question remains how that Melbourne Water decision was made through some sort of other process when the science said things differently. That is interesting to know the answer to that and if there's any liability on Melbourne Water, any liability on Tigcorp or any professional liability on the officers who made that decision because I'm a long way out of pocket.

40 Some of the things that happened along the way. We purchased the home or the lease on the home with the floor coverings included. We wanted to change those floor coverings. We weren't allowed to because they were told they were part of the home. But once it flooded, we were then told, no, that's part of the contents and
45 that's on your insurance. When my wife passed away and I redid the insurance, I foolishly believed that we weren't in a flood zone and didn't tick the flood box, so the cost has been on me. So in the space of these two years, lost my wife to cancer,

had the pandemic, then flooded out of my home at my expense. I received I think it was four nights or five nights support from Tigcorp and since then I have been on my own, driving the truck, moving the furniture - - -

5 MR PAGONE: Yes.

MR BLACHFORD: - - - paying for the rent. The property paid for close on \$900,000, that money was held by Tigcorp. I would have liked the interest on that when I couldn't live there for several months. I got nothing.

10

MR PAGONE: Yes.

MR BLACHFORD: I think there's a moral responsibility in that regard. I was told that I should claim it on my contents insurance. My contents I actually salvaged. They're okay. I couldn't live in the home because of the damage to the home, not the contents.

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MR PAGONE: Yes.

MR BLACHFORD: That is a concern to me. I desperately want Tigcorp to be successful because if they're successful, we'll be successful in getting some of the money back for our kids. At this stage that \$900,000 is gone. We need some protection for the future to give us confidence; confidence in Tigcorp, confidence in Melbourne Water and protection for our own lives.

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MR PAGONE: And can I ask you about the position with insurance.

MR GODDARD: Sorry, Mr Pagone. Can you repeat that.

30 MR PAGONE: The question was what is the position for ongoing insurance? Is - I assume - - -

MR WATERS: Okay.

35 MR PAGONE: - - - that you can't get it.

MR WATERS: I can answer that. My insurer was Commonwealth Bank and they were excellent. My friend Stan, his insurer was AAMI but he didn't have accommodation attached to the policy. So you can do the math how much he's out of pocket.

40

MR PAGONE: Yes.

MR WATERS: So I said to Stan, "Why don't you re-insure with CBA because it's easy and cheap, rah, rah, rah." He did only to get a letter saying that CBA don't offer insurance for that site any more.

45

MR PAGONE: Yes.

MR GODDARD: Mr Pagone, was your question also about Tigcorp's insurance?

5 MR PAGONE: Well, it was really a matter of whether it's known – whether we can safely – well, not safely say – but whether we now know that you can't insurance. I think we're assuming that it's going to be impossible to get insurance for you as the

MR GODDARD: Yes.

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MR PAGONE: - - - owners but I thought I'd ask.

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MR GODDARD: Yes. Well, I guess in my case the renewal comes up in probably January and I'll find out then and given it'll be post the review, I think there'll be a lot of insurance companies also looking at what's coming out of the review in terms of their position.

MR PAGONE: Yes.

20

MR BLACHFORD: Mr Chair, I'm pleased to report I now have insurance and flood insurance.

MR PAGONE: Good.

25

MR BLACHFORD: And I went online and many companies wouldn't take on the site. Woolworths did.

MR PAGONE: Well, that'll be an ad for Woolworths then.

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MR GODDARD: But I might point out again even with Tigcorp in terms of their own insurance, no doubt they've had difficulty getting their own building insurance cover and my understanding is that they have got flood risk insurance. \$5 million is what they had before but at a – probably double the excess. Of course, that doesn't assist us as far as relocation again - - -

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MR PAGONE: Yes.

MR GODDARD: - - - because as I said before, they're putting the onus back on us as part of our contents insurance to protect their selves as far as relocation goes.

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MR PAGONE: Yes. I'm going to ask you a much harder question. We heard yesterday from one of the councils that there is a – that maybe we should recommend if we're able to that any major substantial repairs may require approval and if need be – I'll put it differently. The concern was that if your property or a property requires a major rebuild or rework or repairs, where the floor level is not being raised, that there can be a complete – almost a complete rebuild and yet maintain the same floor level. So the suggestion was that something should be done about that

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so that if people are rebuilding, they couldn't be able to rebuild at the same level. Now, that may not apply with any of the properties in Rivervue but the broad question is still there. You've got your house. It is where it is. You may need to do repairs. What would you like to see happen with the reality that you've got the property - - -

MR GODDARD: Sure, sure.

MR PAGONE: - - - where it is? You can't really build it up higher.

MR GODDARD: Look, there is no doubt that the majority of people in Rivervue love Rivervue. They want to stay there. They want to live there and all their friends are there. What they really want to see is two simple mitigation strategies. Anything in terms of either improving the drainage system or the pondage or the swales or some form of wall, anything that will go some way to protecting the homes because the majority of - in fact, probably 95 per cent of people love it there and wish to stay there. They just want to see something physical able to be done to protect their homes as they stand.

MR WATERS: In my case, in my case, my wife's 77. She can't - cannot go through this again. You know, she'd be suicidal.

MR PAGONE: All right.

MR BABISTER: Sorry. Just to go back to some of your initial comments was on the warning. It might just be worthwhile if you can quickly outline, so who actually warned the residents? Was it a - - -

MR WATERS: My sister-in-law.

MR BABISTER: Your sister-in-law. And that was - she lived there or she rang you or - - -

MR WATERS: She lives there - - -

MR BABISTER: Yes.

MR WATERS: - - - and she lives at the top storey of the apartments and got up in the morning to - and looked outside and saw the river. Quickly got dressed and started pounding on doors.

MR BABISTER: Okay.

MR GODDARD: Yes. In my case there was a resident that was probably about six houses up. 6.30 in the morning, again, knocking on the doors, told us to look out our back window and when we did we obviously saw it encroaching. At that stage it was probably about six feet away, reaching the top path behind our fence and probably

over the next half an hour it slowly, slowly crept until such stage as we started to move some furniture higher and then went up and joined a whole lot of residents where we seemed to just sit there and watch and from that slightly higher ground.

5 MR BABISTER: And when you went to bed the night before, I presume you knew it was raining or it might come up a little bit but you had no notion of a flood; would that be - - -

MR WATERS: Yes.

10

MR GODDARD: Well, I don't even recall it having a heavy rain at all.

MR WATERS: No. My wife actually took photos the evening before just because it looked so pristine and I think they've been published somewhere but anyway, the pondage was full and it was a beautiful evening. Then we went to bed.

15

MR BABISTER: Yes. And that's certainly – what you're telling me is very consistent with the rainfall. Like, not that much rainfall. The - - -

20 MR WATERS: No.

MR PAGONE: - - - rainfall wasn't that heavy - - -

MR WATERS: No.

25

MR BABISTER: - - - down on the lower catchment. Most of the heavy rainfall was on the upper catchment. So looking out your window gave you a very false sense of what was happening - - -

30 MR WATERS: Yes, yes.

MR BABISTER: - - - what was unfolding.

MR WATERS: Yes.

35

MR BABISTER: Thanks.

MR GODDARD: I mean, it's interesting now – just from experience now is on my phone I'm even looking up the catchments now on a – not necessarily a fine day but any stage to see whether they're rising steady or falling. So I just can't help it. Whenever it rains I'm now having to look up the catchments and see what's happening higher up.

40

MR BABISTER: Thank you for those answers.

45

MR PAGONE: Gentlemen, thank you. I don't say this by way of trying to duck but our terms of reference are limited. That's correct. They are limited and we're – also

don't have the powers of compelling people to talk to us to obtain evidence or any of those kinds of things. I'm not saying that as a criticism. I'm just saying it's a -- it's a fact of life and we -- we're working with the terms of reference and with the powers that we have. However - - -

5

MR GODDARD: Just a question for me. Excuse me.

MR PAGONE: Yes.

10 MR GODDARD: Who did set your power of -- the terms of reference?

MR PAGONE: Well, it's essentially an inquiry that Melbourne Water has asked so that it can look at the technical -- it's a technical inquiry, essentially, to -- into what happened and the impact and the evaluation of the modelling as against what
15 actually happened.

MR GODDARD: So they were set by Melbourne Water?

MR PAGONE: I think that's a fair call. I don't actually know who physically wrote
20 them but that's how it was presented to us.

MR WATERS: Early on in the piece I had a private meeting with Rob Considine at his invitation because I was writing information to Melbourne Water asking questions and of course I was put on permanent hold by the bureaucracy and fed a
25 whole lot of garbage responses. In the end, Rob Considine asked for a meeting with me which might have taken about -- I don't know -- 30 minutes and I asked him several of the questions that I sort of addressed this morning. He couldn't answer any of them and it doesn't surprise me but we subsequently found out that Melbourne Water had an AHD of just six metres on that site as a result of the
30 Wimbush thing. So that's why I say we've been designed to be built underwater interspersed by dry periods.

MR PAGONE: Well, certainly, the AHD levels are something that we are looking at and - - -
35

MR WATERS: Yes. We can't -- you can't escape the facts.

MR PAGONE: We can't escape the facts. That's true and we are looking at - - -

40 MR WATERS: Good.

MR PAGONE: - - - at least those facts. I was only saying what I did because I didn't want you to inflate expectations. We can do what we can do within the framework and the limitations. We're not sitting as a - - -

45

MR WATERS: Yes.

MR PAGONE: - - - as a statutory body or as a court and - - -

MR WATERS: Yes.

5 MR PAGONE: - - - we have to ask people to come along as you have done and in
fairness to Tigcorp, they have given us a great deal of information and have always
been open about responding to the request for information. It's unfortunate that
we've not been able to deepen that by them appearing for us to ask questions but
10 they have been forthcoming with the information that we've asked for and we are
very, very grateful that you're here because the - you're the human impact of the
event and it would be remiss if we did not hear from and we are really grateful and I
think we - - -

15 MR GODDARD: Mr Pagone, just - does the Parliamentary inquiry get into the area
of mitigation strategies?

MR PAGONE: I can't speak for the Parliamentary inquiry. They - it's Parliament,
so it has much broader powers, including powers of compulsion and it can set its
own terms of reference, so it's a different kettle of fish, if I may - - -

20 MR GODDARD: Okay.

MR PAGONE: - - - use that metaphor. We'll have a chat and in due course get
back to you about the possibility of seeing the site but we're heartened at the
25 prospect of doing that I must say. Thank you very much. We will now adjourn
momentarily or at least when I say momentarily, until the next session which I think
is at 1 o'clock. Thank you again.

30 MR GODDARD: Okay. Thank you. Yes.

MR WATERS: Thank you.

35 **ADJOURNED**

[10.17 am]

RESUMED

[1.02 pm]

40 MR PAGONE: This is the resumption of the public consultations that began on
Monday with Melbourne Water. Thank you for joining us again. So I hand over to
you.

45 DR DI LORENZO: Thank you. To make a start, first, we would like to thank the
panel again for the opportunity to come back today. And just to reintroduce
ourselves, I'm Nerina Di Lorenzo, the managing director of Melbourne Water. With
me today are my colleagues, Rachel Lunn, Wendy Smith and John Woodland. I

would like to begin by acknowledging the residents impacted by this flood event again, and continue to keep our residents firmly in mind, particularly after hearing this morning's discussion also. And to note that we have heard very clearly both today and through the submission process and through our community engagement
5 about the significant impact that this flood event has had on people's lives. And I think we heard that again this morning. And so I just wanted to acknowledge that as we enter into our piece here.

As we outlined during our presentation on Monday, it is clear from the event itself
10 and the documentation that we have provided so far to the panel that over floor flooding was not expected seven residents. So we're clear about that. As we have noted in other areas of the Maribyrnong River catchment, the behaviour of the flood event was very close to what was modelled. But this wasn't the case for parts of the midsection of the Maribyrnong river where Riverview itself is located. So
15 again, that – what we heard this morning there bears out that difference. As noted on Monday, we're undertaking a range of investigations to gear a clearer picture. And investigations will continue taking time, and there will be a range of parties involved as, again, we have heard this morning. However, we again just want to acknowledge that there is information that we have provided and we will continue working
20 through that with the panel and recognise that further information, as it becomes available – we will provide.

I thought I would make a few very brief opening remarks, and then moving to discussion about the documents that the panel provided on Monday and our
25 understanding of those as well as any other matters that have been raised. And again, just reiterate to the panel that we will share all of our information with an absolute consciousness that we would also not – seek to not prejudice any parties or any proceedings at a later time. So we will be sticking very close to what we have got factually and providing that to you and sharing that, but with that consciousness in
30 mind.

In relation to the materials that were provided on Monday – thank you for providing those to us. We have worked through what was provided and reconciled the panel's documents and can confirm that the source documents that we have match the data
35 that you provided to us. And so we are working from the same information set. That's the first – first point. The information provided supports our current understanding of the situation at Riverview, and that while some information is still unavailable – we know we don't have a complete picture of all factors – there does appear to be several contributing factors associated with issues at the site.

40 We have already noted the difference between the actual flood event in October 2022 and the flood model in that part of the river. And in addition, we can see that a range of planning decisions over several decades have ultimately, on aggregate, impacted – impacted the reduced finished floor heights across the development. Now,
45 Melbourne Water doesn't have access to all the information related to each of these decisions, as we were party to some of those decisions but not all of those decisions, including later ones in 2017 that were undertaken without Melbourne Water.

However, we can answer questions from the panel in relation to the matters that we were involved in and that we had information on.

5 So just briefly, a couple of other comments in relation to other work we've undertaken, particularly after Monday, to provide further information to you. As requested by the panel, we've provided the mid-Maribymong model, along with a copy of our presentations for Monday. We provided the panel with some additional materials in the form of flood survey information from the October 2022 event, as well as the 2017/18 LIDAR data for the Maribymong River. To date, Melbourne
10 Water has provided our post-flood survey data on a property-specific basis to residents upon request, as well as publishing it in a de-identified version of this on our website. The survey provides and includes floor levels and natural ground levels for properties at River View, as well as some information on flood levels from the 2022 event.

15 Now, regarding the LIDAR data, which is helpful in validating the earthworks, we had hoped to provide more up-to-date information to the panel. So as I said on Monday, we commissioned that, and we are still awaiting that. And this has not been possible so far. But with that in mind, what we sought to do was provide you with
20 the earlier version that we do have. And again, we recognise it will have limitations, as it is an earlier version. However, we have provided that with a view to assisting.

MR PAGONE: Can I just – sorry to interrupt you mid-stream.

25 DR DI LORENZO: Of course.

MR PAGONE: I don't mean to take you off your - - -

DR DI LORENZO: No.

30 MR PAGONE: - - - track. In one sense – in one sense, it doesn't really matter when you provide the information you just need to know – be conscious of the fact that this is – this is – your request to us to provide a report to you by a date and our ability to comply with your request that we provide a report to you by a date will obviously
35 depend upon how rapidly you can provide us with the information that we need in order to provide for you the report by the date. So – and we're not asking for extensions of date. On the contrary, the last thing we want to do is for this thing to drag on, particularly because there are other institutions that we're looking at. But if you could just – I know that you are probably bearing that in mind, and I don't want
40 to labour it beyond stating it again publicly. But just so that, you know, the sooner we get it, the sooner we can work on it and the longer it takes to get the – because the other side of that is that if it would not be desirable for any report that you get to be hedged with too many qualifications about data being asked for and being
45 insufficient. Sorry to be blunt and obvious, but it's helpful, I think.

DR DI LORENZO: So in – our view is the same. We're working towards the same objective. We've put a lot of effort into - - -

MR PAGONE: Yes, sure. I understand.

DR DI LORENZO: review with exactly that same objective. What we recognise, though, as we – again, the interaction is useful to also work through the
5 areas that you would like to unpack further. We have escalated the LIDAR survey, and we commissioned that almost two months ago.

MR PAGONE: Yes.

10 DR DI LORENZO: Close to two months ago. There are some challenges to getting that access to airspace.

MR PAGONE: Sure.

15 DR DI LORENZO: Challenges in terms of whether conditions. That is legitimately the issue. We've escalated that with the provider. So we have done those things. But I guess my point was we were looking for what other proxy data can we provide to help - - -

20 MR PAGONE: Sure.

DR DI LORENZO: - - - draw conclusions along with exactly the same view in mind of supporting outcomes on this.

25 MR PAGONE: Sure.

DR DI LORENZO: So I think we're in the same spirit as you, and we're just trying to work out what other ways can we this and provide that. So I think – I've just got two or three very final sort of comments, and then I thought it would be best to
30 take this in whichever direction, being guided by your questions, with my colleagues, who will be able to provide some detailed – more detailed subject matter expertise.

MR PAGONE: Sure.

35

DR DI LORENZO: The only last point that I just wanted to draw out was just noting reference made this morning to our correspondence with Riverview residents. So we recently wrote to residents to enable us to work more directly with them. That was a direct letter drop to residents. And our intent is to do some further work with
40 them on site-specific flood risk management actions and to work through those more specific issues directly with residents. We can also see the opportunity to examine some of the localised issues that that were talked about this morning that emerged – that we think there's a very good opportunity in doing that further work with residents to extract more of an understanding about what might have happened very
45 specific to a site and more localised issues. So that was the reference that was made this morning.

And so just by way of, you know, explaining that – and we will do that alongside of the more routine things that we do in preparation for a rainy season. But we think this is a really important opportunity to get much more closely connected to residents in relation to – particularly watch and act and how that – how that can better support residents, knowing that they're moving back into a place and moving back in with a set of experiences from the past that we need to be able to work more closely with and support. So that was all I was going to begin with. And I thought I would close and, with the help of my colleagues, respond to your more specific questions and be guided by you in terms of the direction of the discussion.

MR PAGONE: Thank you. I think so far as we're concerned, if you would like to go first, we're happy for that to happen. But if you want us to start asking questions – look, the critical question that we really ended up last time with was for us to get a sense of the levels upon which the modelling was based. So if we gave you four documents or four bits of paper numbered 1, 2, 3, 4 – do we have a response to that?

DR DI LORENZO: Sure. So I can begin that and then I can ask my colleague Rachel to respond to other parts. So the – one of the questions that the panel has put to is was the total energy line used. And yes, I can confirm that that's correct – it was total energy line. The second question I think that the panel put was the one per cent flood level from the model. So the one per cent flood level from the model was six metres, close to the Canning Street bridge, scaling it to 6.4 metres at the upstream end of the Riverview estate.

MR PAGONE: Sorry. Can you just repeat that?

DR DI LORENZO: Sorry. So - - -

MR PAGONE: That's better.

DR DI LORENZO: That's better. Okay. And I can hear myself now, even, too. Okay.

MR PAGONE: We couldn't hear you very well

DR DI LORENZO: Yes. Apologies. So starting from the beginning, I can sort of – one of the questions in the letter was was the total energy line used. And we can confirm that yes, that is the level that the water works off. I can also confirm that the one per cent flood level from the model at the Canning Street bridge end is six metres AHD, scaling up to 6.4 metres AHD at the upper end of the Riverview estate.

MS LUNN: Just to compliment the additional question in there is that we were – there was some information provided to us on Monday by the panel. And thank you for trying to draw those main points from us. I understand you've received and filtered through some more information. So we've been asked to clarify whether the one per cent flood, given the referral response dated 22 December, noted the level in that does reflect what Wendy has just said. The original permit here did have a

level and a requirement for a flood level in. And at subsequent permits – this has been a permit – a variety of different permitting circumstances over a long time. So the note that you provided to us was in a footnote, but across many of the plans, those levels, and floor levels do match up. So yes, you're correct. The – the origin of that is the level information that Wendy has just provided.

MR PEGGIE: So to confirm, we made reference to the referral response that you've provided that had a note to the applicant and a footnote - - -

10 MS LUNN: Yes.

MR PEGGIE: - - - that was to be included on the permit. That was then translated into subsequent permits as a condition.

15 MS LUNN: Yes. And into – Mr Peggie, as you would know, the plans and different things that were associated with that. So it provided us with the information of some of the floor levels noted – that, you know, on the plans from Monday, yes, that was the translation onto where you see 6.4, for example, on those plans you provided to us.

20

MR PEGGIE: Right.

MR BABISTER: So just to clarify – 6.4 – sorry. Can you just repeat the last sentence, sorry, just to make sure I've got this right.

25

MS LUNN: I think we're confirming and clarifying that we the permit conditions, and the referral response was to give effect, as Wendy said, to the statement that's in your letter, estimated flood level from property graded uniformly from 6.4 metres in the western corner of the site down to six metres at the northern boundary, which is at Canning Street bridge. But effectively, what we believe was shown on the plan she provided us was the intent of the original permit response.

30

MR PEGGIE: And so the plans you're referring to are these plans that we see back to you. That was - - -

35

MS LUNN: Yes. And there are a variety of different plans over time.

MR PEGGIE: And the question within the request was what is the provenance of this particular plan. Obviously, it's a plan supplied by the applicant initially but then marked – annotated by someone else. The question we have as a panel is who made those annotations and what is the basis of those annotations?

40

MS LUNN: So I'm able to provide a bit more information that we don't have the provenance of of who the plan was. It looks in the following information – I wasn't with Melbourne Water at the time. From my review, it looks as if that was in somebody – probably in one of their teams sort of making, you know, some assessment or some file notes, essentially, on an email about the conversation. From

45

what we've on those plans – and we have seen things in there – it looks to us as if the handwritten notes were the proposed development – the required finish floor levels that were on there. That makes sense to us. There's a little bit of information written sections 20 to 25 that we can't read because of the scanning. But it appears to us
5 that cross-sectional notes were also referring to the finished floor levels being 600 above the flood level. I can't find the provenance of the handwritten notes. We're unclear who that was, and we'll continue our investigations.

10 MR PEGGIE: And – so Wendy's point before – the numbers we see on this plan are a translation of the total energy levels.

MS LUNN: The flood levels are, yes.

15 MR PEGGIE: Yes. Okay.

MS LUNN: Not the floor levels.

MR PAGONE: Not - - -

20 MS LUNN: So there's both flood levels and

MR PAGONE: We're talking about the document which I think is P1 on recollection.

25 MS LUNN: That's right. So is that the one with handwritten notes? Yes.

MR BABISTER: Correct.

30 MS LUNN: So there is both flood levels and floor levels

MR PAGONE: All right. Certainly. So for the benefit of the transcript, it appears that this is not D1. This is the document that was outlined in the letter that was written by the administrator, I think either Monday night or Tuesday morning. And for the benefit of the transcript, it's document which – it's three pages or four pages.
35 The first page has a number, 070/MWC.500.001.0192. And we will call these P5, P6, P7 and P8.

MR BABISTER: Tim is finished?

40 MR PAGONE: Yes.

MR BABISTER: Okay. Yes. Just following on from the documents we handed over on Monday, P2 and P3, which was just a blow up of P1 so we could read it, had the finished floor levels which appear to be as constructed. That's the one. And my
45 question is they appear to have been calculated off the water surface, not the total energy. And I'm wondering if you could confirm that and match up with your modelling water surface, not the total energy. And there seems, going through the

correspondence, to be some shift in sort of early 2009. You probably have to take that question on notice, and the answer will probably be yes or no. And that's all I'm expecting, because you've given me else I've asked for. I appreciate the stuff we got this morning, so – last night. So just after a simple clarification on that.

5

MS LUNN: Based on the information that we have, there does seem to have been some sort of change – something did happen in what the basis of the calculation was. We're still interrogating our records for anything. We do have some gaps in that process to understand the decision-making there. But yes, it is there was a gap.

10 We can't identify who made that decision at the moment. But we are continuing our investigations goes to the provenance of where the gap was. We acknowledge that there is a gap, and we're still sort of, you know, conducting more information to see if we can get any other documentation about that gap or a potential change.

15 MR BABISTER: Okay. And the sort of broader follow up question is – the LSIO in the middle model – in the Maribyrnong model region – is, though, generally calculated on total energy level, not water surface, so that's how it's meant to be done. That's what the reports say, and that's what you said in your earlier response.

20 MS LUNN: Yes, that's correct.

MR BABISTER: I do have one other simple question, too. I had a good read of the report on which details – the development of the mid-Maribyrnong model – Maribyrnong model. And it's sort of called – it's called flood mapping of the
25 Maribyrnong River, stages A and B. It's document number 07. I'm just wondering – is there any other document describing the setup, calibration, development of that mid model? And I suspect the answer will be yes or no. And if it is yes, I would like a copy of it.

30 MS LUNN: So the simple answer is no. We continue to look for information on the – to give some more context, if you like. Can you hear me?

MR BABISTER: Yes, yes. But you can move a bit closer. The feedback is weird.

35 MS LUNN: for me whether I'm projecting or not. We – from this distance, we're looking for contextual information about the development of that model, which would come from the people that were involved and the emails of the Melbourne Water staff that may have been involved in that. At this stage, we don't have that available. So what we're going off is the – the reports from Melbourne
40 Water themselves.

MR BABISTER: Okay. Thank you.

45 PROF MAIER: Thank you. So I think on Monday and today, you've talked about – how well the model performs. So you've talked about the lower Maribyrnong model, and that performs generally very well. And there was mention made that the mid-Maribyrnong model didn't perform as well. And I think just before it was said

that – you know, didn't perform that well at the Riverview site. Do you have – you know, do you – can you just elaborate on, you know, what – how well – you know, what the discrepancy was between the – the model and the actual levels for the flood?

5

DR DI LORENZO: Sure. So I can talk to that. It's contained – the information that we have is contained within the Jacobs report on the performance of the mid-Maribyrnong model. I think in some sections of the river, the model performed adequately. It's particularly in the constrained – in the areas of the river that were constrained, if you like. In the areas where there was a wider flood plain, the model didn't perform so well. That's limitations of a one-dimensional model of the river. On – within the model – sorry – within the model, the – the differences in flood depths are apparent in some of those – some of the – the charts and around the Riverview site. There is – the model underestimates the flood levels of the two per cent. So we – Jacobs re-ran the 2022 model – sorry, the 2022 flood again through the model, and the model underestimates in the vicinity of 750 mil.

10

PROF MAIER: Okay. So I think the report – I think it ranges between, you know, up to 810 mils, I think, depending on which part you look at.

20

DR DI LORENZO: Sure.

PROF MAIER: But – yes. It's between 670 and 810 mils. Yes. So it's quite a discrepancy. And did you have any – any sort of sense of – you know, any idea of the accuracy of the model prior to this report by Jacobs?

25

DR DI LORENZO: So Melbourne Water takes the position that our model is the best available information until we have information that would suggest otherwise. I think following the event, we've taken action to understand how well the model performed. It's clear from the evaluation report that it didn't perform so well. I think at the time the model was developed, there was little development in the catchment, and I suspect that may have informed – I wasn't there, so I don't know. But I suspect that may have informed the degree of focus, if you like, on that particular model. Since the event, we've taken action take that model out of action, if you like, and we're no longer using that to provide flooding information. We've taken immediate action to update the model to – so that we have more information available, hopefully by August this year. And we've also instituted a very – an immediate update to – to our so the review of the Maribyrnong River – our flood warning program, as we said on Monday, is under review – under redevelopment, if you like, across the whole Melbourne area. And is on our schedule to be updated. We brought that forward, noting that we had new information following the 2022 flood event. And we anticipate having that in action early next year.

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35

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PROF MAIER: Thanks.

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MR PAGONE: You will need to forgive me if I revert back to being a lawyer, but a lot of this stuff goes above me. So as I've understood what you've said – and this

isn't attempting to be critical. It's trying to understand what experts have been – technical people have been saying by somebody who doesn't understand the technical stuff. As I've understood it, you've said that the model – you've said the model didn't perform well. I understand that to mean that the model did not predict
5 what was supposed to happen in that little area; is that right?

MS LUNN: Yes, that's correct.

MR PAGONE: And as I've understood that, it's because the model didn't have the
10 right information in it; is that correct?

MS LUNN: Okay. So the Jacobs report outlines some of those reasons. One of the reasons is the nature of the model itself – one-dimensional steady state model. Another reason potentially is some of the data – post-event data is challenging to
15 collect. So photography and debris line dam information is not an exact science. But we know that it didn't perform – the flooding is not as expected. So – yes. And I think the model report itself outlines some of the simplifications, if you like, or some of the estimates that were made to inform the development of that model.

MR PAGONE: So it wasn't performing well because of a number of potential reasons. One reason is that there's something about the model itself that doesn't produce the right answers at that spot. Another is because the data in the model might not have been accurate.

MS LUNN: Can you explain what you mean by the data in the model might not be accurate?

MR PAGONE: I'm just trying to capture the words that you put to me in words that I understand.
30

MS LUNN: Sure.

MR PAGONE: If my words are not the correct words, you should tell me what it is I should say.
35

MS LUNN: Okay. The model itself – so the three reasons that I said – the model itself was a steady steady state report. We have more contemporary models available now, which we're using in many other parts of Melbourne in many other high-risk locations so that's one element. Another – and as outlined before, the model performed better in confined areas of the which is as we would expect
40 the – another reason is that some of the data that's collected post-event is photography data and debris line data. Photography data may not be taken at the peak of the event, or it may be taken at other points in that may not necessarily capture what the model is recording. Same with debris line data. Debris line data
45 can be higher or lower than the actual flood event itself, because that's the nature of debris. Debris data is dynamically moved up and down, depending on where captured. The model report itself also identifies that there's some parameters that

were in the model that were not quite – that were outside current industry guidance. And that was – felt appropriate at the time.

MR PAGONE: The last bit completely escapes me. What does that mean?
5 Parameters outside the model.

MS LUNN: Sorry.

MR PAGONE: Is parameters - - -
10

MS LUNN: The parameters outside the model – the parameters were in the model.

MR PAGONE: Sorry, my mistake. Parameters in the model.

15 MS LUNN: Yes.

MR PAGONE: Does that mean that the data that had been inputted into the model was incorrect?

20 MS LUNN: No.

MR PAGONE: What does it mean?

MS LUNN: Not incorrect. There's parameters that are put into the model to help
25 the model perform. Those models are – those parameters are estimates, if you like, of a wide range – they try to capture a wide range of catchment conditions. And the particular parameters I'm referring to were about the – call Mr Mannings in. And that number has some industry guidance around what that value should be. And I believe – and again, I'm just reading this from the – the reports that were available
30 at the time. The Mannings end was lower in the – the lower Maribyrnong catchment. And from what I can tell, that was continued through and adopted in the Maribyrnong catchment

MR PAGONE: And in the – this catalogue 4 factors – does Melbourne Water have
35 a view about the likely explanation for why it was not, to use your words, performing well?

MS LUNN: So we don't have a – we don't – so we continue to look into why – into
40 the context, if you like, around the model development at the time. Why the model wasn't performing well – because it was a combination of those three factors that I've outlined, which was the – the single model – the – the actual flood daytime. They're captured in the Jacobs report, and potentially also when constructed at the time.

45 MR PAGONE: And you are not able to articulate it in more than you just to have – that is to say, when I say you, I mean Melbourne Water.

MS LUNN: Not at this stage. So as I was saying earlier, some of that information will be contextual. It would be based on industry – sorry, it would be based on professional guidance and expertise at the time. And some of that information – that information is not available to us at the moment.

5

MR PAGONE: All right. So I just want to be clear about this. What we've just heard is Melbourne Water's best statement about the reasons of performance as it was; correct?

10 MS LUNN: That's our current understanding. Yes.

MR PAGONE: Thank you.

15 MR PEGGIE: So our most recent request of you made reference to a letter from 22 April 2009. This is the [REDACTED] letter to [REDACTED] at the planning group. And this letter – I asked – or we asked, I should say, via the administrator, as to whether there was any further correspondence in respect of that. And the reason I ask that question is it suggests in the letter the levels comply with the revised flood levels supplied to Melbourne Water and confirmed in our letter dated 3 February 2009. And we've heard today that the model is based on the total energy levels. We've seen a plan noting freeboard of 600 above total energy levels. But we have a letter at this time that suggests a reduction in those levels. So happy for you to elaborate as to what you found.

25 MS LUNN: Thank you. Yes. We had seen that letter and done a significant investigation to see if we could find the origin of the statements back in that letter. So we do have a gap in our records between understanding what was submitted to Melbourne Water before that letter was responded to. From my reading of multiple emails and correspondence, it seems to us that two letters may have left Melbourne 30 Water on that on the 3rd. I think it's 3 February. We found this one. It also seems to refer to another letter or previous correspondence. We can't find that correspondence at this time. We're still investigating. We have sought to follow up and seek to have a conversation with this person. They no longer work for the business. So we're unable to understand, based on our records management and 35 investigations, what the origin of that decision was.

But, yes, we – we are still confirming, but do understand that, on the basis of information, it does seem as if an alternative decision was made. It is within Melbourne Water's remit to adjust development. Mr Peggie, as you would know, 40 that there would be, you know, hundreds of permits put to Melbourne Water of which different types of information and different proposals were made. Not to suggest that that decision is correct or incorrect, but it would be a normal process for Melbourne Water to receive, through the permitting of a development in stages like Rivervue, lots of different changes and lots of different proposals to maybe modify 45 either the design of the homes or works, etcetera. So we understand that that was part of that, but we can't find any information to suggest why that choice was made at that time, but we continue to investigate.

MR PEGGIE: Just as I've been going through the plans that have been submitted, endorsed, etcetera, it's evident that elevation plans of the development – and this goes back to as far as 2008 – suggest a finished floor level – sorry, a flood level annotated on those plans that doesn't line up with the total energy level. Is that your understanding?

MS LUNN: It is my understanding. There seem to be a variety of different plans. And that, you know, we would both have reviewed those with the same hat on, essentially. There does seem to be some changes and some difference in the way that it's been done. There are a variety of reasons that might have occurred. I think there was different architects. There may have been different surveys used over time. I think what's important is, from Melbourne Water's perspective, those different levels we're always looking at does it meet the permit conditions, does it meet our current best scientific and engineering understanding, and is what's being proposed appropriate.

So I think that, you know, I would agree with you that there seems to be a variety of small incremental changes over time. And I think, referring back to there do seem to be some changes made after Melbourne Water would have stopped receiving application referrals for this area. So, yes, I would agree with you that, in principle, there does seem to have been some amendments. But the materiality of that, in line of the conversation we've just had with Wendy, it's still unclear to us what the materiality of that is. But we continue to investigate.

MR PEGGIE: And the VCAT decision of 2006 discussed the aspect of the flood level and the fact that it was six to 6.4. That was then traded into a permit condition that's remained on - - -

MS LUNN: Remained on the permit.

MR PEGGIE: - - - the permit to date.

MS LUNN: Yes.

MR PEGGIE: Would you say that permit condition isn't effective given where we find ourselves?

MS LUNN: I would say that, from my understanding at the time – and obviously I wasn't with Melbourne Water at the time – it seems to me that that letter from one of my former colleagues was made under secondary consent provisions. And, Mr Peggie, you might remember there was a period some 10 years ago that, you know, secondary consent came into use. There was lots of discussion about whether you could use secondary consent. What could you change it to do. It was lots of case law at the time on this kind of new provision. Did you have to go and change the primary permit, or could you change or, you know, make amendments to developments on a plan. I would say that, you know, that wasn't well understood across our industry what you use that process for.

So that whilst the flood level and the floor levels do remain on the permit, they have been altered through time through alternative processes that have emerged in planning rules and planning practice since then. So I'm unable to – I think I'm unable to comment whether the force of it is still there. It's still – the permit
5 conditions remain on the primary permit. They have been amended over time for a variety of secondary consent processes, some of which are on Melbourne Water's records, and some of which I understand were done at the council level.

10 MR PEGGIE: Would you think, though, that having a permit condition that stipulates flood levels and then having plans that demonstrate finished floor levels below that is somewhat odd?

MS LUNN: I think on the view – and, again, we're still investigating. There are some gaps in our record management here. I would agree with you that, if we were
15 to process things today, you know, with contemporary regulations – bearing in mind that these were decisions made, you know, some – you know, starting some sort of 10 or 15 years ago in some cases, that we probably wouldn't make some of the decisions using the methodology we did. But when they were looking at changes at that time, floor levels and flood levels often get confused in the narrative, and you've
20 seen that probably through the letters. So I think that there was some, you know, kind of pieces and understanding about floor levels and flood levels that would – you know, that we'd have a better understanding of now between the counsel.

And also that I think that it's incumbent upon us to make sure that the reasonable
25 floor level is meeting what we understand the flood level to be. So to go across how things work, and I think we discussed on Monday that the information that planners and building surveyors use are entirely based on the flood information. So an officer may have made a choice under the secondary consent provisions at the time to lower the floor level, and that seems to be the effect, but we can't quite confirm that, based
30 on the minimum requirement for a floor level is often 300 millimetres above, and that's in the Building Act. And sometimes we set much higher finished floor levels depending on what we know about a site.

So there's the – you are correct that the permit specifies a finished floor level above a
35 flood levels. That often causes confusion. But it's sort of within at the discretion of the flood plain manager whether those are taken up and down. So we can't quite confirm the origin of that decision making, but it would not have been unusual, my understanding of the time, for someone to have made an engineering judgment call about whether that was still an acceptable proposition at the time.

40 MR PAGONE: But none of that was what he asked you above. What he asked you about wasn't whether people made judgments from time to time. He asked you whether, on the basis of the question, was the conclusion that it was odd.

45 MS LUNN: It seems unusual.

MR PAGONE: It seems wrong, doesn't it?

MS LUNN: It does seem unusual.

MR PAGONE: Does it seem wrong?

5 MS LUNN: I think drawing out whether – in – if you're asking my professional view does it seem odd, I would say I agree with Mr Peggie that it did seem odd in the context. But there are bits of information that are missing that would indicate to me that there may have been a decision made that I can't understand.

10 MR PAGONE: All right.

MS LUNN: So the oddness may be my lack of understanding of the decision.

15 MR PAGONE: Well, let me try it then differently. If I were to conclude – if I, me – were to conclude that it was odd, and, indeed, wrong, would I be wrong?

MS LUNN: I think I would say in the context of wrong here implies that there is a right or a wrong answer to something I don't have all the information for.

20 MR PAGONE: That's it. Spot on. You've got that.

MS LUNN: So, I'm sorry, I probably can't answer your question whether I consider it's wrong, because I can see that there's information I don't have. So I would – and, again, I apologise. There are pieces of information I don't have.

25 MR PAGONE: But on the information that you know that I have, if I were to conclude that it was wrong, is your best answer that you could not say that I was wrong?

30 MS LUNN: My best and most professional answer would be I would agree that it is odd, but I couldn't say I agreed it was wrong based on the information I have. But we are continuing to do investigations about this.

35 MR PAGONE: That wasn't my question. My question is would you say that I was wrong. Could you say that I was wrong? I've understood that you say you can't say that it was wrong. But can you – am I precluded from finding – from saying that it was wrong, because it clearly is wrong.

40 MS LUNN: I think it's too early to confirm that.

45 MR PAGONE: I take that answer to be that if I were, on the basis of what I have now, too early as it may be, that it was wrong – on the basis of that, what we have – what I have now, bearing in mind that it's too early, it would not be plainly a wrong conclusion. You don't need to respond. We're just going to go around in circles, I think.

MS LUNN: Thank you.

MR PAGONE: Anything else you want to ask?

MR PEGGIE: My final question is the efficacy of those

5 MR PAGONE: For the benefit of the transcript, you should note that the letter of 22 April 2009 is P9. Go for it.

MR PEGGIE: Given the circumstance we find ourselves, my question is the efficacy of the conditions that were set, and whether you think that they have been effective, given the circumstances we find ourselves.
10

MS LUNN: I would say that the conditions and the original intent of the conditions that were put forward were based on best science and modelling information at the time. So the condition that was set at the time should have been effective and would have been effective based on, you know, the model understanding at the time. And whether the condition remains effective today I think goes to the heart of Mr Pagone's question. Is it still an effective condition? Is it wrong? And, again, I would say that I don't have the information to confirm the efficacy through those final stages of the process. There does appear to have been an error or some sort of something went wrong here. We know that. But we're not sure where that lands. So I don't feel as if I can provide much more to support the panel in that respect at the moment.
15
20

MR PAGONE: No. All right. It's just that the answer seems to be that it would have been effective if the figures were right.
25

MS LUNN: I would say that that – on the basis of how town planning works, that would be a logical conclusion, Mr Pagone.

MR PEGGIE: So the current condition that is uniform across all permits is the estimated flood level for the property uniformly from 6.4 metres AHD at the western corner of the property down to six metres AHD at the northern boundary. So that is what currently is in the permit, as always been in the permit.
30

MS LUNN: Correct.
35

MR PEGGIE: If that was to have been written that the finished surface level must accord with that, would that have been more effective in this instance?

MS LUNN: The buildings as built would have had more effective flood protection, not guaranteed, as we know, but more effective protection if – as Mr Pagone said, if the starting point was as we thought it was at the time we made the decision.
40

MR PEGGIE: As a permit condition, would it have been more effective had it been clearer and more precise as to what those levels were?
45

MS LUNN: Do you mean is the permit appropriately drafted?

MR PEGGIE: Correct.

MS LUNN: I think that the permit as appropriate – the – appropriately drafted is not a particularly well-worded permit. It's sort of got some unusual – not unusual factors, but at the time – and again, I wasn't at Melbourne Water at the time, but my team sort of informed me, saying that was how permits were drafted with numbers and conditions and with certain things stated in conditions, so I do think that, you know, permit drafting has come a long way since then, and we may not express it in that way now, so I don't think it's – it wouldn't have been an inappropriate condition at the time it was written. With the benefit of hindsight, we might not write it that way or construct a permit or an approval system that way through the permits and the plans, but it doesn't seem to have been at odds with how somebody may have drafted it at Melbourne Water at the time.

MR PEGGIE: Thank you.

PROF MAIER: Thanks. I'm not a planner, so just please excuse my ignorance here, but – so there was a change in the permitted floor levels. Is that – over time. Is that correct?

MS LUNN: There appears to have been a change in the permitted flood and floor level based on that information from that person's letter, but because we don't have the input or the assessment to that, we're unsure whether – based on the information we've been provided where there was a confusion about flood level, floor level or both, because we can't find that piece of information.

PROF MAIER: But as I understand it, the freeboard – that sort of – that doesn't change. That's not discretionary, so that – as you just said, basically, if the permitted floor levels would have to change, that would be mean that there would have to have been a change in the modelled flood levels on which that decision was made; is that ---

MS LUNN: Okay. So there is discretion what – what freeboard can be set, so there is discretion. There's no discretion for anybody that would be in a planning decision role to change the information from the model. That would not be sort of a normal thing, in that – not a discretionary matter unless somebody who was in an assessment role sees something and thinks, "My goodness, I've seen something that looks like an error." Say it looked totally different or there was a number that was wrong. They would go back and say, "Hey, we think there's a problem here," but it is not, like, a planner's role to say, "I don't agree with the hydrology."

But they do have discretion to set freeboard and any other design changes, noting, as Mr Peggie would be aware, there's a variety of things about designing a building, including the floor level, that we use to make the architectural response acceptable. So the permit condition does talk about a certain level of freeboard, but that's not set in any legislation or requirement, and the permit is always worded "unless otherwise with the permission of the flood plain manager", so it kind of opens it in terms of

planning or permit writing to say if we want to propose something else, there's an opportunity otherwise be written to say, "You may never change this," and that's not the case with most permits.

5 PROF MAIER: Thank you. That's very helpful. So basically, we don't know – because of that, you know, little bit of murkiness, we don't quite know, you know, whether that change in floor level was because the flood model had changed or because there'd been a change in – some discretionary change in the freeboard that's been allowed.

10 MS LUNN: Yes, that's correct. And sorry if that was the point you were trying to make. It's – it's – there – there isn't legislation or policy that says it has to be. My understanding – and again, this is being relatively new to Melbourne Water – that 600 millimetres next to a river was a very old Board of Works kind of starting point,
15 for a variety of reasons. The Building Act sets out a minimum that if you know there is a flood level, you must have a 300-millimetre freeboard unless otherwise agreed, so that's sort of taken to be the minimum standard unless there are circumstances, engineering judgments that people put forward that our team concur with on assessment, but the 600 millimetre is more of a starting point, and there is discretion
20 to move that either down or potentially up in some circumstances.

PROF MAIER: And so based on the Jacobs report for the – you know, the 2022 flood, sort of the floor levels estimated in the report sort of range between 6.48 to 6.66 metres at the site, which sort of tends to – that seems about right when you think
25 about, you know, the as-built floor level is about 6.4, around about there, and I think all the – I guess the lidar data we have been able to obtain tends to suggest that's around about the ballpark, and so it just tends to suggest that, you know, the – obviously, the – you know, the water was higher than the floor levels. We know that. That's why it flooded. And so I guess – that's really, I guess, when it comes
30 back to the modelling, because the modelling underestimated sort of the floor level by 800 mils, almost a – or .8 of a metre, and so I guess then it comes down to, yes, what freeboard, I suppose, was used for that. Right. Thanks.

MR BABISTER: Just on the freeboard discussion, I'd be correct in saying that it
35 would be very unusual to vary from the 600 mils freeboard on a riverine system well away from the bay.

MS LUNN: So historically, I – the team so advised me that it was a pretty standard starting point. So it would be a starting point that a planner would go, "Okay, 600
40 mil is kind of the normal," and guidelines tell us that there's a range of factors that tell you where you might turn freeboard up and down, and that are things like how new the model is, you know, how much confidence we have. In a new model, we would say you don't need – imagine freeboard is like a buffer or a kind of – you know, a – how off might the model be, and to modellers, I apologise for explaining that, again, like a planner. But it's almost a measure of a give and take. So the 600
45 mil was considered to be, you know, for more than 30 or 40 years, the – how might it

not, you know, quite have landed in terms of some of the inputs and outputs that Wendy has explained.

5 The 600 mil was varied, you know, across Melbourne for different reasons: so the age of the data, the location, whether we knew that, you know, the inputs were, you know, up to scratch or whether there was contemporary information. So you can't calibrate a model on data you don't have. But that would have been a decision made by flood engineers or hydrologists that historically, at the time these decisions were made, were all sat in one team. Now there would be hydrologists in my team that
10 would look at a proposal to change a freeboard, and that would be assessed by a hydrologist today.

MR BABISTER: Okay. I won't labour the point.

15 MS LUNN: Thank you.

MR PAGONE: Mr Peggie, you've got another question.

MR PEGGIE: Thank you, Mr Chairman. Just condition 37, Ms Lunn. Just to read
20 it to you, it says:

Finished floor levels must be a minimum of 600 millimetres above the applicable flood level.

25 MS LUNN: Correct.

MR PEGGIE: It then says, separate sentence:

*Unless otherwise agreed in writing by Melbourne Water, finished floor levels of
30 any outbuildings, storage sheds, etcetera, must be a minimum of 300 millimetres above the applicable flood level.*

That doesn't – that condition doesn't specify that you can alter the 600 millimetres. It specifies you can alter the 300 millimetres.

35 MS LUNN: I would agree with you, and I think it goes back to your previous comment about the appropriacy of the wording of the condition and whether the permit is constructed appropriately, but yes.

40 MR PEGGIE: Well, in that instance, it says "must be 600 millimetres" full stop.

MS LUNN: I think this is the reference to the secondary consent point. If we – if somebody was proposing to do that today, we would say you need to apply to amend that condition if you want to change it at all, and that process is different today. We
45 would say you have to amend the permit, not use a different secondary process to change something, as you see with that letter. But I would agree with you that's what the permit says.

MR PEGGIE: I put it to you that that says you must provide plans with 600 millimetres freeboard.

MS LUNN: I can't - - -

5

MR PEGGIE: There is no discretion to be provided within that permit condition.

MS LUNN: I would agree with you that's what the permit says, yes.

10 MR PAGONE: Thank you. Is there anything else that you wanted to add at this stage?

MS LUNN: Are there any other questions, or are we - - -

15 MR PAGONE: Well, there are a couple of additional comments I need to make, but not questions, as such.

MS LUNN: Well, I don't think so. I think – look, I think we'd probably – we wouldn't elaborate any further. I think we – in terms of hearing the line of the
20 questioning, I'm sort of thinking about any other data or documents that we might be able to provide. A little bit like Monday, I was looking to see if there was anything we could summarise back in terms of additional information. Other than continuing to chase, you know, the lidar and the data from that, but we will continue to share anything that we find, and it's just to reiterate that point. And just once again, you
25 know, thank you for being prepared to come back and have the second conversation and give us the time to understand what was in the documents that you tabled on Monday, and we will continue working with you or providing any other information.

MR PAGONE: Thank you for that. I don't have the letter to hand, but my
30 recollection – I suppose it may be wrong, but my recollection about the process that we explained for these sessions – let me go back a step. There was some correspondence between the administrator and each of the participants who were coming before us about what the process was that we contemplated, and the letter that went to Melbourne Water said something like that we had proposed that what
35 you would do is start with a presentation, which is what you did, and we would then ask you some questions, which is what we did, and the variation of that which happened was the variation that resulted because of the documents.

I think the letter also went on to indicate that what we would welcome – or, rather,
40 what we propose was to give you, Melbourne Water, an opportunity to comment upon the other submissions that have been made to us during the course of the week that all sorts of people have said all sorts of things, ranging in all sorts of different ways. But, today, you heard the residents expressing very strong views about a number of matters, including that the model was wrong and you may have said
45 everything you want to say about that. A couple of days ago we heard from one of the councils who said that they had a concern about what permits, if any, should be required for any repair work, or at least for some repair work, and one suggestion

that was made was that there ought to be a requirement for approval by, amongst other authorities, Melbourne Water if, knowing that there had been a flood and that it had affected the property, that the property, depending upon the extent of the repairs, should possibly require approval before they're effected. I just mention them as
5 examples. Both of those examples were ones that had already been in the document well before the panel was appointed, so I would not expect that you would need to respond to those, but I just mention them as illustration of – well, you've heard other things being said, and if there's anything you want to respond to, the contemplation is that if we could have your response by Tuesday, that would be of assistance.

10 We didn't think we would ask for a response immediately because that might be regarded as putting pressure on you that we don't wish to put because I would rather have a considered response by Tuesday, given a lot of these things you've heard dozens of times already. If you do want to respond, we welcome the response. In
15 regards to the matter that we've been discussing particularly today, may I just draw your attention to your terms of reference to us, and in particular term of reference number 4.

20 So that which we are required to do – that is to say, that which you have required us to do is to provide an analysis of the impact of the flood event, compared with the predictions and modelling, and what you've required us to do is to provide a – in the analysis, a basis for any potential differences. So if there is anything else that you want to say by way of elaboration to your answers to the questions we've put to you today, it would be helpful to get that pretty quickly. So you look as though you wish
25 to say something else. No. Excellent.

DR DI LORENZO: Only to acknowledge that we would be seeking to provide a follow-up, you know, response, and it will allow us to have some time to consider some of the things that emerged during the week, so thank you for that opportunity.

30 MR PAGONE: Thank you. May I – notwithstanding what someone might assume to be the contrary, may I thank you all for your assistance and for coming back. I know that you planned for the Monday. You hadn't planned for today when you were originally planning, and I am conscious of the fact that in any government
35 department, it's not easy to take out senior people for these exercises at short notice. I am grateful that you've done so. I'm sure that I speak on behalf of the entire panel for that. You will have gathered by the precision of some of the questions that we've been looking at this material with a great deal of detail.

40 I'm not sure whether you're aware of the volume of the material that we've received. You'd be aware of the volume of material you've given us, but you're not the only ones giving us material, and there is a huge amount, some of which is difficult to navigate. No pun intended. So thank you, and we will continue with our investigations and inquiries, and this formally concludes the consultation – public
45 consultations. Thank you very much.

MATTER ADJOURNED at 2.06 pm INDEFINITELY