

Transcript of Proceedings

Issued subject to correction upon revision.

THE HONOURABLE JUSTICE C HOLMES, Commissioner

MR JAMES O'SULLIVAN AC, Deputy Commissioner

MR PHILLIP CUMMINS, Deputy Commissioner

MR P CALLAGHAN SC, Counsel Assisting

MS E WILSON, Counsel Assisting

IN THE MATTER OF THE COMMISSIONS OF INQUIRY ACT 1950

COMMISSIONS OF INQUIRY ORDER (No. 1) 2011

QUEENSLAND FLOODS COMMISSION OF INQUIRY

BRISBANE

..DATE 11/11/2011

..DAY 58

THE COMMISSION RESUMED AT 10.01 A.M.

COMMISSIONER: Just before we get started, I don't, for a number of reasons I won't bore you with, subscribe to the notion of Court imposed silence at 11 o'clock, but what I will do is take an early break at 5 to 11 so that everybody is free to follow their own preference in the matter.

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MS WILSON: Thank you, Madam Commissioner. Do you wish to take appearances this morning? There seems to be some more people at the Bar table.

COMMISSIONER: There's Mr Ure? Anybody else? Mr Ure, who are you for today?

MR URE: The local Government Association of Queensland.

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COMMISSIONER: I think that's it. Thank you, Ms Wilson?

MS WILSON: Madam Commissioner, before I call the first witness for today, I will tender a report of the "Advice on the Flood Risk Management For Land Use Planning Within the Floodplains" by Mr Drew Bewsher.

COMMISSIONER: That will be Exhibit 961.

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ADMITTED AND MARKED "EXHIBIT 961"

MS WILSON: And I call Steve Reynolds.

STEPHEN ROBERT REYNOLDS, SWORN AND EXAMINED:

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MS WILSON: Can you tell us your full name, please?-- Stephen Robert Reynolds.

And you're a director of Humphrey Reynolds & Perkins Planning Consultants?-- That's correct.

You're a qualified town planner?-- Yes.

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And your fields of special competence are statutory town planning, strategic planning and environmental planning?-- Correct.

You've prepared a report for the Queensland Floods Commission of Inquiry?-- Yes.

Can you have a look at this document?-- Yes.

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Now, you provided that report to the Commission on the 28th of October 2011 but you've since amended it only to correct some paragraph numbering; is that the case?-- That is correct.

Madam Commissioner, I tender that report.

COMMISSIONER: Exhibit 962.

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ADMITTED AND MARKED "EXHIBIT 962"

MS WILSON: And you also have prepared an addendum to that report. Can I show you this document, please? That's your addendum?-- That's correct.

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Madam Commissioner, I tender that document.

COMMISSIONER: Exhibit 963.

ADMITTED AND MARKED "EXHIBIT 963"

MS WILSON: And the Commission has also asked you to provide some advice on the use of building controls?-- Yes.

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And you provided a report to the Commission which is titled, "Building Controls in Flood Hazard Areas"?-- Yes, I did.

Can you have a look at that document, please? And is that the third report that you've provided to the Commission, in effect?-- Yes, it is.

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Madam Commissioner, I tender that document.

COMMISSIONER: Exhibit 964.

ADMITTED AND MARKED "EXHIBIT 964"

MS WILSON: If we can go to your first report, which is titled, "Flood Mapping in Queensland Planning Schemes"?-- Yes.

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And if we can go to part 6 of your report, which commences on page 21? And-----?-- Yes, I have that.

-----this section deals with the assessment of flood mapping

methods?-- Yes.

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And we can see at 6.2, you deal with DFE mapping. That's defined flood event mapping?-- Yes.

And the 1 per cent AEP?-- Yes.

If I can take you to paragraph 62?-- Yes.

Your view is that, "The threshold of 1 per cent AEP has proven mostly practical and robust DFE. There is no practical reason to move away from it, although there may be some reason to reconsider it as a minimum."?-- That's correct.

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Can you provide further detail as to that view?-- Yes. The 1 per cent - what I explain in the earlier paragraph 61 is that in a planning system, there's a necessity to adopt a threshold or a line to enable the triggering of provisions in the planning system, and that means that a line that is chosen needs to be the most practical in most of the circumstances, and it's proven, it seems to me, that - throughout Australia, at least - it's been accepted by governments that the 1 per cent AEP is appropriate for that purpose. There hasn't been any document that I've read that suggests that there is something wholly wrong with adopting the 1 per cent AEP for some planning purposes. What I have read - sorry, and therefore in the absence of any striking problem, I don't see any particular reason to move away from it as one of the candidate lines of planning control, but what I have read is that there is a benefit in adopting additional lines for planning and management, which I've dealt with elsewhere in the report.

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You just referred to the term "one of the candidate lines"?-- Yes.

So, that is one of the potential possibilities of lines of control; is that what you mean when you say candidate lines?-- I think - I think I'd probably put it higher than that. I think it is one of the lines that is appropriate for adoption for planning control.

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At paragraph 64 you refer to the view that it is not necessary to smooth out AEP lines or to provide a buffer to them, and then you go on. Can you explain to me what you mean by not necessary to smooth out AEP lines?-- Yes. Elsewhere in my report I talk about smoothing out lines where there is perhaps a high degree of uncertainty about how those lines were derived; in other words, adopting the approach that the national SCARM report suggests, which is not to overstate the accuracy of lines when that accuracy doesn't, in fact, exist. So, elsewhere in the report I suggest that where a line such as that might exist, it might be appropriate to smooth out those lines, and by that I mean if you can imagine looking at a line of a local river or creek system and it's, in effect, like a very detailed contour line which goes - which has a lot of deviation, what I'm suggesting with the notion of smoothing out is that you draw a straighter line, perhaps at the

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furtherest extent of that frequency, for the purpose of triggering some sort of planning control, and what I'm saying here is that because AEP lines are determined through some scientific study, they ought to have a high degree of certainty about them, and if such a line triggers a planning control, then the authority in the components will just retreat to the scientific study anyway, so you may as well just use that line.

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Have you had the opportunity to look at Mr Greg Vann's report, "Planning Aspects of Alternative Approaches to Mapping the Effect of Flood"?-- Yes, I have.

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And if I could take you to page 18 of that report? I'm just asking you for comment, if you can?-----

MR FLANAGAN: Commissioner, can I just point out that we seem to have a slightly different report with different paragraph numbers from Mr Reynolds to the one that's coming up on the screen. I think we're around 10 paragraphs out or so.

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COMMISSIONER: All right.

MR MacSPORRAN: The substitute report corrects the paragraph numbers. The most recent report corrects the paragraph numbers.

COMMISSIONER: Have you got an instructor?

MS WILSON: Madam Commissioner, as I understand it, the subsequent report corrects the paragraph numbers and we'll provide Mr Flanagan with a copy of the latest report which has the proper paragraph numbers.

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COMMISSIONER: Are you going to need a little time with that, Mr Flanagan, because-----

MR FLANAGAN: No, I don't need to cross-examine Mr Reynolds, but I'm taking his report to another witness, so I need the right paragraph numbers. Thank you.

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COMMISSIONER: Mmm.

MS WILSON: Mr Reynolds, are you at page 18 of Mr Vann's report?-- Yes, I am.

And I'm just asking you for some comment on the view that is expressed at page 18 and page 19 of this report where he expresses some concern about the use of a 1 per cent annual exceedence probability. Have you read this section previously?-- Yes.

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Have you got any view?-- Yes. My understanding is that Mr Van is picking up on the use of the 1 per cent AEP, alternatively Q100, by itself. That's my recollection of the way his report is set out. He's going through each individual alternative, and this particular section, 4.1, is looking at Q100 as the sole line, if you like, and I agree with that. I

agree that it is problematic to rely only on the Q100 as a single line. I would agree with him about that. What I say is that the Q100 is legitimate together with other lines, and I believe that Mr Vann reached a similar conclusion.

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So, Q100 is appropriate when there is more information available on the map; is that the case?-- Correct.

And that includes the probable maximum flood, and in your report you talk about two other lines?-- Correct.

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Okay. We'll come to that in a moment?-- Sure.

If we can go back to your - oh, Madam Commissioner, I will tender that report.

COMMISSIONER: Is that Mr Vann's report?

COMMISSIONER: Exhibit 965.

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ADMITTED AND MARKED "EXHIBIT 965"

MS WILSON: It is 10 November 2011, Town Planning Report, "Planning Aspects of Alternative Approaches to Mapping the Effect of Flood". If we can go back to your report, Mr Reynolds?-- Okay.

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And the defined flood event mapping other than the AEP, you have set out your assessment of flooding - mapping these flood events-----?-- Yes.

-----from paragraph 65 to 70?-- Yes.

If I can just take you to paragraph 67? "An AEP less than 1 per cent for planning regulation purposes is far less likely to be justified and ought to be contemplated only in exceptional circumstances where there is an overriding public interest to do so." Could you just give me some assistance about what you had in mind about what an overriding public interest to do so may be?-- Yes, yes.

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I also, like Mr Vann, in this section - I'm going through each alternative, but I would acknowledge that my thought processes were dealing at the same time with contemplating these lines by themselves as well as contemplating these lines with others, and this paragraph 67 is talking about where a lower DFE would be adopted by itself for planning control; for example, a Q20 or a Q50, and that's it, and there's no other line.

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So, in terms of particularising the overriding public interest, you can't provide us with a list, so to speak?-- No. No, I can't frankly think of such a reason, but it's possible such a reason might exist, and if it does, it would

need to be some sort of overriding reason in the public interest, because the implication, of course, of adopting a single line, which is a line less than the Q100, is that it's a much more focused and lesser area of planning control for flood events. So, it's not recommended. I guess I'm just contemplating - I guess I'm accepting there might be a special circumstance, but I can't think of what it is.

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Can we then go on to paragraph 68, and that's set out. We can all see what it says. Can you just expand on this paragraph or what you are meaning in this paragraph?-- Paragraph 68?

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Yes?-- So, that flows on from the conversation a moment ago where it may be appropriate to use a Q50 or a Q20 with 2 per cent, 5 per cent, as well as a Q100 1 per cent, so - as I said here - I think I use the term - fine-tune the planning control. So, where I get to is that in the absence of hazard mapping, which is not available in many locations, there may be the availability of different AEPs and, as a substitute - where I get to later, as I say, is a substitute for using hazard mapping for fine-tuning the planning control within Q100 - I'm suggesting it might be acceptable to use Q20 or Q50 because that information might be more readily available.

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And at paragraph 69 you go on to say that, "It is recommended to provide additional AEP lines for information only, not as a defined flood event.", and if you can just go on to provide a further explanation of the use of those additional AEP lines?-- Yes. What I'm getting at there is that - and it comes together in that recommendation towards the end - what I'm getting at is that it's appropriate to consider these lines - consider whether these lines are triggering some sort of a planning control as opposed to being provided for information only. Now, that function for information only can be useful in two ways: it can be useful for development assessment because the local authority and the proponents simply have more information to be able to consider, but, of course, it can be very useful for the community in terms of setting community expectations or allowing the community to understand the dynamics of a situation. So, what I'm saying is that whilst you might choose, say, the Q100 and the Q50 - just to select two lines - for the purpose of identifying certain planning controls within the planning scheme, you might also choose to put in the Q20 or the Q2 as an information map. You might also put in some sort of depth map, I suggest, for information purposes. So, I don't see anything wrong with providing more information about flood systems. What we need to be careful about in the planning system is how many lines are used to actually trigger mechanisms under the planning system.

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And how many lines do you suggest is appropriate?-- I suggest, in effect, three.

And what are those lines?-- In the middle, the 1 per cent AEP; inside that, the hazard line between low and high hazard within that AEP, the 1 per cent; and outside the 1 per cent AEP, the PMF.

And how would those three lines be used in a planning scheme? How would you see those three lines used in a planning scheme?-- It would be a sliding scale of control, and that control could derive from the effect upon use rights in terms of levels of assessment, what type of application you need to make, but they could also trigger requirements under codes about how development ought to proceed. So, for example, within the high hazard area, there may be very stringent controls on all of them. Certain development - most development may be strongly discouraged within the high hazard area. Between that high hazard area and the 1 per cent AEP - what I call the flood fringe, but others call other things - may call it other things - it may be that certain types of development are acceptable, but that development ought to only occur with certain conditions, and then between the 1 per cent AEP and the PMF, some local governments may chose to effect development in no way. They may choose to provide that line purely for information only. Other local authorities may choose to trigger development within that area, to set floor heights, for example, for emergency services and for major public facilities, they may use that area as a trigger for setting the flood immunity of certain roads and road hierarchy - the higher level roads for evacuation, they may use that area between the 1 per cent and the PMF as some sort of a trigger within an operational works code for filling, for example.

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The use of a PMF in a planning scheme, is that for information only, or does it have more value in the planning scheme than that?-- I think it is up to the local government to decide. I think it can be either, but I think whether it is for information only or whether it is used to trigger some sort of planning control, I think it should be in the planning scheme.

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Can we now go to paragraph 81 of your statement - of your report?-- I'm sorry?

Paragraph 81 - or 6.6, which is contained in paragraph 25?-- Yes, I have that.

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In this part of your report, you discuss the QRA interim flood planning maps?-- Yes.

You particularly mention the utility for low growth councils?-- Yes.

Are you referring to the QRA's use - the QRA maps being used in urban or rural areas?-- I hadn't, in my mind, when I wrote this, drawn a distinction about that. I would have been thinking of whole local government areas where they may have little information otherwise.

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Sorry, I didn't quite catch that?-- I would have been thinking of whole local government areas where they would have little information available other than these maps.

Have you got any view about the use of these maps in urban

areas?-- Yes, yes, I do. At the time - at the time I wrote this, I hadn't had the opportunity to interrogate the QRA mapping in any significant detail. What I had done is I'd referred to the process that the Government had outlined they were undertaking in preparing these maps, and I understood that they were strongly related to aerial photography and then adjusted in certain ways. I thought that was a sound approach and I thought that was very useful, and I can understand that that could be done as a desktop exercise. Since that time, I've read the transcript of Mr White's evidence where there was some discussion about Chinchilla and some anomalies, and I've also myself had a look at the town of Rockhampton, so I had a look at the QRA maps and I had, in my report in the attachments, a hazard map from the Rockhampton Planning Scheme. There's also a map on the Council's website that I had a look at which was a certain flood event. So, I've had a chance to have a look at that, and there are anomalies in urban areas, certainly in those two, it seems - in Chinchilla and in Rockhampton. The anomalies are not wildly inconsistent, but certainly - for example, in the case of Rockhampton, it would be parts of suburbs that are included in the QRA area, which is outside the Q100 or whole suburbs. That caused me to go back to the model code, which is in the temporary State Planning Policy, and have a look at the way in which these maps ought to be used, and I would say to the Commission that since having carried out that exercise, I do think that some caution does need to be applied to either the way in which those maps are drawn or the effect that those maps will have in a code. It seems to me that certainly some caution needs to be applied.

Okay.

COMMISSIONER: What is it about the way that they're to be used in the code that would concern you?-- Well, Madam Commissioner, the temporary State Planning Policy includes a number of very sensible performance criteria, and then it includes a number of acceptable solutions. The references - some of the acceptable solutions are a little extreme, things like, "Don't build within the QRA flood mapped area." So, for example, a whole suburb has the - has that provision - that acceptable solution. The way planning documents operate is that's not the end of the matter. You need to then just refer to the performance criteria and identify it to the local government that that's a little extreme and you can proceed, but it clogs up the planning system with inefficiency. The second thing about the QRA mapping is that it's intended to - as explained in the temporary State Planning Policy documents - it's intended to be available for triggering building code matters, and that's a little more problematic because if you have these large areas which are - which haven't been resolved to a finer degree, then to automatically trigger some mandated requirement under building codes needs extreme caution.

Right, so either the mapping or the code needs refining?-- Correct, one or the other, and I think the mapping, as it stands, you know, it could be useful, it's just that what it calls up needs to be drafted in a particular way to fit and

sit well with the uncertainty that those maps might bring.

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All right.

MS WILSON: Your report goes on to discuss areas where there is no mapping available?-- Yes.

And if we can now go to paragraph 91 of your report?-- 91.

91?-- Yes, I have that.

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91(a). If you could just provide some further explanation as to what you're meaning in that paragraph?-- Yes. What I'm getting at there is that I don't think - it's really the last sentence that - the last sentence that says, "That is, no map need be provided", which I guess is the crux of that subparagraph. I think where there isn't any mapping available and there's no finer resolution that can be brought to bear as to areas that may or may not be affected by flooding, I think that it isn't necessary to produce a map which shows over the whole local government area that is the case. It's just - it's just cumbersome and unnecessary. In that case, it may be sufficient to introduce flood management provisions, which would be fairly generic under that scenario, but to introduce flood management provisions just within the codes of the scheme themselves, they may sit in some sort of constraint code, they might - which might deal with other matters - they might sit in a dedicated flood code, or they may repeat and sit within a residential code, an industrial code and other codes. So, what I'm getting at is that I think some flexibility ought to be brought to bear in drafting the scheme where there simply isn't any mapping to trigger the controls.

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And 91(b) goes on to where there is some mapping for local government area, but in some parts there is no mapping?-- Yes.

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And your recommendation there is to - where there is no mapping to actually state, "There is no mapping here"?--
 Yeah, that's correct. It's - it's an important scenario because it will be quite common and the problem is that when you know something about some place that heads you down a path of how you draft, so that you might have a flood code and you might have some more sophisticated provisions. The danger, of course, in heading down a path of sensible control is that you kind of forget about the areas that you know less about and this is very common in planning schemes in Queensland. So what I'm saying is that when you do know something about - when you do have some resolution about where the flooding might occur you shouldn't forget about those areas where you're not so sure it might occur and you need to still include some sort of planning control over those and because you have to use a map to deal with the areas you do know about it's appropriate to use the same map to identify the distinction between those areas that you don't know about.

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And for the areas that you don't know about, then how would the planning control be determined in those areas?-- The - what I suggest in here is that the - there may be some sort of a performance criteria or acceptable solution that is carefully drafted such that the initial test is not overly onerous to establish. It might be that within a planning scheme policy of the planning scheme there is a standard basic requirement for information that is appropriate to be submitted with an application, so that the local authority can have a think about whether this allotment is free or - free or - free or affected. If that - after that first less onerous assessment if the local authority deems that there might be some concerns then perhaps these - this planning scheme policy might include a more onerous, if you like, set of information requirements for the preparation of some sort of a study or further information that might require some sort of technical consultant expertise.

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You provided some recommendations in your report and at section 8 you go through your suggestions for implementing the recommended approach?-- Yes.

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Can I ask you this: could the mapping that you proposed be incorporated as part of an overlay the Queensland Planning Provisions?-- Yes.

Is that the best way to proceed?-- Yes.

Why is that?-- Well, the first reason is that all new planning schemes in Queensland will be following the format of the Queensland Planning Provisions. So the intention of the Government is to seek some consistency. So it's appropriate that within that - it's appropriate that the desirable approach tries to work with the Queensland Planning Provisions and as necessary the Queensland Planning Provisions should be amended, if necessary, to reflect that desirable approach. So however you get there the Queensland Planning Provisions are an appropriate place to try and set down the basic method or framework for these provisions. Now, you need to be cautious

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because there's many planning schemes in Queensland that are existing and it might just be modified or amended in less significant ways, and those planning schemes follow another format. So the method, whatever the solution is, also needs to be adaptable and able to be adopted by existing local governments that do not operate QPP compliant planning schemes.

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We can now go to your second report which discusses building controls in flood hazard areas?-- Yes, I have that.

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And your report addresses various questions that were posed?-- Yes.

If I can go to question 1, and you are asked there to set out advantages and disadvantages of incorporating building controls in various - various statutes, codes and regulations. Paragraph 5 seems to me to be the - to address the crux of the question?-- Yes.

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That is whether, with regard to flood and controls it is appropriate to contain it in building codes as opposed to a planning scheme and including a temporary local planning instrument?-- Yes.

And your view is that it is a very complex issue?-- Yes.

And you set out a number of complex issues that apply?-- Yes.

Now, if I can just take you to a couple of those issues that you set, out and whilst you have set them out as a list you go on then to provide further explanation to your views as to those issues?-- Yes, I do.

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So if we can go to paragraph 7?-- Yes.

And if I can just get further comment on your view that unless there are unlikely to be adverse planning consequences building matters ought to be contained within building codes for private certifiers to process. The relevant term in that sentence is "adverse planning consequences". What do you mean by that?-- They're the sorts of matters that I discuss under "I" which are matters that might affect amenity and that might include visual amenity in terms of effects upon street scapes, things like that. It could include visual amenity or enable the privacy with respect to where buildings are sighted on an allotment. It could include character areas or heritage buildings with respect to the building materials that might be employed in renovating or updating those buildings which could not only affect heritage buildings, but also its character precincts. It might affect - it might be the effect that how to build floor levels and the setting of those levels might have on any of those - any of those aforementioned issues. So, you know, there's a number of - there's a number of aspects of building control that can influence matters which are central to the town planning system.

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Issue "B" in that list is a mechanical consideration relevant

to how building codes are drafted and you further address that issue in paragraph 8 of this report. Your view is that at present the draft QDC provisions for flooding provide in - too much autonomy for private certifiers?-- Yes.

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Can you expand on that?-- Yes. My understanding of how it's drafted is that there are two things that trouble me, and I emphasise this as - on the basis of which I read it and understood it. The first is that there is a provision in there that seems to allow for certifiers to determine what might be reasonable protection in certain circumstances and because of the issues that are so complex here and how they can interface with the planning system, for example, it troubles me that such a nebulous term is employed in the document. The second thing that troubled me from my reading was that the - it suggests that a certifier has some power to elect to refer a building application to a Local Government as a referral agency, and my understanding of the reading is that that seems to be at their election. If that interpretation is correct it - again, it troubles me. It troubles me because it's - it lacks specificity about when that referral might be made and you could get inequity and inconsistency and local governments may or may not have an opportunity to have input with respect to some of these planning considerations and, secondly, it provides an - it provides a route - if I'm wrong about that interpretation it provides a route for the proponent to address all of the acceptable requirements so that there's no prospect of the application being referred, perhaps, to the local authority. The outcome may not be what the local authority would have wanted.

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If we can just keep on moving through some of these issues that you raise. In paragraph 12 you say that, "The draft Queensland Development Code for flooding and the Draft National Standard are likely to impose requirements that are unworkable when combined with the existing mapping figures in many Local Government areas." Have you got that, paragraph 12?-- Yes, I'm just going to quickly read that, if that's okay. Yes.

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Can you further expand on that for us?-- Yes. My understanding of the intent, the Government's intent, is that it will be at the Local Government's election to identify an area by map or - I understand - without a map that gives effect to the proposed QDC provisions, and because of the uncertainty of the mapping that's provided by the - for example, by the QRA mapping, but we don't need to leave it there. It may be the uncertainty that the Local Government has about their own mapping. It's likely, in my view, that many local governments will simply opt not to invoke the QDC requirements because of the impact upon the community in terms of cost ultimately to carry out any building work within their locality.

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You recognise that consistency in building controls across the state is desirable?-- Yes.

But you also mention that there will be control issues that a

Local Government wishes to apply to a local solution?-- Yes. 1

How then can a Local Government best do that?-- I think - as I have said in a series of questions set out in this report, I think there needs to be some agreement about those things that are less contentious and less likely to give rise to local planning considerations and to try to get those standardised. There ought to then be remaining a set of issues that might be of more interest to Local Government, and I suggest at paragraph 29 on page 11 that those things might be floor levels, materials, fill levels, things like that. With respect to those things that Local Government is more concerned about, I think it's okay for the State to identify a standard provision, but there needs to be some mechanism for Local Government to have some influence on how it operates in their local area. In other words, it's elective because some local governments, perhaps many local governments, more remote local governments or low growth Councils might choose just to accept the standard, but others with more resourcing, perhaps more urban areas, perhaps higher growth, those Councils will want to have an influence on those things and I just think there just needs to be a mechanism to allow them to do that. 10

So to summarise your view is it the case that core elements can be contained in the Building Code that can apply to all local governments, but that local governments should have the ability within their own local planning schemes to regulate their own area?-- Yes, and those - that flexibility and where that resides, you know, needs some careful thought. I mean - and it might be - it might be it's within the QDC, itself. It might be it's in some sort of state planning regulation. It might be - well, it's likely to be one of those things. It might be in some relationship with new format planning schemes under the QPP, and mandatory provisions that might exist there. For example, what might be - one scenario might be that the QDC contemplates three suites, suites of building control. One might be very similar to what they're currently proposing which is based on national standard, call it, with respect to velocity and detailing mathematical formulas. The next one down might be something more like what Brisbane City and Ipswich have in their temporary local planning instruments which is, sort of, less scientific, say what they mean and they're easy to - you understand them, but require local assessment. And then the next level down might be just, for example, the performance criteria from the draft - sorry, the Contemporary State Planning Policy Model Code, for example, just the performance criteria; really informal statements. What the QDC might do is say, depending on how good your local mapping is at your local circumstance you might want to choose one of these, for example. I'm just offering this to illustrate the point how there might be different alternatives, and if those - and if you could choose which one of those you might run with then those local governments that are nervous about their lines, the QRA lines or their flood lines, they might choose one of the lesser options, but they've still got something which they don't have today and those that have all the hazard information available might go for the high level formula - formulae approach because they're 30 40 50

happy with that, but I think Local Government needs to be involved in that process under that scenario.

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I have no further questions. Thank you, Mr Reynolds.

COMMISSIONER: Mr MacSporran?

MR MacSPORRAN: Thank you, Commissioner. Mr Reynolds, just a couple of things. Could you go to section 8, point 5 of your report, page 33 I think it is. This deals with the topic of referrals under SPA?-- Yes.

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I just want you to refer you to some evidence Mr White gave earlier in this bracket of evidence. Can you bring up, please, page 4624 of the transcript; 4624, the 7th of November, Monday. I think you said earlier you read Mr White's evidence?-- Yes.

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You have probably seen this?-- Yes.

But we will just bring it up, so you can be aware of the passage I'm wanting to refer you to. Thank you. You see it's about - between lines 1 and 25 or thereabouts?-- Yes.

Dealing with this question of referrals?-- Yes.

Referral agencies?-- Yes.

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I just want to ask you: do you agree with what Mr White says there?-- Yes, I do.

Thank you. Now, you spoke about - in your report in here today about the work done by the Queensland Reconstruction Authority?-- Yes.

And you referred to that at section 6.6 of your report and you said that since writing the report you've done some further work and you have some reservations about that grade work?-- Yes.

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And you mentioned, having read Mr White's evidence about the Chinchilla example, which shows some anomaly in the mapping, et cetera?-- Yes.

Tell me this: when did you read Mr White's evidence to ascertain that anomaly? Obviously after Monday. He gave the evidence on Monday?-- Yeah.

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Some time this week, anyway?-- Yeah, early - days ago, yeah.

But this week?-- Yeah, yeah, I think so.

Tell me this: have you seen the statements that Mr Nelson, Mr Brendan Nelson, made on behalf of the Reconstruction Authority?-- I have seen his transcript. I can't recall if I've read his statement.

When did you see his transcript? Do you remember when that was?-- Before I wrote this.

Before you wrote your report?-- I think so. Yes, because I call it up in here.

Your report is the 19th of September; is that-----?-- The first version is the 25th of October.

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COMMISSIONER: So that would be the earlier set of evidence that he gave, not this week obviously.

MR MacSPORRAN: Yes.

WITNESS: Yes.

MR MacSPORRAN: So you haven't seen Mr Nelson's evidence from Tuesday this week?-- Oh, no, no, no, I didn't know he gave evidence on Tuesday.

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Yes, he gave evidence this week and, in fact, went through this whole process of the work he had done and utility of it and so forth?-- Yes.

And specifically spoke of the so-called anomaly in respect of the Chinchilla matter, but in any event you haven't seen any of that?-- Excuse me?

You haven't seen any of that evidence?-- No, I haven't no.

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Thank you.

COMMISSIONER: Mr Dunning?

MR DUNNING: Commissioner, we have no questions, thank you.

COMMISSIONER: Thank you. Mr Flanagan?

MR FLANAGAN: No questions, Commissioner.

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MR URE: I have nothing, thank you.

MS McLEOD: No questions, thank you.

MS WILSON: I have no further questions. May Mr Reynolds be excused?

COMMISSIONER: Yes. Thank you, Mr Reynolds, you're excused.

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WITNESS EXCUSED

COMMISSIONER: That might be a convenient time to take break the break, actually. We will come back at 10 past by clocks

that are actually running on time; probably a little earlier
by that clock. Thank you.

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THE COMMISSION ADJOURNED AT 10.51 A.M.

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THE COMMISSION RESUMED 11.08 A.M.

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COMMISSIONER: Yes, Ms Kefford?

MS KEFFORD: I call Paul Grech.

PAUL ANTHONY GRECH, SWORN AND EXAMINED:

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MS KEFFORD: Is your full name Paul Anthony Grech?-- Yes.

And you're a town planner of the New South Wales and principal of Grech Planners?-- That's correct.

You provided a report to the Queensland Floods Commission of Inquiry. Could I ask you to have a look at this document, please. Is that a copy of your report?-- Yes.

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And are the opinions expressed in the report opinions which you honestly hold?-- Yes.

I tender that document.

COMMISSIONER: Exhibit 966.

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ADMITTED AND MARKED "EXHIBIT 966"

MS KEFFORD: Now, if I could just ask you a few questions to clarify a number of statements that you make in the report and if I can, firstly, take you to paragraph 7.14 which is on page 10. There you note that the, "Q100 standard has traditionally been considered an acceptable level of risk for most forms of development in Australia", and in the last sentence you state that, "While such an approach based on probability of a singular flood may acceptably manage risk there's no certainty of this without at least some consideration of the full range of risks associated all potential floods." What do you mean by the "full range of risks"?-- The full range of risks or the full range of floods

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Is that a probability?-- The full range of floods reflects a consideration of full range of probability of floods, but looking at each of the floods having regard to their hazard and where they exist, what consequence they may have in regard to existing and future land uses.

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So does that involve considering characteristics of the flood not just the probability of the flood?-- Yes, and also the land use it may impact.

If I could just also ask you a few questions about the State Planning Policy 1 of 3 and at paragraph 8.12 you explained that, "Due to unreliable statewide flood data, the State Planning Policy applies only where a local government has identified a defined flood event.", and you then suggest that a temporary approach could be followed involving the adoption of a temporary local planning instrument prior to making or amending the planning scheme. Could you just explain what might be done to address flooding in this temporary - what you had in mind for a temporary solution where there is no detailed flood data?-- In my experience where there is no flood data to trigger the need for a flood assessment it may nonetheless be identified as something necessary during a development application assessment process. So the issue then becomes once identifying that there is a flood risk associated with a particular land and development proposal on that land, what do you do about it? What controls do you propose? So my suggestion is that you could have a generic set of codes - generic code to deal with situations that need to be identified as - as a consequence of a development application process. So the flood study might be required as part of a development application process. It may identify the land being affected by certain floods with certain characteristics which then may trigger the need to impose controls.

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In paragraph 10.10 of your report you say, "An important consideration", that's on page 22?-- Yes.

That, "An important consideration for the purpose of planning is to develop a system that allows for the application of flood related development controls where no mapping exists." And you highlight that, "Due to extensive resources that might be required to undertake flood mapping there are occasions where a property may be suspected of being subject to risk where no mapping or other information exists." Is this the type of scenario that you were just talking about where the possibility of flood risk is identified only through the development application process?-- Yes.

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In 10.12 you suggest that in the absence of flood mapping it might be prudent to very broadly map flood investigation areas. In terms of determining what flood investigation areas might exist, how would you go about that if you have no information about the defined flood events?-- In a situation such as Queensland where vast areas have not been mapped at all, so very little information may exist, something such as undertaken by the QRA in terms of what I would describe as a rapid assessment technique for identifying areas of potential flood risks that would - would generate a need for further study could be helpful. I have some concerns about that mapping itself, but that concept of identifying where to focus attention in terms of doing flood studies or to provide a mechanism to consider certain types of development because of their scale or the nature of the land use in more detail would be a good thing.

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Two questions about that. In terms of the QRA maps you said

that there is potential for those to be used, I take it, as identifying these flood investigation areas. Once a flood investigation area is identified what do the planning documents say about that or what do you envisage would be done about the flood investigation area? How would the QRA map be used if it was used as a flood investigation area map?-- The QRA map in my assessment augmented to be something more than what it is or what they are, could be used in two ways. Firstly, in the strategic planning level it may trigger a need to consider the need to undertake a flood risk management study for a development of a certain scale, like a large green fill residential development or a development of a certain type residential aged cares persons accommodation or a child - child care centre or something of that nature where all - or even critical utilities that are significant in terms of being necessary as part of emergency management measures during a flood event. Those - those sort of uses involve a strategic planning level may require further investigation because they're located within the flood investigation area. So a study to determine whether a zoning that permits or removes that permissibility is addressed and then the development application level the same, but the type of study might be a little different. It might be a flood study to determine the nature of the flooding or the flood risk for those types of uses after which a generic code can then be applied to determine the appropriate controls to apply. Now, I understand that there is a need to determine what the - what triggers those particular land uses because of scale or nature and there needs to be some balance between achieving - capturing as much development that could cumulatively introduce substantial additional development at risk compared to bogging down the planning system and there needs - that's a balance, I guess, that needs to be worked out that I can't do now.

So your answer talked about using the QRA maps as a trigger for a requirement for further investigation. What about the idea of using the QRA maps as a trigger for imposing certain requirements or standards on development. Do you have a view about their ability to be used for that purpose?-- I find it difficult to understand how they could be used at a development application level. That - for various reasons. Firstly, they're maps produced not based on probability which is, I guess, the common best practice form of flood mapping using recognised flood modelling techniques. They don't - sorry, I lost my train of thought. That they-----

Perhaps if you explain - there is a code that's been produced that is intended to be used with the QRA maps. Have you had an opportunity to look at that model code?-- Sure. They - sorry, just to finish off with that answer, they don't provide levels. For example, so to understand what to do with a development once you are - that development is identified as being within the flood investigation area, I find it difficult to understand what - what to do. I've looked at the code that went with the mapping and I think there is an example of why that can be effectively dangerous in that there are inconsistencies with some of the controls arising because of

lack of information. For example, there is a requirement to impose elevated floor levels for the habitable floor level of residential dwelling. At the same time as requiring direct and a clear evacuation routes for pedestrians and vehicles. The two, in my experience, can be quite incompatible unless you actually know what level of flooding could occur on that land and the nature of the flooding, the availability of warning time and the rate of rise of that particular flood. So the problem could arise, for example, is that you're telling someone to put a dwelling and to raise their floor level creating an expectation that that's providing some level of safety. If someone is resisting to evacuate because no-one's telling them to evacuate or there's no cues to tell them to evacuate, they continue to stay in a dwelling to a time where evacuation becomes no longer possible because the waters have risen to cut-off that evacuation route which turns evacuation into a rescue situation which is undesirable. Those sorts of considerations have been ones that have been raised, in my experience, in the past projects that I've been involved with, by emergency management agencies.

There was a lot of information in the answer that you have just given. If you could break it down what I understand to be a few of the propositions that flow from your answer and if you can confirm if I've understood it or not. The QRA maps don't contain information about probability of flood?-- Not to my understanding, that's correct.

And they don't contain information about were a flood to occur in those areas mapped yellow they don't contain information about what level the flood might reach?-- Correct.

And you talked about the code, the model code that's intended to be used with the maps containing a requirement with respect to elevating floor levels within houses?-- Yes.

And so is there a difficulty that arises in picking what level to build the floor to when there's no levels associated with the maps?-- Yes.

And one of the difficulties that might arise is a perception in the minds of the home owners who have been required to raise their homes, a perception that their home has been raised to a level where they are safe to stay within a home during a flood?-- Yes.

Is that - that's the situation that you were-----?-- Yes.

-----explaining. So that they might have an elevated home, that the stairs end up being cut-off and then the water's come into the home and they have no means of getting out other than presumably by boat or something like that. Is that the scenario you were trying to describe?-- Yes, in some situations the flood level could rise - raise - rise above ceiling level in some flood plains.

And how then does that potential difficulty - you made reference to the fact that there's a potential inconsistency

between those requirements about floor levels and the requirements in the model code about evacuation routes. Can you explain that concept in a bit more detail?-- Well, I don't see the point of identifying an evacuation route with no - with no accompanying mechanism to provide for an evacuation. If - if there is no evacuation strategy for an area then the normal way that someone might decide to evacuate is the cue is taken from the actual flood itself. Water starts to lap at someone's front door, they decide it's time to go. But if you don't know whether you are going to be safe in the dwelling or not, then that cue is no good to you.

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And that problem arises, does it, because there is no information about the levels of the flood?-- That's correct.

And because of the potential perception that arises as a result of purporting to deal with flood without that information?-- That's correct.

I think I understand. Were you present when Mr Reynolds was giving evidence?-- Yes.

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He in his evidence talked about the fact that he perceived there might be inability to use the QRA maps together with a flood code or something of that nature to regulate development, but it's a case of needing to adapt the words in the code or the level of detail in the map, one of the two needs to change in order to be able to utilise the information. Do you agree with what he was saying about that?-- In my assessment I don't see how that sort of mapping can be used in the development assessment situation.

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And so is it fair to say from your answers that you only see the QRA maps as useful for identifying areas that might be subject to further investigation?-- Yes.

And not for use at all in - as a development control?-- No. That's correct.

Now, in your report you also address the concept of appropriate development in the flood plain and on page 29 of your report you include figure 7 which I understand has been reproduced from a document entitled "Managing Flood Risk Through Planning Opportunities", is that-----?-- Yes.

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-----the source of the document? Can you just explain what - how this figure might be used in - how this risk table might be used in a planning document?-- Certainly. I - I was involved in the development of the concept and I have used it probably 20 or more flood risk management plans and probably about 30 development codes for different councils. What it does is provide a structured manner in which to translate a risk management approach to flood risk management into planning outcomes. So the first thing you can see that the table does, it divides the flood plain into areas of different risk and that - that is done through a process of analysing the different nature - nature of different floods and different frequencies and other issues such as evacuation

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capability in particular. Then - sitting underneath each of the risk categories - and there doesn't have to be that many categories, but-----

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Do you think there's utility in having that many categories?-- Very rarely. In this case it was prepared specifically for the Hawkesbury Nepean Valley where the range of floods or flood depths cross the spectrum of potential floods was extraordinary. The flood - flood depth range was in the order of between 100 year flood and a PMF flood there was something like 11 metres of difference in height floods. Between the 100 year and a 200 year flood it was two metres of depth difference. So it was extraordinary circumstances.

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What typically do you think would be - what would you typically think would be a workable number of flood risk band?-- I commonly use three; low, medium and high.

When you say you "commonly use three", have you had experience using this flood risk band and this matrix in other planning documents?-- Certainly.

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Is it commonly used throughout New South Wales?-- Well, it's something that I've been involved in pioneering, but now has been applied to some 30 local government areas, most of which I've been involved in, probably more now because I know of some councils that have adopted it in regards of my involvement.

Could I just show you a copy of the document which I understand the figure is reproduced from and if you could just confirm. Is that a copy of the document from which this figure-----?-- Yes.

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-----has been produced? I tender a copy of that document.

COMMISSIONER: That will be Exhibit 967.

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ADMITTED AND MARKED "EXHIBIT 967"

MS KEFFORD: In terms of the use of this flood matrix, flood risk matrix in a number of planning schemes, has there been a central planning document for the State that picks up the concept and explains how it might be used or encourages local governments to use it?-- The flood plain development manual which has gone through three iterations since 1986, the latest version being 2005, outlines a process to undertake flood risk management but doesn't specifically - well, specify any particular outcome in a format such as this, but when we first developed it and when I say "we" I mean myself and Mr Drew Bewsher, we pioneered it particularly for this - the unusual circumstances of the Hawkesbury Nepean and did get recognition from the relevant department that it was exactly what was intended as an outcome associated with that process.

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Could I ask you to have a look at this document, please, and if you could just confirm whether that's the Floodplain Development Manual to which you were just referring?-- That's it, yes.

I tender that document.

COMMISSIONER: Exhibit 968.

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ADMITTED AND MARKED "EXHIBIT 968"

MS KEFFORD: Do you think it would be worthwhile for Queensland to work towards producing a publication similar to that for use in dealing with flood risk and planning?-- Yes, it could be something specific to Queensland or it could be Queensland's contribution to the review of the SCARM document which is not dissimilar to that document - the New South Wales Floodplain Development Manual and the SCARM document, which is a nationally-produced document that I refer to and also referred to in the State Planning Policy-----

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The SCARM document is referred to in the State Planning Policy?-- That's correct - do effectively provide the same processes, and this diagram is about illustrating a process - or how a process may be followed, not the actual outcome.

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So, in that sense, it might be - the time might be better spent having input into SCARM - the review of SCARM?-- Yes, that, to my understanding, is under review at the moment and intending to be finalised, I understand, next year. There are a number of - that sort of document would be consistent with producing an outcome that's reflected in that diagram for land-use planning purposes.

You also mention in your report the New South Wales publication, "Reducing Vulnerability of Buildings to Flood Damage". Can I ask you to have a look at this document, please? Is that the document referred to in your report?-- Yes.

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I tender that document.

COMMISSIONER: Exhibit 969.

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ADMITTED AND MARKED "EXHIBIT 969"

MS KEFFORD: You say that in your report that although that document is not in a format which allows it to be referenced as a technical specification for construction design, it could

be used as a basis to augment existing local controls. How do you see that document as being able to be used - like, what do you envisage?-- You could derive from that a schedule of suitable building materials and methods which could be used as a means of conditioning development. Typically, a control may be where development has a floor level that is raised to reach a particular level of protection, then the level below it may be considered non-habitable but still may have some use, then that area of the building may be subject to being built in a certain way with certain materials and with certain ability to withstand the forces of flood water and also to be able to be cleaned out after a flood. That document provides quite practical measures to assist in recovery after a flood and also some very simple but helpful building techniques that would minimise the need to reconstruct parts of a wall, for example, because they used material that's not very resistant to being inundated.

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Thank you. I have no further questions.

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COMMISSIONER: Mr MacSporran?

MR MacSPORRAN: Thank you, Commissioner. Mr Grech, your report was furnished on the 15th of October this year?-- Yes.

Thank you. And you say at section 5 on page 6 that one of the limitations you refer to in section 5.3 is that the report does not review recent draft policies released during the conduct of the Commission of Inquiry, and you refer there to the work of the QRA?-- That's correct. This report does not cover that, yes.

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No. You have since undertaken that review, have you?-- Yes, I have. I had actually seen the documents, but I was just in the throes of finalising this one.

Yes?-- So, this one went out without any documentation associated with that.

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Yes. So you didn't do another report reviewing the QRA work, you just took it on board?-- I wrote - not necessarily a report, but a document which provided comments in regard to those documents.

And you provided that to the Commission?-- I have, yes.

Do you have a copy with you at all?-- I do.

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I wonder if we could have a copy of that, Counsel Assisting? When did you provide that, Mr Grech - the comments? When did you provide that?-- I expect before the 15th, but I-----

Before the 15th?-- Well, if I've - well, I don't know, actually, because it could have been after the 15th. All I know is that I reviewed it before then. Whether I had written the document by the time I'd finalised this report, I'm

actually not quite sure, but perhaps my-----

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Just bear with me for one moment. I'm sorry, I was just distracted for a moment. Did you say that you did this draft of the review of the QRA work before you finalised your report for tendering here?-- I did.

In fact, this one I've just been given is dated September 2011; is that right?-- That's correct.

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Can you tell me why it was that it didn't end up in your final report - your October report that was tendered here?-- I just think simply because I hadn't been able to get any response in regard to comments on this.

Response from whom?-- The Commission.

So, you gave it to the Commission in September while you were preparing your final report for October-----?-- The final-----

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-----and you got no feedback on your draft review of the QRA work until after your report went in?-- That's correct.

So, when did you start to get feedback from the Commission about this draft?-- There was no formal feedback until I had a meeting with some of the lawyers yesterday.

Yesterday. I see. And did you then adopt your draft as being what you wanted to say today?-- Well, I didn't adopt it, I just-----

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Confirmed it?-- That's always been my view.

Yes, all right.

COMMISSIONER: Mr MacSporran, do you want that as an exhibit, and if you want to respond to it any way, you can do that later, perhaps.

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MR MacSPORRAN: Yes, I would appreciate the opportunity at some point, that's convenient to yourself, to deal with it.

COMMISSIONER: All right. Do you need to look at it now for cross-examination?

MR MacSPORRAN: I don't think so, no. It's a bit late for that, with respect. But I would like the item tendered and I would like the opportunity at some point to deal with it.

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COMMISSIONER: All right.

MR MacSPORRAN: I'm assuming with all of these reports and the statements to be tendered shortly in bulk, there'll be an opportunity to deal with any matters that arise.

COMMISSIONER: Address it in writing. Absolutely.

MR MacSPORRAN: Thank you.

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COMMISSIONER: 970, then, that document.

ADMITTED AND MARKED "EXHIBIT 970"

COMMISSIONER: Mr Dunning?

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MR DUNNING: Thank you, Commissioner. Mr Grech, my name is Dunning. I appear on behalf of the Brisbane City Council. You have had, I gather, an opportunity to read the letter from Mr Bewsher, which is now Exhibit 961?-- Yes, I have.

Thank you. Mr Bewsher is somebody who you would consider expert in this field?-- Yes.

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All right. You are in general agreement with the contents of his letter?-- Yes.

All right. It's apparent, if we - you deal specifically with my client - well, from paragraph 8.19 and onwards in your report. Now, it's apparent from that that the views you formed were without the benefit of having the opportunity of reviewing the relevant documents from the Council, agreed?-- Certainly I hadn't reviewed a number of documents that Mr Bewsher had identified.

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And I was about to say you certainly hadn't had an opportunity to look at those documents - or certainly many of them - that are Annexure A to his letter?-- That's correct.

Thank you. Now, to the extent that you raise concerns about the absence of documents, I gather you'll concede that Mr Bewsher has been in a better position to assess those things than you have because he has had access to more material?-- Yes.

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And you would certainly be content, wouldn't you, for what you had to say in respect of Brisbane City Council to be read together with what Mr Bewsher has had to say in his letter, which is Exhibit 961?-- I think what we both say is consistent. I guess the only point of difference - not difference - I guess the only qualification I would make is that I - my conclusion is that I haven't seen - and I still don't think there is one document that encapsulates what might be described as a flood risk management study or plan - although the Task Force, as I say in my report, identifies that there is an intention to prepare that sort of document.

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All right. Would it be fair to say that the sole qualification then you'd put on what appears in Mr Bewsher's letter is that you're not saying that the content's not there,

but you think it should be located within the one document?--
 I haven't had the opportunity to read those other documents.
 I don't know whether the content is there or not. I just
 accept that there is information that contributes to a broader
 flood risk management understanding, but I don't know how they
 all work together.

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All right. And that's purely because you haven't had the
 occasion yet - or you haven't had the occasion to look at
 those documents?-- That's correct.

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Thank you. Thank you for your attention to my questions.
 That's my cross-examination, thanks, Commissioner.

COMMISSIONER: Mr Flanagan?

MR FLANAGAN: Mr Grech, I wish to ask you some questions about
 the use of a probable maximum flood event line - the PMF - in
 the planning context?-- Yes.

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In your glossary at page 55 of your report, if you can turn to
 that, the PMF is defined as the largest flood likely to ever
 occur. The PMF defines the extent of flood-prone land or
 flood-liable land; that is, the floodplain?-- Yes.

You also refer in your report at page 13 to the definition of
 PMF given in SPP 1/03 as, "The largest flood that could
 reasonably occur at a particular location resulting from the
 probable maximum precipitation. The PMF defines the extent of
 flood-prone land. Generally it is not physically or financial
 possible to provide general protection against this event."
 The definition in your glossary refers to, "The largest flood
 likely to ever occur", whereas the definition in the SPP
 refers to the largest flood that could reasonably occur in a
 particular location. Do you discern, for any practical
 purposes, a difference in these definitions of PMF?-- Not
 really.

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Not really. All right. May I then refer you to page - sorry,
 paragraph 72, page 23 of Mr Reynolds report?-- Sorry, what
 paragraph?

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Paragraph 72, page 23. Here he says it is a term - "PMF is a
 term defined and used in the National Best Practice Guideline
 SPP 1/03, the recent 2011 advice of the Queensland Chief
 Scientist and elsewhere in Australia. It is described as an
 'extremely rare event' and defines the extent of flood-prone
 land."?-- Yes.

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You agree a PMF is, as described there, an extremely rare
 event?-- Yes.

What is flood-prone land in this context?-- Flood-prone land?

Yes?-- Any land that could be subject to being flooded.

In a probable maximum flood event?-- By definition, if it's - if it has any potential of being flooded, it can be flooded, so the PMF basically just defines the potential for it to be flooded or not.

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All right. Is the term "flood-prone land" a recognised and accepted defined term for planning purposes?-- In my experience, it's consistent across states and local government jurisdictions.

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COMMISSIONER: So, how is it used? As land that could conceivably be flooded in an extraordinary event, or in the more usual use, which would be given to being flooded?-- Sorry, can you ask the question again?

Well, as an ordinary person, if somebody said to me, "That land is flood prone.", I would think, "Oh, flood comes up there every so often.", but the way it seems to be used - in the context, at least, of the probable maximum flood - is as land that could, in the bounds of imagination, be flooded if you had an extraordinary event. It can be land where flooding would be vanishingly rare, but it's possible?-- Yes, and they do occur.

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Yeah, but is that the way it is used - that second way - consistently in land planning?-- It defines the extremity of what needs to be considered for the purposes of working backwards to do a flood risk management assessment.

Mmm, I-----?-- It's not - by definition, because of it's rarity, it has a very low likelihood of happening, but would normally have substantial consequences.

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All right. So, it looks like "flood prone" can mean extraordinarily unlikely.

MR FLANAGAN: Yes. So that we can understand what is a PMF - because some people might have some difficulty with the concept - is it a once-only flood event?-- No.

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It's not. And why is it not a once-only flood event?-- It's calculated in the same way as other floods, so it's based on the probability of a weather situation where so much water can fall out of the sky and cause that flooding to occur. It's calculated based on meteorological information. So, it's - it is an actual flood of a certain probability.

We have discussed different lines in this Commission of a probability of 1 in 20 or 1 in 50 or 1 in 100. Indeed, one of your figures has a 1 in 200 probability?-- Yes.

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If we were to assign a recurrence probability percentage to a PMF, what would it be?-- I understand the way engineers draw it - I'm not an engineer - they could use a mathematical way of calculating it based on a probability of something like a 1 in 100,000 chance of it occurring, but, in fact, I think mathematically, it is so close to infinity it's that unlikely.

Would you - I appreciate you're not a hydrologist, but from your own knowledge you are aware that hydrologists sometimes refer to the PMF in terms of the recurrence probability percentage as being more than a 1 in 10,000 year event?-- I've seen that reference, yes.

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All right. So, in the history of a particular floodplain, can a PMF occur more than once?-- Yes.

Okay. Now, in paragraph 10.5 at page 19 of your report - would you go to that, please, Mr Grech?-- Paragraph 10.5?

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Paragraph 10.5 at page 19. You say, "It is emphasised that the purpose of flood risk mapping should not initially be to identify the extent of land that should be subjected to flood-related development controls, but rather identify where risks exist that could be managed by such controls. The process of identifying a range of floods during the preparation of a flood risk management study enables the community and the decision-makers to be fully informed in regard to flood risks." Now, do you agree that any flood risk management study would ordinarily identify a PMF?-- In my experience, yes.

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And would you agree that the PMF should not act in its own right as a planning constraint; that is, it should not operate as a flood line for planning overlay purposes?-- For some things it may be used, and I'm talking about - just to put it in perspective, a PMF line may be in a typical floodplain not too far away from a 100 year line. So, it's not - it's not suggesting that it's going to necessarily always be an extremely different situation.

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Would you agree - sorry?-- But to answer your question then, there may be circumstances where certain types of land uses - a community might decide should be subject to no risk, such as maybe a hospital or an aged care person's accommodation or something like that, but that's something that might be - that would be the outcome of a flood risk management assessment where the community would have the input to make those sort of decisions and it is a recognised standard in terms of emergency management, and by that I mean that the emergency management agencies will seek to establish evacuation strategies that remove people from the hazard completely, or the risk of flooding completely that is somewhere safe above a PMF refuge.

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We'll come back to how a PMF line could be used for planning purposes, but I think my question was a little bit more specific. Would you agree with me that it is not appropriate, given the probability of the event, to use a PMF for the purposes of planning overlay?-- Not for the majority of land uses, but there will be some land uses that will commonly be considered to be not acceptably located within a PMF line.

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I think you've agreed already in the context of your last - or second last answer that the PMF may be relevant for broader planning issues such as, for example, informing as to disaster

management?-- That's one aspect of it, yes.

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Which is one aspect, yes, but that's just an example of a broader use of a PMF line for planning purposes; is that correct?-- Yes.

Now, I appreciate, having spoken to you before, that you are aware of an article that is co-authored by Mr Bewsher and Mr Maddocks, and I understand that you've read that article?-- I have.

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Commissioner, may I provide a copy of that article to the Commission members?

COMMISSIONER: Do you want it made an exhibit?

MR FLANAGAN: Yes, please.

COMMISSIONER: Exhibit 971.

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ADMITTED AND MARKED "EXHIBIT 971"

MR FLANAGAN: You appreciate that Mr Bewsher is the very same person that Mr Dunning referred to in his questions to you?-- Yes.

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Fortunately it is a short article, but may I ask you to turn to page 5?-- Yes.

And you would have noted that the article is entitled, "Do we need to consider floods rarer than 1 per cent AEP."?-- Yes.

And the authors set out seven reasons as to why floods rarer than the 1 per cent AEP should be considered for planning purposes; is that correct?-- Yes.

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Now, I've asked you to turn your mind to the seven reasons that are put there. Could you go through each of them and tell the Commission whether you agree or disagree and, if you do agree and wish to expand on why you agree or if you disagree, please expand on why you disagree?-- Number 1, "It provides relevant authorities with a better appreciation of the magnitude of flood problems." Yes, I agree. "Economic appraisals do not include damage estimates from larger floods or estimate true costs." Yes, certainly I agree. "Allows emergency personnel to better respond to such an event." Yes, I agree. "Maps that outline the limit of inundation of the 1 per cent or other advice based on the 1 per cent is likely to give residents a false impression." I agree. "There are clearly some types of land uses that should be located above the 1 per cent flood level." I agree. "Care should be taken to avoid development that is above the 1 per cent flood, but still subject to flooding, in larger events becoming isolated as stages of flooding." Yes, I agree, that's certainly an

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issue, and, "The increased flood risk occurs when levees and dams are overtopped in floods. A rarer than 1 per cent event needs to be carefully considered and appropriate responses and actions planned." Yes, I agree. 1

They are, in fact, seven fairly commonsensical reasons why one would consider other flood events?-- Yes, that's correct.

Including a PMF?-- Yes. 10

And in a planning context?-- Definitely in a planning context, yes.

In that article you'll see the authors conclude: "This is not to say that floods rarer than 1 per cent AEP should be universally adopted as a main residential flood planning level. There may be certain types of development where a higher or low flood planning level may be more appropriate."?-- Yes. 20

"We need to be aware of the risk of rarer floods and have appropriate emergency planning response plans in place should such an event occur."?-- Yes.

You would agree with that statement, would you not?-- Certainly.

Now, the PMF may also be a line that informs a Council in terms of making decisions concerning the allocation of new development areas?-- It could be. 30

Now, if a PMF line was to be shown on the planning scheme, could you tell the Commission what is it meant to communicate to the ordinary rate payer?-- That land located within that line is subject to some level of risk. If that is the only line shown, then you can't go much further than that.

When you say it shows some level of risk, by showing a PMF line on a planning scheme, and I'm an ordinary rate payer and I go and search and I find the PMF line and it shows me some level of risk, the risk will be described as a 1 in 10,000 probable flood event, will it?-- Well, no, that level of risk or that probability of that risk is what exists at that line, but not within the line. So, as you move closer to the river, the probability increases - or decreases, I should say. 40

Is there anything else that would be communicated by use of a PMF line to a rate payer, for example?-- Only if it comes with some controls or other strategy that may exist that's part of a broader flood risk management strategy. 50

If I was to look at this line by way of overlay - the PMF line - would it be the case that anything under that PMF line would be described, according to the ordinary definitions, as flood-prone land?-- Well, if there is only one line, then there's - I guess the general public reading that information may interpret that everywhere within that line is subject to that level of risk or that probability of being flooded, but

it's not quite the case because that level of probability exists only at the line, being the edge of the area drawn to encompass that line, but it can't - obviously it must change as you get closer to the river.

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Would you see a PMF being used as a forward planning tool by a local Council for greenfield sites, for example?-- Not normally. In my view, and in my experience, it is better to provide a gradation or a break-up of the floodplain or flood-prone land into different areas based on risk that represents planning recommendations or planning strategies. So, there may be an area within the PMF - that is, high hazard - high hazard in certain types of floods, not necessarily a PMF flood - that could be decided to be too dangerous for most types of development to occur, and then there's the area beyond that somewhere in between - which I think it has been described before - that could be an area where the majority of development is subject to some form of development control.

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But if it's a greenfield site and a local authority by reference to a PMF thought, well, that greenfield site is according to the definition flood prone land and that greenfield site is above the PMF, therefore it's not flood prone land wouldn't that inform their decision of where to open up development in relation to those two greenfield sites; couldn't it be used in that way?-- That could inform the decision, but in my planning experience it may not be the full and appropriate consideration due to the determining which release area should be appropriate.

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I'm not suggesting for one moment that it's the only consideration. I'm suggesting it's one of a number of tools or considerations that could be referenced by a local authority in making a decision in relation to the location of a greenfield site?-- If all other issues were equal and there was no need for both release areas, then I would think that for the purposes of making a decision if the only thing that differentiated the two release areas was one was subject to some flood risk, albeit minor, and one was not subject to any flood risk then commonsense would be that you would choose the one subject to no floodings.

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Now, Mr Grech, do you know if PMF is used anywhere in Australia in planning schemes?-- In planning schemes?

Mmm?-- Yes.

To your knowledge how is it used?-- To identify the extent of flood prone land from which a finer grade - grain of development assessment follows.

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Can I take you to paragraph 7.11 or 7.11 of your report at page 9? This is where you refer to figure 1 which is the figure of the three houses?-- Yes.

Just so that we can understand this, in relation to the flood event that's contemplated here it's a 1 in 200 year flood; is that correct?-- No, the - that diagram's just explaining that three houses built all to the same standard in terms of floor level control, being the 100 year, could actually be subject to substantially different consequences as a result of a flood that's slightly rarer than the 100 year flood.

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I think my question was simpler than that: isn't it contemplating damages from a one in 200 year flood?-- Yes.

Yes, thank you?-- Sorry. I misunderstood the question, sorry.

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That's all right. And in relation to each of those diagrams, can you identify in relation to the first house that the one in 200 year flood comes to the floor level, isn't it?-- Just above the floor level.

Just above the floor level, and the PMF is slightly above the gutter level; is that correct?-- That's correct.

And, similarly, in relation to the next diagram here the PMF is above the height of the roof?-- Yes.

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And then further in the third diagram it's considerably higher than the roof line?-- That's correct.

So are we to understand from figure 1 as demonstrating that even in a one in 200 year flood event such an event comes nowhere near the probable maximum flood event?-- That's correct, yes.

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Would you agree that ordinarily the mapping of a probable maximum flood event incorporated within the mapped area of flood risk - sorry, I will start that again. Do you agree that ordinarily the mapping of a probable maximum flood would incorporate within the mapped area of flood risk substantial areas of existing development?-- Yes.

And it would also incorporate areas which might otherwise be considered appropriate for further development to occur or future development to occur?-- It may, yes.

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Can I then draw your attention to paragraph 4.4.2 of Mr Vann's report?-- Yes, I have it.

Have you read that paragraph?-- I had once.

Would you just reread it, thanks?-- If I can read it again?

To yourself. Do you agree with Mr Vann that while the PMF would identify virtually all areas subject to any flood risk this would be likely to cause public difficulties and understanding, the concept, due to those two matters identified by him, and I will put this proposition first, firstly that flood levels have changed. Do you agree with him in that respect?-- Yes. If mapped only by itself. That's not what I advocate, but-----

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Right?-- -----I understand your question.

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And his second proposition is that it would - could lead to difficulties and understanding because of the impacts if the only mapping of flood risks shows that extensive areas of existing urban areas are subject to that risk?-- Well, yes.

Generally, would you agree that great care needs to be taken in relation to the use of a PMF in a planning scheme?-- Great care needs to be taken in regard to communicating where the PMF is in a planning scheme, yes, and in all circumstances, yes.

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COMMISSIONER: You couldn't tell the public that the PMF shows the limit of flood prone areas with it being then implicit in that that anything within the PMF is flood prone. You are going to communicate a very different idea of what "flood prone" means, don't you?-- Yes.

It's really a-----?-- It's something we had to grapple with

for each of the circumstances where that planning matrix outcome was used because that starts at the proposition where the whole of the floodplain is identified and then characterised in the different levels of risk.

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I'm just worried about the adoption of the term "flood prone", that's all. It just seems wildly and apposite to what you're describing in ordinary use?-- In ordinary use, I agree, the community find it difficult to what it means particularly when they have had experience in understanding some other flood, typically lower than that.

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It might be that the community is right about what "flood prone" means and the planners are wrong, but-----?-- There's obviously still some risks there, and there have been catchments across Australia where that those - that level of flooding has happened.

All right. I think we may be at cross purposes. It doesn't really matter. Mr Flanagan?

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MR FLANAGAN: My suggestion is that the use of a PMF line without a very fulsome explanation of what it means, at least, could mislead people in that they could become unnecessarily concerned that their house is located in a flood prone area?-- Yes. My experience that - it is able to be communicated to the public so that they do not - so that they are not alarmed. I have had to go through that in a number of cases and there's also consideration that to not identify that as risk and to have larger floods that occur that were not communicated even known to be potentially able to occur equally is disturbing to the community.

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Well, it's more than - it's more possible than not that if your house is described as being in a flood prone area you may have difficulty borrowing against the house?-- Not necessarily.

But you may have?-- I don't know.

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You may have difficulties in obtaining insurance for having a house in a flood prone area?-- Well, it's not so much difficulty in obtaining insurance, it's the cost associated with that.

What I'm suggesting is that there could be unforeseen consequences of having a planning scheme identified in a PMF whereby people will identify their homes or properties being in a flood prone area?-- That's a well-known and understood issue associated with identifying land as being flood affected at any level, and in my experience the reality is that there are various levels of constraint or impact associated with identifying land as flood affected. Just the mere fact we're identifying it as subject to some risk doesn't necessarily change the value of the land or its use if it doesn't - if it's not accompanied by a planning control that says: for that particular use on that particular bit of land you are constrained from doing certain things.

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But an informed purchaser who is looking at buying in a particular area will check the plan, will see that this land is described as flood prone. That would have a direct effect on the value of people's properties, wouldn't it?-- Research undertaken as part of the Hawkesbury Nepean-----

Yep?-- -----show that in the longer term - well, it does not necessarily have an effect on land value.

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You see, what I'm actually proposing to you is this: is that given the probable reoccurrence of a PMF and its ability to mislead, should it have any role in a planning scheme?-- I believe it should.

We will come back to why you believe that and I will give you the opportunity to say that, but can we move on then to paragraph 73, page 23 of Mr Reynolds' report?-- The paragraph number again, sorry?

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73 at page 23 of his report?-- Yes.

The only reason I'm referring you to that is that he identifies the fact there is some dispute in the literature about whether the PMF is useful for planning regulation. You're of that dispute?-- Yes, in a general sense, yes.

Thank you. And have you read paragraph 74 of his report?-- Yes, but I may need to read it again.

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Thank you. Now, do you agree or disagree with that paragraph and the identification by Mr Reynolds as to how a PMF could or should be incorporated into a planning scheme document such as mapping?-- I agree at a general level that - that the PMF being recognised as an outer limit of the floodplain use.

Do you generally agree with this proposition, that the PMF should be used as a line that informs for broader planning considerations rather than as a line that would prohibit any particular type of development?-- For the majority of land uses, yes.

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Now, what particular land uses do you identify as falling, if you like, above the PMF?-- Land uses which are - fall into either of two categories: those which are considered to be critical to the operation of a flood evacuation strategy and/or required to assist in the restoration of a flood affected community. I would term those to be critical types of utilities. Secondly, those uses which are considered to be particularly vulnerable to flooding, and both in regard to building damage and risk to life. So they might be uses that might be difficult to evacuate people from because of the nature of the occupants, and I just wanted to qualify that by saying the risk management process is about providing a process by which the community can ultimately decide what level of risk is considered bearable to that community and the process, and one that I'm familiar with and have followed and is consistent with that outline in SCARM with the reference in

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State Planning Policy is all about going through a process which allows the community to be informant about those risks, identify the options associated with those risks, weigh up the economic, social and environmental consequences of - with the different options of minimising the risk, whether it be the planning control or a structure solution and deciding that - on a strategy to deal with those risks in a multifaceted way.

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May I take you to paragraph 22.2 of your report at page 43?-- Page 43 paragraph?

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22.2?-- Yes.

Consistent with that paragraph you seem to be suggesting that simply because land may be flood prone doesn't mean it's necessary to sterilise that land?-- That's correct.

And indeed as I understand your report in that paragraph do you agree that the purpose of planning in those circumstances would be to substantially minimise impacts of flood risk?-- To reduce flood risk, yes.

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Can I just turn to a completely different topic now which you deal with in your report which is catchment authorities as regulators of the flood plan - of the floodplain as opposed to local Councils being the regulator of the floodplain?-- Yes.

And in that respect may I take you to paragraph 25.1 at page 45?-- Yes.

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You state that your view is that there are advantages and disadvantages for the appointment of either of these two agencies depending upon the outcome intended to be achieved; is that correct?-- Yes.

And in the table, the very useful table that you've produced, at paragraph 25.2 you set out the various advantages and disadvantages of catchment authorities as opposed to local Councils; is that correct?-- Yes.

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Now, there are of course a number of stages in relation to the implementation of any flood risk management study; is there not?-- Yes.

One of those stages involves identifying the relevant flood regulation line or lines?-- Well, that's an outcome of the whole process.

Yes. Would you agree that the decisions as to what constraints apply in relation to the particular line or lines that are finely identified through that process as to that - and how those - how you assess against those particular lines is ordinarily the province of local Councils through their relevant planning scheme document?-- Yes, yes, I agree.

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Now, would you also agree that this is based on a store, if you like, of local knowledge and expertise that a well resourced local authority would possess?-- Yes.

You agree that if a catchment authority was to be set-up, if you like, as an additional level of assessment, as a concurrence agency or you might - I think in New South Wales they're called approval agencies. For the issue of flood alone would this have, in your opinion, inbuilt cost inefficiencies?-- I'm sorry, what I - I'm not sure if I can answer that question. What I discussed in that section of my report is not - is not informative in regard to that question. It was about the lead agency that would be best suited to undertaking a flood risk management study and preparing flood risk management plans and implementing that plan as opposed to determining development applications.

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Well, I think I can ask you this question from the fact that you're brought here as a planner?-- Sure.

As an expert town planner do you have a general comment to make as to the role of a concurrence or approval agency where they are concerned only with one issue such as flood in terms of what you would refer to as the balanced planning approach?-- In my view if a competent flood risk management plan has been prepared and the recommendations of that plan are implemented, including planning recommendations, the referral agency, whatever that agency was, should have had appropriate input to that process and should not have a role normally at the development application stage.

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As I read your report, though, you finally conclude that local authorities are better placed to be the lead agency in this regard?-- In my experience I think that's my view for - looking at all the different issues on balance.

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See if you can answer this question then: would you agree that rather than setting up an entirely new framework of having a catchment authority as a concurrence or approval agency a better way forward would be for the review and amendment of the present State Planning Policy 1-03?-- Yes, I understand your question and I would say that the amendment that you're alluding to would be one that encourages, and maybe even enforces involvement from those other agencies at that strategic planning level to prepare the plan.

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Yes. The amendments that I would be suggesting would be those amendments to ensure that Local Government Planning Schemes appropriately address flood considerations?-- Yes, with the input from those agencies that would otherwise be necessary.

And would you see that as a preferable way forward rather than the establishment of a separate catchment authority?-- Yes.

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Thank you, Commissioner.

COMMISSIONER: Thank you. Mr Ure?

MR URE: No, thanks, Commissioner.

MS McLEOD: No questions.

MS KEFFORD: No further questions. Might Mr Grech be excused?

COMMISSIONER: Yes, thank you, Mr Grech. You're excused?--
Thank you.

WITNESS EXCUSED

MR CALLAGHAN: I call Greg Vann.

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GREG VANN, SWORN AND EXAMINED:

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MR CALLAGHAN: Could you tell the commission your full name?-- Gregory Leonard Vann.

Mr Vann, you're the director and CEO of Buckley Vann Town Planning Consultants; is that correct?-- That's correct.

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Obviously a town planner by occupation?-- That's correct.

You were asked to provide a report to the Commission and to that end you have supplied a document entitled Planning Aspects of Alternative Approaches to Mapping the Effect of Flood dated 10 November 2011. That has been tendered and is now Exhibit 965. You have a copy of that?-- Yes, I do.

Now, that report-----?-- Sorry, there was one typo in there I became aware of.

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Would you like to clear that up?-- Just in - page 17, paragraph 3.7.4 the second dot point, the reference to zooming there should obviously be zoning.

COMMISSIONER: The zooming sounds a lot more fun?-- Yeah.

MR CALLAGHAN: Mr Vann, your report, I would suggest with respect, is a lucid one and your presence supports the opportunity for other parties to question you if they wish to, but you've been present whilst the other witnesses have given evidence this morning?-- This morning, yes.

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And, indeed, you've had the opportunity to review the reports of Mr Reynolds and Mr Grech and Mr Beusher?-- Yes, I have.

Obviously there is considerable overlap between each report; there are differences in expression and emphasis, but the same topics are canvassed?-- Yes.

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Could I ask you then rather than to rehearse the subject matter which has already been well and truly traversed this morning, whether you have some overview or some overall comment about the reports that had been tendered and the evidence that has been given this morning?-- Yes, I do. I see that there is actually a fair degree of convergence of where the thrust of the evidence is going and the expertise is going. It's interesting, I think, that the experts involved have approached it somewhat differently depending on where they started from. Mr Reynolds did a lot of research before he started to work through his views. Mr Grech, obviously, has a lot of practical and first-hand experience in dealing particularly with flooding from a planning context, and Mr Beusher, similarly though, from a risk management and hydrology perspective. I tended to go back to first principles, do some research, but not the primary focus of what I did and started to think about my understanding as a planner about what that means and where you go to to address

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the issues that I was asked to address. Notwithstanding that
difference of approach there was a fair, you know, convergence
of views. I thought that it was pretty clear that everyone
had turned their mind to the roll of land use planning as
being one of the - of an integrated set of measures that
needed to be put in place to properly deal with the management
of the risk of flood and I thought also that there was a
fair - there seems to be a very, sort of, consistent theme
that there needs to be a more sophisticated approach than,
perhaps, has been so far advocated by State Planning Policy
103 in Queensland and that primarily revolves around the need
to identify more categories of flood risk, whether that be by
the per cent - you know, percentage risk or hazard zones as
Mr Grech and Mr Beusher refer to similar concepts, a more
sophisticated approach, and that that would also involve at
least some consideration of the probable maximum flood in that
bundle. I thought there was also a fair degree of consistency
about the need to be clear in how you explain it from the
point of view of public understanding and public confidence in
expressing how you are dealing with flood and, certainly, my -
I come back to - I find the percentage approach, even though
AEP might be a bit confusing, if you put that on the end of it
the idea of flood having a 1 per cent chance of happening here
in any one given year here is a pretty simple concept as is 2
per cent or whatever percentage, and I think that sort of
signal is a much easier one to understand and helps overcome
the risk that what was called the Q100 and then sometimes the
1 in 100 flood is the flood line; that is to say there's no
flood happening outside that and, secondly, that once you've
had one of those you are pretty right for another hundred
years and - you know, which is sometimes a perception that is
broad in my experience. So there seemed to be a fair degree
of confluence of views on that point. I also think that
there's a fair degree of direction about priorities really
needing to be established in the areas where urban development
is intended or being contemplated as the first priority
because that's obviously - has the potential to put more
people and property at risk, and the only other comment I
wanted to make about the overall thrust of what I have read
and heard is something that I didn't deal with was the
question of liability for Local Government. It seems to me
that if that is an issue, and I think that's a matter for
expertise outside my own, that would somehow inhibit Local
Government from properly dealing with the effects of flood and
that would be something that would need to be dealt with
appropriately.

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All right. The first point you made when you were talking about the common ground was referable to the need for an understanding about this topic being part of an integrated approach to dealing with the risk and affected flood; is that right?-- That's correct.

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And you deal with that at 5.1.3?-- Yes, I do.

On page 26 of your report?-- And in that paragraph with zoning rather than zooming also.

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Yes. And you may have said all you needed to say about that, but is there anything that you could say by way of elaboration upon that which appears in that part of your report?-- Well, the four dot points that I've selected out of there are out of the SCARM report. I found that very instructive. Whilst I was aware of all that I've never seen it so succinctly expressed as how these - the factors need to be thought of and worked together and so I really found that very helpful to think that, yes, there are some things that are really interventionist to the behaviour of the flood plain by levee banks or flood channels or whatever which are construction works which are designed to manage the effects of flood, but there are also the land use planning controls which are the ones I'm obviously more familiar, the ones that directly go to building controls and then outside of that the disaster management flood emergency stuff. And so what I got from that is the need to have some clarity about the role of the planning related controls where they finish and where the others take up or where there's overlap for a particular purpose and I just instanced one example that it may be appropriate that the land use planning system uses the imposition of some things that are really related to the flood emergency procedures. So that if it's already been determined there are appropriate evacuation opportunities for a particular use it might be a reasonable requirement of approval for that use to prepare and implement an evacuation plan.

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COMMISSIONER: How do you monitor it?-- How do you monitor?

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Is there a lot of point in making it a condition of approval that there be an evacuation plan if nobody is ever going to find out whether it's been implemented?-- Yes, it's always the problem with planning conditions generally and so that is a risk but, you know, the council ultimately has the power to impose and enforce those conditions and if the alternative is not to have it at all I would have thought it's better to have it than not have it. So it's a balance, but it's often the case, for example, that planning approvals require the preparation of a management plan perhaps for, you know, a use that operates at night and there's some sensitivity of residential areas around them. Now, it's the same question then who enforces those.

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Yes. Except you're not likely to get a complaint from the neighbours about the plan being inadequate-----?-- That's right. Different triggers.

-----or not. All right?-- But it could be the sort of thing that, you know, if it's a child care centre and there's some sort of parent group that they make sure that these things are being thought about. You know, there's other mechanisms but I guess I come back to saying it's better to have it there and have the ability to enforce it than not have it there at all, if it's appropriate to the approval of the use.

Thank you.

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MR CALLAGHAN: I have nothing further, thank you.

COMMISSIONER: Mr MacSporran?

MR MacSPORRAN: Thank you, Commissioner. Mr Vann?--
Mr MacSporran.

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Can I take you to section 5.2.4 of your report on page 27?--
Twenty-seven.

Page 27. You refer there to the IDAS arrangements for
referral agencies?-- Correct.

I take it that you were present in Court when I asked
Mr Reynolds some questions about Mr White's evidence?-- Yes.
And I've also read the transcript of Mr White's evidence.

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Yes. And you'd agree with what Mr White says about
the-----?-- Yes, I would.

-----desirability of having the matter dealt with within the
planning scheme rather than referring back to a State
agency?-- Yes. I think that's a good principle, but I'd also
just point out that just because there isn't a concurrence
agency requirement that doesn't prevent local government from
seeking advice if there is a particular matter that really is
tricky.

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Yes?-- Or would be useful to get specialist advice that might
be available within government-----

Yes?-- -----to provide some advice. So they had that
opportunity in assessing the application anyway.

But if possible it should be dealt within the planning scheme
itself?-- Yes. I would say not only if possible, I think
that's the preferred approach.

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Yes?-- Yes.

All right. Can I take you to an attachment to Exhibit 5, 38,
Mr Nelson's statement and this deals with the question of the
flood mapping, the QRA?-- QRA flood mapping.

It's on page 35, please, Exhibit 538. This is a guideline,

Mr Vann, to the QRA work?-- I have that with me, I think.

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You have that with you, yes, a hard copy. We'll have it on the screen shortly, I think, in any event, but if you have a hard copy, by all means?-- That's this document?

That's it, yes. Thank you. If you go to page 4 of that which is page 35 of the exhibit, it talks about under - on the right hand column point 4, delivery?-- Yes.

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You see where it says there about - in that section? I should ask, firstly, have you read this-----?-- Yes.

-----guideline before?-- Yes. I see the dot point. Do you need me to read the paragraph?

COMMISSIONER: Can I just stop you, Mr MacSporran.

MR MacSPORRAN: Yes.

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COMMISSIONER: What's the attachment again just so that we-----

MR MacSPORRAN: It's the planning for stronger more resilient flood plains.

COMMISSIONER: So it's EJN14, I think.

MR MacSPORRAN: I'm sorry, it's page 35-----

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COMMISSIONER: No, sorry, it's not. I've just read the start, but that's not it. Do you know the attachment number?

MR MacSPORRAN: I don't know the attachment number, but the page should be 35. It's 400-odd pages long. All the attachments - this one is at page 35, page 4 of this guideline.

COMMISSIONER: I would like to get it opened if we can.

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MR MacSPORRAN: Yes.

COMMISSIONER: I don't think that's it either.

MR MacSPORRAN: I don't think that's it, no.

COMMISSIONER: Don't worry about it. Go on questioning.

MR MacSPORRAN: Thank you. At page 4 you have under the heading "delivery" and if you just read that section?-- At the dot point and the paragraph afterwards.

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And the paragraph, yes?-- Yes, I had a quick glance through that while we were waiting.

Thank you. Then if I take you to page - just bear with me a moment, page 12, which is the right hand column the heading "Interim tool kits"-----?-- Yes.

-----"supporting the TSPP"-- Yep.

If you just read that column?-- Yes, I've read that.

Thank you. Page 14, left hand column which is "Planning scheme provisions modern code"?-- Yes. I have read these before but I'm happy to read them again for the purposes of-----

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Yes, I just want to highlight these sections if I could, please. Yes, that's it. And just if you wouldn't mind looking at the next page, page 15 which is page 46 of the exhibit?-- Yes.

Which talks about delivery?-- Yes.

Gives the flow chart as to how this works and then particularly the left hand column understanding the operation of an overlay?-- Yes.

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And then the boxed section in the bottom which talks about the flood plain maps, plus the model code provisions-----?-- Yes.

-----equals interim flood plain assessment overlay?-- Yes.

That's probably a reasonably constrained summary of what the QRA work is about in this area. It seems to indicate, do you agree, that it's designed to assist the council with little resources to do flood studies and have their own mapping, to adopt the mapping and then in conjunction with the code place that into their planning scheme to address the issue of potential flooding impacts?-- Yes, that's clearly the intention and the purpose.

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You see that as being a beneficial tool for councils in that situation?-- Look, I do potentially. The only thing I commented on in my report is I don't - I'm aware of the discussion about the nature of the mapping and we don't know - you know, it doesn't accord to a particular - in a percentage, AEP, it's not probable maximum flood so we don't know exactly what it is and so I think the only issue is just to - so that we have a clear understanding of the implications of its use in that way-----

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Yes?-- -----so that it provides an appropriate ability to manage the effects of flood without imposing an unnecessary burden on a large number of people who wouldn't otherwise have to deal with the issue-----

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Certainly?-- -----and, you know, where the risk isn't great.

Yes?-- So it's just a little bit hard for me to understand that from the information. I think you'd have to do reasonably exhaustive sort of analysis to get on top of that. So that's my only concern. I think the idea of - I also read Mr Nelson's evidence this week.

Yes?-- I had a look at that and I found that helpful. I think the sort of comparison with bush fire mapping----- 1

Yes?-- -----that he made I think was a reasonable one to make.

Yes?-- The bush fire mapping that was done, you know, initially can I say had a few rough edges on it-----

Yes?-- -----and people have progressed it over time. There are some differences. It's not as by anywhere near - anywhere near as widely spread an issue so it doesn't affect as many places. 10

Yes?-- And the implications for where it did have affect were not necessarily particularly onerous. So it's just a matter of balancing those factors as to how useful the QRA mapping is in its current form.

Certainly. But you'd agree it's a useful starting point?-- Yes, look, I think it's great that someone is having a go at trying to very quickly provide, you know, a very wide coverage of mappings. 20

Yes?-- I think one of the really important steps that I get from reading the guideline and also from Mr Nelson's evidence is that local governments really need to kind of come to the table and be satisfied that they're either okay with the line as it stands or they have sufficient understanding of the local situation, even if they haven't done the flood mapping to be able to vary that line to what they consider to appropriately effect the areas that might want a catcher. 30

Yes. And the guideline makes it clear that the product, the tool kit is a basic tool kit which is intended to be added to-----?-- Yes.

-----with local knowledge from the councils to build it up over time?-- Yes. 40

And to ultimately provide a consistent database for use?-- Yes. And I think I concluded in my report that if you tried to pull out a few sort of objectives or principles that you were trying to deliver through planning schemes in dealing with the effects of flood that consistency would clearly be one important component.

Yes?-- And I think, again, all the experts seem to be quite consistent in their agreement with that. 50

Consistency. All right. And in terms of that consistency one of the advantages of the QRA flood mapping is that it maps across all catchments State wide?-- Yes.

You see that as being a benefit rather than being constrained by local government area boundaries?-- Can I just - I'm happy to answer the question, I will. I just - I'm not talking about the detail of the maps themselves. I've put my

reservations forward on in that respect already.

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Yes?-- So putting aside that issue I think it's clearly a preferred approach to understand that flooding at a catchment level.

Yes?-- I think, you know, the second priority - well, the real priority is, though, to understand the impacts of flooding where you have urban areas or towns or, you know, congregations of people in permanent accommodation that you really need to understand whether or not you're putting more people at risk.

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Yes?-- So that's a real priority and that's what I said in my report, but I didn't actually touch on the need to understand - you know, you can't do that just - I think Mr Nelson said just for Brisbane without actually having regard to full catchment if it affects the situation in Brisbane.

Yes. Can I take you to page 17 of that guideline and in particular step 4, "Adopting a flood level."?-- Yes, I've got that.

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Yes. That seems to explain how the authority suggests the councils may proceed?-- Yes.

The documenting of flood levels. Do you see merit in that approach?-- This is where they're actually asking councils to, you know, bound truth or sanity check their information, yes. Look, I think one of the things about the whole QRA mapping too is that it is, I think, in the table that they have about the maturity of approach to flooding. It sort of goes from zero to one, I think in their sort of own assessment-----

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Yes?-- -----which is a reasonable way to say it. In the end it really only comes back to having one line and for the reasons all of the other experts have said just having one line isn't really the preferred sort of best practice. So it's a step along the way towards that, I guess, if the information is appropriately founded and appropriately used.

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All right. Thank you. Thank you, your Honour.

COMMISSIONER: Mr Dunning?

MR DUNNING: No questions, thank you, Commissioner.

COMMISSIONER: Mr Flanagan?

MR FLANAGAN: No questions, thank you.

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COMMISSIONER: Mr Ure?

MR URE: I have nothing, thank you.

COMMISSIONER: Ms McLeod?

MS MCLEOD: No questions, thank you.

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COMMISSIONER: Mr Callaghan?

MR CALLAGHAN: Nothing further. May Mr Vann be excused?

COMMISSIONER: Thanks, Mr Vann, you're excused.

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WITNESS EXCUSED

MR CALLAGHAN: There is a regular gallimaufry of material that remains to be tendered. We have prepared an index of that material. Would it be easiest if I handed up a copy of that list and then just recited that parrot fashion into the record such that you can-----

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COMMISSIONER: I think I've got - somebody has given me a copy of an index to documents to be tendered in bulk; is that it?

MR CALLAGHAN: Yes.

COMMISSIONER: All right.

MR CALLAGHAN: Yes, if I just recite that.

COMMISSIONER: And that should start with one statement of Rebecca McDonald?

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MR CALLAGHAN: That's so.

COMMISSIONER: All right. You read, I'll give them the numbers.

MR CALLAGHAN: Can I indicate that all dates mentioned will be 2011 unless otherwise stated.

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COMMISSIONER: All right. Well, just tell me a date if there's two by the same person otherwise don't worry.

MR CALLAGHAN: Very well. There's a statement of Rebecca McDonald.

COMMISSIONER: 972.

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ADMITTED AND MARKED "EXHIBIT 972"

MR CALLAGHAN: A statement of John Kersnovski.

COMMISSIONER: 973.

ADMITTED AND MARKED "EXHIBIT 973"

MR CALLAGHAN: A statement of Hendrik Du Plessis.

COMMISSIONER: 974.

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ADMITTED AND MARKED "EXHIBIT 974"

MR CALLAGHAN: A letter from Brian Ottone.

COMMISSIONER: 975.

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ADMITTED AND MARKED "EXHIBIT 975"

MR CALLAGHAN: A statement of Luke Lankowski.

COMMISSIONER: 976.

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ADMITTED AND MARKED "EXHIBIT 976"

MR CALLAGHAN: A statement of Mark Watt.

COMMISSIONER: 977.

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ADMITTED AND MARKED "EXHIBIT 977"

MR CALLAGHAN: A letter from Ken Gouldthorp dated 6 September.

COMMISSIONER: 978.

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ADMITTED AND MARKED "EXHIBIT 978"

MR CALLAGHAN: A statement of Ken Gouldthorp dated 2 November.

COMMISSIONER: 979.

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ADMITTED AND MARKED "EXHIBIT 979"

MR CALLAGHAN: Some material provided by Phil Berting.

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COMMISSIONER: 980.

ADMITTED AND MARKED "EXHIBIT 980"

MR CALLAGHAN: That's 18 August and a statement of Phil Berting dated 3 November.

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COMMISSIONER: 981.

ADMITTED AND MARKED "EXHIBIT 981"

MR CALLAGHAN" material provided by Scott Norman.

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COMMISSIONER: 982.

ADMITTED AND MARKED "EXHIBIT 982"

MR CALLAGHAN: A statement of Ian Flint dated 3 November.

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COMMISSIONER: 983.

ADMITTED AND MARKED "EXHIBIT 983"

MR CALLAGHAN: A statement of Ian Flint dated 26 October.

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COMMISSIONER: 984.

ADMITTED AND MARKED "EXHIBIT 984"

MR CALLAGHAN: A statement of Gavin Kele.

COMMISSIONER: 985.

ADMITTED AND MARKED "EXHIBIT 985"

MR CALLAGHAN: A statement of Paul Lucas dated 9 September.

COMMISSIONER: 986.

ADMITTED AND MARKED "EXHIBIT 986"

MR CALLAGHAN: A statement of Paul Lucas dated 20 October.

COMMISSIONER: 987.

ADMITTED AND MARKED "EXHIBIT 987"

MR CALLAGHAN: A statement of Stirling Hinchliffe dated
13 September.

COMMISSIONER: 988.

ADMITTED AND MARKED "EXHIBIT 988"

MR CALLAGHAN: A statement of Stirling Hinchliffe dated
25 October.

COMMISSIONER: 989.

ADMITTED AND MARKED "EXHIBIT 989"

MR CALLAGHAN: A statement of Peter Allen dated 16 September.

COMMISSIONER: 990.

ADMITTED AND MARKED "EXHIBIT 990"

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MR CALLAGHAN: A letter to the inquiry from the Suncorp Group.

COMMISSIONER: 991.

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ADMITTED AND MARKED "EXHIBIT 991"

MR CALLAGHAN: The flood mapping submission from RACQ Insurance.

COMMISSIONER: 992.

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ADMITTED AND MARKED "EXHIBIT 992"

MR CALLAGHAN: The Local Government Association of Queensland flood mapping submission.

COMMISSIONER: 993.

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ADMITTED AND MARKED "EXHIBIT 993"

MR CALLAGHAN: Insurance Council of Australia flood mapping submission.

COMMISSIONER: 994.

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ADMITTED AND MARKED "EXHIBIT 994"

MR CALLAGHAN: Ipswich City Council flood mapping submission.

COMMISSIONER: 995.

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ADMITTED AND MARKED "EXHIBIT 995"

MR CALLAGHAN: Brisbane City Council flood mapping submission.

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COMMISSIONER: 996.

ADMITTED AND MARKED "EXHIBIT 996"

MR CALLAGHAN: The statement of Mark Watt.

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COMMISSIONER: 997.

ADMITTED AND MARKED "EXHIBIT 997"

MR CALLAGHAN: A statement of Phillip Berting undated.

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COMMISSIONER: 998.

ADMITTED AND MARKED "EXHIBIT 998"

MR CALLAGHAN: A statement of Paul Bawden.

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COMMISSIONER: 999.

ADMITTED AND MARKED "EXHIBIT 999"

MR CALLAGHAN: A statement of Evan Pardon.

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COMMISSIONER: 1,000.

ADMITTED AND MARKED "EXHIBIT 1,000"

MR CALLAGHAN: A statement of Robert Bain dated 28 October.

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COMMISSIONER: 1,001.

ADMITTED AND MARKED "EXHIBIT 1,001"

MR CALLAGHAN: A statement of Robert Bain dated 21 October.

COMMISSIONER: 1,002

ADMITTED AND MARKED "EXHIBIT 1,002"

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MR CALLAGHAN: A statement of Robert Bain dated 7 September.

COMMISSIONER: 1,003.

ADMITTED AND MARKED "EXHIBIT 1,003"

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MR CALLAGHAN: A statement of Anthony Jacobs.

COMMISSIONER: 1,004.

ADMITTED AND MARKED "EXHIBIT 1,004"

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MR CALLAGHAN: A statement of Bradley Sully.

COMMISSIONER: 1,005.

ADMITTED AND MARKED "EXHIBIT 1,005"

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MR CALLAGHAN: Temporary State Policy 2/11.

COMMISSIONER: 1,006.

MR CALLAGHAN: SCARM report 73.

COMMISSIONER: 1,007

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ADMITTED AND MARKED "EXHIBIT 1,007"

MR CALLAGHAN: Brisbane City Council memorandum from Mary Shortland to Jude Munro.

COMMISSIONER: 1,008.

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ADMITTED AND MARKED "EXHIBIT 1,008"

MR CALLAGHAN: Brisbane City Council power point presentation of 7 August 2003.

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COMMISSIONER: 1,009.

ADMITTED AND MARKED "EXHIBIT 1,009"

MR CALLAGHAN: Statement of Miles Vass dated 8 September.

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COMMISSIONER: 1,010.

ADMITTED AND MARKED "EXHIBIT 1,010"

MR CALLAGHAN: Statement of Miles Vass dated 12 October.

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COMMISSIONER: 1,011.

ADMITTED AND MARKED "EXHIBIT 1,011"

MR CALLAGHAN: Statement of Amanda Yeates.

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COMMISSIONER: 1,012.

ADMITTED AND MARKED "EXHIBIT 1,012"

MR CALLAGHAN: Statement of Graham Brown.

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COMMISSIONER: 1,013.

ADMITTED AND MARKED "EXHIBIT 1,013"

MR CALLAGHAN: Statement of Martin Moore.

COMMISSIONER: 1,014.

ADMITTED AND MARKED "EXHIBIT 1,014"

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MR CALLAGHAN: Statement of Glen Brumby.

COMMISSIONER: 1,015.

ADMITTED AND MARKED "EXHIBIT 1,015"

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MR CALLAGHAN: Submission from the Commonwealth Government on draft standard.

COMMISSIONER: 1,016.

ADMITTED AND MARKED "EXHIBIT 1,016"

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MR CALLAGHAN: Statement of Carl Wulff.

COMMISSIONER: 1,017.

ADMITTED AND MARKED "EXHIBIT 1,017"

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MR CALLAGHAN: Statement of Pier Westerhuis.

COMMISSIONER: 1,018.

ADMITTED AND MARKED "EXHIBIT 1,018"

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MR CALLAGHAN: That's 12 May, Mr Westerhuis has another statement. Material provided by CD Blanch.

COMMISSIONER: 1,019.

ADMITTED AND MARKED "EXHIBIT 1,019"

MR CALLAGHAN: Material provided by Rockhampton Regional Council.

COMMISSIONER: 1,020.

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ADMITTED AND MARKED "EXHIBIT 1,020"

MR CALLAGHAN: Material provided by the Department of Community & Safety on the review of SPP.

COMMISSIONER: 1,021.

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ADMITTED AND MARKED "EXHIBIT 1,021"

MR CALLAGHAN: Statement of Campbell Darby.

COMMISSIONER: 1,022.

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ADMITTED AND MARKED "EXHIBIT 1,022"

MR CALLAGHAN: Statement of Dennis Ward.

COMMISSIONER: 1,023.

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ADMITTED AND MARKED "EXHIBIT 1,023"

MR CALLAGHAN: Statement of Jane Pires.

COMMISSIONER: 1,024

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ADMITTED AND MARKED "EXHIBIT 1,024"

MR CALLAGHAN: Statement of Peter Unwin.

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COMMISSIONER: 1,025.

ADMITTED AND MARKED "EXHIBIT 1,025"

MR CALLAGHAN: Statement of Mark Richards.

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COMMISSIONER: 1,026.

ADMITTED AND MARKED "EXHIBIT 1,026"

MR CALLAGHAN: Statement of Robert Hazell.

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COMMISSIONER: 1,027.

ADMITTED AND MARKED "EXHIBIT 1,027"

MR CALLAGHAN: Statement of Lyn Mitchell.

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COMMISSIONER: 1,028.

ADMITTED AND MARKED "EXHIBIT 1,028"

MR CALLAGHAN: Statement of Scott Grogan.

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COMMISSIONER: 1,029.

ADMITTED AND MARKED "EXHIBIT 1,029"

MR CALLAGHAN: Statement of Jamie Dobbs.

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COMMISSIONER: 1,030.

ADMITTED AND MARKED "EXHIBIT 1,030"

MR CALLAGHAN: And a collection of documents provided by Vero Insurance.

COMMISSIONER: 1,031.

ADMITTED AND MARKED "EXHIBIT 1,031"

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MR CALLAGHAN: There is finally a collection of documents relating to the operation of the State Emergency Service. They are contained on one disc and an index to the material on the disc is provided.

COMMISSIONER: The disc and the index will be collectively 1,032.

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ADMITTED AND MARKED "EXHIBIT 1,032"

MR CALLAGHAN: And I believe that's the conclusions of the materials.

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COMMISSIONER: All right. I think the parties have been advised already by e-mail as to the process for the furnishing of respective findings and recommendations to them and responses, but the arrangement will be rather than trying to get them out in a couple of tranches as the Commission did last time we'll just do it when we can, advising the response time which will be two weeks if it's fairly straightforward and short, three, if it's something longer and more complex. Those are working weeks.

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The Commission will work towards getting everything to the parties by the 5th of December at the latest so that the responses will all be back by the 23rd of December at the latest, but it will be two or three weeks. Again, the responses should, as has been indicated, confine themselves really to indicate what's agreed, what's not agreed, why, is there something that's been overlooked, but I would urge you not to engage in rhetoric or expostulation.

The findings and recommendations will be tentative. I think some parties might have missed that point last time because we did get responses saying this is inconsistent with that. The whole point is that no finding is absolute. So they're all there for you to respond to by way of recent argument, aversion to the evidence and it kept as concise as possible. I thank the parties for their cooperation.

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There are two other sets of thanks I would like to make. The

first is to the CAT Reporters from the State Reporting Bureau who have been with us all over the State contending with chiming clocks, cooing pigeons, rowdy two year olds, galloping witnesses, whispering counsel, all with good humour and tolerance and producing an excellent standard of transcript in response. It's a skill I've always admired. I admire it even more now and I hope it's never lost to the law.

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There's one individual I'd very much like to thank too and that's Ms Monique Broadbent from the Lifeline counselling service who, again, followed the Commission about the State, turning up in every country town that we did doing a rather lonely job, but a very valuable job. It looked like hard work to me and her contribution to the well-being of witnesses and also as a result to the inquiry's progress was very considerable and I'm very grateful.

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I think that's all. The inquiry's hearings are closed. Would you close the hearing, please.

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THE COMMISSION ADJOURNED 12.54 P.M.

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