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1 The Manual requires a choice of strategy

1. The only reasonable interpretation of the Flood Operations Manual¹ is that it requires a conscious act, that is, to “choose” or “adopt” a strategy, that is, W1, W2, W3 or W4, during the flood event. This section of the submissions sets out parts of the manual which lead to this conclusion.

Purpose of the manual

2. The manual’s purpose is to define procedures for the operation of the dams, to reduce, so far as practicable, the effects of flooding associated with the dams.² This purpose is to be achieved “by the proper control and regulation in time of the flood release infrastructure at the dams, with due regard to the safety of the dam structures”.³

Implicit legislative recognition of importance of the manual

3. The manual is a “flood mitigation manual” pursuant to Chapter 4 Part 2 of the *Water Supply (Safety and Reliability Act) 2008* (“the Act”), requiring approval by the chief executive of the Department of Natural Resources.⁴
4. The Manual provides that the prime purpose of incorporating flood mitigation measures into the dams is to reduce flooding in the urban areas of the floodplains below Wivenhoe Dam.⁵
5. Operation of the dam in accordance with the manual gives Seqwater protection from liability as provided for by section 374 of the Act.⁶
6. The manual makes it clear that operating the dam in accordance with the manual is a requirement, not a choice.

¹ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009.

² Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p3: para 1.3].

³ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p3: para 1.3].

⁴ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p3: para 1.4].

⁵ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p10: para 3.3].

⁶ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p3: para 1.5]; Section 374, *Water Supply (Safety and Reliability Act) 2008*.

7. In this regard, section 1.7 provides that the manual must be used for the operation of the dams during flood events,⁷ the Act obliges Seqwater to operate the dams in accordance with the manual in order to retain the protection from liability,⁸ and the preface states:

Given their potential significant impact on downstream populations, **it is imperative that Wivenhoe and Somerset Dams be operated during flood events in accordance with clearly defined procedures to minimise impacts to life and property.** This manual outlines these procedures and is an approved Flood Mitigation Manual under Water Supply Act 2008.⁹

8. The preface also makes clear the primary objectives of the procedures. It states that they are, in order of importance, to:
- Ensure the structural safety of the dams
 - Provide optimum protection of urbanised areas from inundation
 - Minimise disruption to rural life in the valleys of the Brisbane and Stanley Rivers
 - Retain the storage at Fully Supply Level at the conclusion of the Flood Event
 - Minimise impacts to riparian flora and fauna during the drain down phase of the Flood Event¹⁰
9. These objectives are repeated later in the manual, under the heading General.¹¹
10. Merely having regard to these “objectives” when operating the dam will not amount to compliance: the manual contemplates that the “objectives” and

⁷Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p4: para 1.7].

⁸ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p5: para 2].

⁹ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009, [p1: para 1.1], bold added.

¹⁰ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p1: para 1.1].

¹¹ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p9: para.3.1].

“procedures” are different things. So, for example, section 5.2 “Operation” provides:

The Senior Flood Operations and Flood Operations Engineers use the RTFM [Real Time Flood Model] for flood monitoring and forecasting during flood events to operate the dams in accordance with this Manual. This is done by optimising releases of water from the dams to minimise the impacts of flooding in accordance with the objectives and procedures contained in this Manual.¹²

Management requirements in the manual which make clear that the dam is to be operated in accordance with the manual

11. Section 2.2 requires that a Senior Flood Operations Engineer is designated to be in charge of Flood Operations at all times during a Flood Event and that release of water at the dams during Flood Events is carried out under the direction of the Duty Flood Operations Engineer.
12. Section 2.3 provides that when rostered on duty during a Flood event, the responsibilities of the Senior Flood Operations Engineer are as follows:
 - Set the overall strategy for management of the Flood Event in accordance with the objectives of this Manual.
 - Provide instructions to site staff to make releases of water from the Dams during Flood Events that are in accordance with this Manual.
 - Apply reasonable discretion in managing a Flood Event as described in Section 2.8.¹³
13. Section 2.4 requires that flood operations engineers:
 - Direct the operation of the dams during a flood event in accordance with the general strategy determined by the Senior Flood Operations Engineer.

¹² Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p13: para 5.2], bold and underline added.

¹³ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p5].

- Follow any direction from the Senior Flood Operations Engineer in relation to applying reasonable discretion in managing a Flood Event as described in Section 2.8. Unless otherwise directed, a Flood Operations Engineer is to follow this Manual in managing Flood Events and is not to apply reasonable discretion unless directed by the Senior Flood Operations Engineer or the Chief Executive.
- Provide instructions to site staff to make releases of water from the Dams during Flood Events that are in accordance with this Manual.¹⁴

The manual requires conscious consideration to be given to the strategies in the manual

14. Section 2.8 vests a discretion in the Senior Flood Operations Engineer to depart from the manual, but a precondition to this discretion arising is that the Senior Flood Operations Engineer holds the opinion that it is necessary to depart from the procedures. This implies a requirement for the engineer to have turned his mind to the procedures in the manual: that is, to have consciously considered the strategies provided for in the manual and to have rejected them as being appropriate to meet the flood mitigation objectives in the circumstances.
15. Section 8.4 “Flood Operations Strategies” makes it clear that the four strategies are “used” during the operation of Wivenhoe Dam in a flood event; and that the strategy used is “changed” in response to changing rainfall forecasts and stream flow conditions.
16. Section 8.4 provides:

There are four strategies (W1 to W4) **used** when operating Wivenhoe Dam during a flood event as outlined below. These strategies are based on the Flood Objectives of this manual.¹⁵
17. Section 8.4 then repeats the objectives, set out above.

¹⁴ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p6].

¹⁵ Bold added.

18. Section 8.4 contemplates that when one is within a strategy, then consideration must be given to these objectives. It states: “**Within any strategy**, consideration is always given to these objectives in this order, when making decisions on dam releases.” Being “within a strategy” clearly requires that the strategy has been invoked: that is conscious adoption. The notion of being “within” the strategy appears again later in 8.4 in the following way: “When determining dam outflows **within all strategies**, peak outflow should generally not exceed peak inflow.”¹⁶
19. Section 8.4 also states:
- The strategy **chosen** at any point in time will depend on the actual levels in the dams and the following predictions, which are to be made using the best forecast rainfall and stream flow information available at the time:
- Maximum storage levels in Wivenhoe and Somerset Dams.
 - Peak flow rate at the Lowood Gauge (excluding Wivenhoe Dam releases).
 - Peak flow rate at the Moggill Gauge (excluding Wivenhoe Dam releases).
20. **Strategies are likely to change during** a flood event as forecasts change and rain is received in the catchments. It is not possible to predict the range of strategies that will be used during the course of a flood event at the commencement of the event. **Strategies are changed in response** to changing rainfall forecasts and stream flow conditions to maximise the flood mitigation benefits of the dams.¹⁷
21. This terminology implies contemporaneous choice, such choice (and changes to that choice) being made by taking into account rainfall forecasts, flow conditions and maximum storage levels in the dam. The fact that the choice is to be informed by forecasts is compelling. It would be nonsensical

¹⁶ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p22: para 8.4], bold added.

¹⁷ Emphasis added.

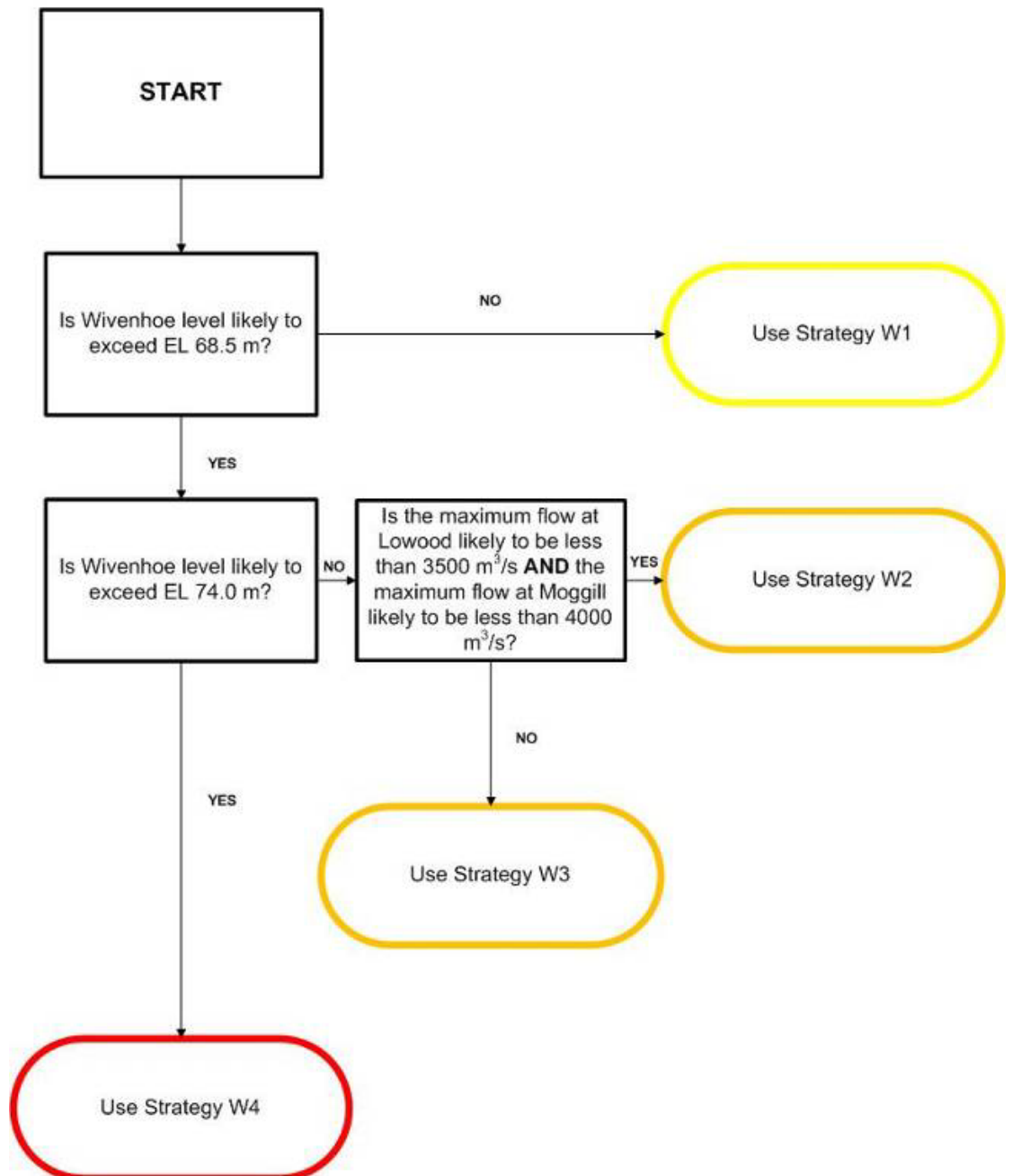
to suggest that a strategy could be determined retrospectively by reference to forecasts which were issued at some time in the distant past.

22. Section 8.4 expresses the active concept of contemporaneous selection of a strategy. It sets out a flow chart “showing how best to select the appropriate strategy to use at any point in time”.¹⁸
23. The flow chart is a “decision tree”, again requiring actual selection of strategy depending on the circumstances which are operating at any point in time. For example, if Wivenhoe is not likely to exceed 68.5 metres, it requires “use” of strategy 1; if it is likely to exceed 68.5, it requires further decision making down the tree.

¹⁸ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p23: para 8.4].

24. The flow chart appears below:¹⁹

WIVENHOE FLOOD STRATEGY FLOW CHART



¹⁹ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p23].

25. The language of the flow chart is clear. It directs the reader to actually use the relevant strategy. It is not something which can be designed after the event.

26. Mr Tibaldi's evidence on 15 April 2011 illustrates that point. He stated:

The flowchart is on page 23 and the sentence prior to the flowchart says: "A flowchart showing how best to select the appropriate strategy", so previously **we have got all our information together, now we're coming to the stage where we're going to select the appropriate strategy** - "a flowchart showing how to best select the appropriate strategy to use at any point in time is shown below." **So once you've got all your information together, now you have got to select your strategy, now you go to the flowchart.** You will notice in the flowchart that forecast is not mentioned at all, but the engineer that has to choose the strategy has to make an engineering judgment or a judgment about what is likely. He is asked essentially two questions about what is likely. The first question is about the likely level in Wivenhoe Dam. Again, he has got to make a judgment on what is likely. He can assign whatever weight his judgment feels worthy in terms of the forecasts. Now, as I said, generally given the great uncertainties in the QPF as provided by BOM, no weight is provided to those forecasts. However, as I said, there are three circumstances under which you may provide – assign some weight to those forecasts.²⁰

27. The manual then sets out the conditions when Strategy W1 is utilised, and the primary consideration which operates under it.²¹ It requires that there be a "switch" to W2 or W3 as appropriate if the level of Wivenhoe reaches EL 68.5 m AHD.²² Again, the word "switch" connotes contemporaneous thought and action.

²⁰ Transcript, John Tibaldi, 15 April 2011, Brisbane [p441: line 13-33], bold added.

²¹ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p24].

²² Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p26 – 27].

28. The manual provides that W2 is a “transition strategy”: the word “transition” connotes contemporaneous thought and planning. The manual sets out the conditions under which W2 can be invoked, and that, as a transition strategy, “the primary consideration changes from Minimising Impact to Downstream Rural Life to Protecting Urban Areas from Inundation”.²³
29. It provides that “the intent of Strategy W2 is limit the flow in the Brisbane River to less than the naturally occurring peaks at Lowood and Moggill, while remaining within the upper limit of non-damaging floods at Lowood”. “Intent” implies a state of mind which is directed to a desired result: that state of mind must necessarily be contemporaneous with events.
30. In respect of W3, the manual sets out the conditions for it being invoked, and the primary considerations when operating under it.²⁴ Again, the manual prescribes what must be the intent of the engineer while operating under it:
- The intent of Strategy W3 is to limit the flow in the Brisbane River at Moggill to less than 4000 m³/s, noting that 4000 m³/s at Moggill is the upper limit of non-damaging floods downstream.
31. As with W4, the manual sets out the conditions for it being invoked, the primary considerations operating and the intent of the strategy.²⁵
32. There is only one way to interpret the combined effect of these provisions: a Flood Operations Engineer was required, as a conscious act, to “choose” or “adopt” a strategy as defined by the manual.
33. That this is what is required was accepted by the flood operations engineers and Mr Allen:
- a. Mr Tibaldi accepted that a strategy must be adopted during the flood event:²⁶ he accepted that it is impossible but to read the manual as

²³ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p27].

²⁴ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p28].

²⁵ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p29].

requiring that a flood operation engineer make a choice of strategy during the event.²⁷

- b. Mr Ayre accepted that the manual requires the conscious choice of a strategy at the time the dam is being operated²⁸ and that compliance could not be achieved by retrospectively constructing a version of events as to the way the dam was managed.²⁹
 - c. Mr Malone agreed that for engineers operating the dam during a flood event, one of the strategies must be engaged,³⁰ but observed that some of the strategies are dictated by the lake levels and maximum releases (and thus don't require a conscious decision to be made to move to a particular strategy).³¹
 - d. Mr Ruffini accepted that the word "chosen" on page 22 of the manual means that the flood operations engineer on duty has to choose a strategy, that is, he has to make a conscious decision as to what is the appropriate strategy to apply.³²
 - e. Mr Allen agreed that the manual requires the adoption of a single strategy at any one time.³³
34. That choice of strategy will dictate the "primary consideration". This is necessarily a reference to the consideration which must be foremost in the mind of the Flood Operation Engineer when determining release rates. The manual then sets out the means by which this primary consideration objective is to be achieved. It does not permit merely having the primary

²⁶ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5069: line 31]. See also [p5071: line 10] where Mr Tibaldi agreed with the proposition that 8.4 of the manual says that there are four strategies used when operating the dam – operating, not when writing about it afterwards: [p5071: line 8]. See also [p5072: line 9]; [p5068: line 16], although, his view given in evidence, is that there was no requirement for the engineer operating the dam to actually turn their mind to the strategy which was applicable at any given time: [p5079: line 45].

²⁷ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5077: line 18].

²⁸ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5213: line 12]. See also [p5214: line 57] where Mr Ayre accepted that the manual requires the adoption of a strategy at the time of the event so there can be no mistake, if that is done, as to what the primary consideration was.

²⁹ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5213: line 12].

³⁰ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5296: line 27].

³¹ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5373: line 33].

³² Transcript, John Ruffini, 6 February 2012, Brisbane [p5421: line 55].

³³ Transcript, Peter Allen, 10 February 2012, Brisbane [p5904: line 56]. See also [p5924: line 4] where Mr Allen agreed with the proposition that "by requiring a conscious engagement of strategy, the manual requires the engineer on duty to adopt a particular state of mind, that is to say a particular primary consideration".

consideration in one's mind without having first consciously selected the strategy: there is more to a strategy than that.

2 The March report: a record of strategy choice

35. The manual requires Seqwater to prepare a report after each flood event, and that the report **must contain details of the procedures used**, the reasons therefore and other pertinent information.³⁴ Seqwater must forward the report to the chief executive of DERM within six weeks of the completion of the Flood Event.³⁵ The report prepared in purported discharge of these obligations is the March Report.
36. The March Report was constructed in such a fashion as to give the clear impression that the engineers had made choices of strategy during the flood event: that is they had consciously and overtly adopted the strategies referred to therein at the relevant time. The effect of the March Report is to paint a clear picture of compliance with the Manual.

The executive summary

37. The executive summary contains propositions that things were done “in accordance with the Manual”. In this regard, it includes the following statements:
- a. “During the January 2011 Flood Event, **operational decisions were made in accordance with the Manual.**”³⁶ (This proposition was also contained in the Conclusion.³⁷
 - b. The dam was operated “in accordance with the Manual”.³⁸
 - c. “The data collection and flood modelling systems used to support decisions made during the Event performed well and assisted informed decision-making, in accordance with the Manual.”
38. These statements, that the dam was operated in accordance with the Manual convey that there was compliance with all aspects of the Manual, including those aspects of the Manual which mandate selection of strategy during the event.

³⁴ Section 2.9 of the manual; page 8.

³⁵ Section 2.9 of the manual; page 8.

³⁶ Exhibit 24, The March Report [piii].

³⁷ Exhibit 24, The March Report [p223].

³⁸ Exhibit 24, The March Report [piv].

Express statements of strategy selection

39. Chapter 2 contains a series of tables covering a period of the flood event during which “there was a transition or change to the flood operations strategy used, as defined by the Manual.”³⁹ The paragraphs preceding the group of tables contains the following statement:

“Each table also provides a summary of relevant background information and a summary of the information **that was used to make decisions** during the period covered by the table. This information includes:

The strategy **used and/or adopted** during the period...”⁴⁰

40. The heading “Strategy” in the final column within those tables, and other entries, create the unambiguous impression that what is written reflects decisions to transition into and out of strategies were made during the flood event. Such entries include:

- a. Page 10, period between 7.42 am, 6 January 2011, until 2.00am, 7 January 2011, under heading “Background”: “Strategy W1A and Strategy W1B”.. *Transitioned from Strategy W1A to W1B once the Wivenhoe lake level exceeded 67.50 m.*
- b. Page 11, period between 2.00 am, 7 January 2011, until 9.00am, 7 January 2011, under heading “Background”: “Strategy W1B”... *Transitioned from Strategy W1B to W1C once the Wivenhoe lake level exceeded 67.75m.* Under heading “Strategy”: “Strategy W1B (Lake level greater than 67.50m, maximum release 380m³/s)”... *Water was held in Wivenhoe Dam in an attempt to keep Burtons Bridge trafficable, in accordance with Strategy W1B.*
- c. Page 12, period between 9.00am, 7 January 2011, until 3.00pm, 7 Jan 2011, under heading “Background”: “Strategy W1C”... *Transitioned from Strategy W1C to Strategy W1D once the Wivenhoe Dam lake level exceeded 68.0m.* Under heading “Strategy”: “Strategy W1C”... *Releases from Wivenhoe Dam were managed in an attempt to ensure Mt Crosby*

³⁹ Exhibit 24, The March Report [p9] (emphasis added).

⁴⁰ Exhibit 24, The March Report [p9] (emphasis added).

Weir and Fernvale Bridge remained trafficable, in accordance with Strategies W1D and W1E.

- d. Page 13, period between 3.00pm, 7 January 2011, until 2.00pm, 8 January 2011, under heading “Background”: “Transition from Strategy W1D to W1E to W3”... *Transitioned from Strategy W1D to W1E when the Wivenhoe Dam level exceeded 68.25m (22:00 on 7 Jan 2011). Transitioned from Strategy W1E to W3 as it became apparent Wivenhoe Dam level would exceed 68.5m (08:00 on 8 Jan 2011). Strategy W2 was by-passed as it was not possible to achieve this strategy by limiting the flow in the Brisbane River to less than the naturally occurring peaks at Lowood and Moggill. Under heading “Strategy”: “Strategy W3” ... The strategy transitioned from W1 to W3 as it became apparent Wivenhoe Dam level was likely to exceed 68.5m and Strategy W2 couldn't be applied. Strategy W3 also required lower level manual objectives to be considered...consideration was given to minimising disruption to downstream rural life and endeavouring to keep Mt Crosby Weir Bridge and Fernvale Bridge trafficable.*
- e. Page 14, period between 2.00pm, 8 January 2011, until 1.00am, 9 January 2011, heading “Background”: “Strategy W3”. Under heading “Strategy”: “Strategy W3”...*Strategy W3 required the flow at Moggill to be lowered to 4,000m³/s as soon as possible after the naturally occurring peak at Moggill (excluding Wivenhoe Dam releases). This was already achieved. Strategy W3 also required lower level Manual objectives to be considered. Therefore, with lake levels rising slightly (Wivenhoe Dam) and falling (Somerset Dam) consideration during this period remained on minimising disruption to downstream rural life and endeavouring to keep Mt Crosby Weir Bridge and Fernvale Bridge trafficable. Wivenhoe Dam outflows were more than doubling the natural peak flows at Moggill. Increasing releases from Wivenhoe Dam to produce a flow rate at Moggill of up to 3,000m³/s would have meant transitioning back to operating strategy W1 in around 18 hours from this time. Therefore, increasing Dam releases could not be justified given the resulting impacts such a flow would have downstream, especially on localised flooding in Brisbane.*

- f. Page 15, period between 1.00am, 9 January 2011, until 8.00am, 9 January 2011, heading “Background”: “Strategy W3”. Under heading “Strategy”: “Strategy W3”... *Strategy W3 required the flow at Moggill to be lowered to 4,000m³/s as soon as possible after the naturally occurring peak at Moggill (excluding Wivenhoe Dam releases). This was already achieved. Strategy W3 also required lower level Manual objectives to be considered. Therefore, with lake levels falling at both Dams, consideration during this period remained on minimising disruption to downstream rural life and endeavouring to keep Mt Crosby Weir Bridge and Fernvale Bridge trafficable. Wivenhoe Dam outflows were more than doubling the natural peak flows at Moggill. Increasing releases from Wivenhoe Dam to produce a flow rate at Moggill of up to 3,000m³/s would have meant transitioning back to operating Strategy W1 in around 18 hours from this time. Therefore, increasing Dam releases could not be justified given the resulting impacts such a flow would have downstream, especially on localised flooding in Brisbane.*
- g. Page 16, period between 8.00am, 9 January 2011, until 2.00pm, 9 January 2011, heading “Background”: “Strategy W3”, and heading “Strategy”: “Strategy W3”.
- h. Page 17, period between 2.00pm, 9 January 2011, until 7.00pm, 9 January 2011, heading “Background”: “Strategy W3”, and heading “Strategy”: “Strategy W3”.
- i. Page 18, period between 7.00pm, 9 January 2011, until 1.00am, 10 January 2011, heading “Background”: “Strategy W3”, and heading “Strategy”: “Strategy W3”.
- j. Page 19, period between 1.00am, 10 January 2011, until 9.00am, 10 January 2011, heading “Background”: “Strategy W3”. Under heading “Strategy”: “Strategy W3”... *The approach in the Manual which states the intent of Strategy W3 is to limit the flow in the Brisbane River at Moggill to less than 4,000m³/s and protect urban areas from inundation, was adopted. Advice received from Brisbane City Council that the upper limit of non-damaging floods was below the 4,000m³/s stated in the Manual was noted and taken into account in the decision making processes.*

- k. Page 20, period between 9.00am, 10 January 2011, until 3.00pm, 10 January 2011, under heading “Background”: “Strategy W3”... *At 15:00, the attempt to restrict Brisbane River flows at Moggill to 3,500m³/s was abandoned due to rainfall in the Dam catchments. A new target of 4,000m³/s was set in accordance with the Manual, on the basis that Strategy W3 intends to limit the flow in the Brisbane River at Moggill to less than 4,000m³/s and minimise urban damage.* Under heading “Strategy”: “Strategy W3”... *Continued to follow the approach in the Manual which states the intent of Strategy W3 is to limit the flow in the Brisbane River at Moggill to less than 4,000m³/s.*
- l. Page 21, period between 3.00pm, 10 January 2011, until 8.00pm, 10 January 2011, heading “Background”: “Strategy W3”. Under heading “Strategy”: “Strategy W3”... *The strategy continued to be not releasing flows that would cause high level urban inundation until it was certain it could not be avoided.*
- m. Page 22, period between 8.00pm, 10 January 2011, until 4.00am, 11 January 2011, under heading “Background”: “Strategy W3”... *In accordance with the Manual, a target flow of 4,000m³/s at Moggill was set on the basis of Strategy W3 to limit the flow in the Brisbane River at Moggill to less than 4,000m³/s.* Under heading “Strategy”: “Strategy W3”... *Consideration focused on protecting urban areas from inundation and minimising urban damage. The target maximum flow at Moggill remained 4,000m³/s. The approach in the Manual, which states the intent of Strategy W3 is to limit the flow in the Brisbane River at Moggill to less than 4,000m³/s, continued to be followed... At 21:00, the Dam Safety Regulator was asked for permission to exceed a level of 74.0m in Wivenhoe Dam for a short period (maximum 12 hours) without invoking Strategy W4, provided the safety of the Dam could be guaranteed.*
41. Chapter 4, “Flood event procedures” stated that “When the Flood Operations Centre was mobilised, the Duty Flood Operations Engineer ensured the following actions were undertaken:

“Determined gate operations strategies for Somerset and Wivenhoe Dams based on the resulting data from the operations spreadsheet and **in accordance with the strategies outlined in the Manual.**”⁴¹

42. Table 9.1.1 provides full details of inflows into and releases from Wivenhoe Dam for the duration of the January 2011 Flood Event. The Report then states “Details of the strategies used in determining these releases and how these strategies comply with the Manual are contained in Sections 2 and 10 of this Report.”⁴²

43. This asserts that strategies were “used” and that that use complied with the Manual. So too does the following statement from Chapter 10, “Flood Management Strategies and Manual Compliance”, section 10.4, ‘Wivenhoe Dam – Manual Compliance’:

Table 10.4.1 summarises **the strategies used** in the operation of Wivenhoe Dam during the January 2011 Flood Event and provides explanations of how **the use of these strategies complies with the Manual.**⁴³

44. Table 10.4.1 outlines the dates and times of when strategies were implemented in accordance with the Manual.⁴⁴ Relevant extracts from that table which show that the Report was representing that strategies had in fact been selected, and applied, are set out below:

- a. Page 187, period between 7.42 am, 6 January 2011, until 2.00 am, 7 January 2011, heading “Strategies used during the period”: “Strategy W1A”, under heading “Explanation of strategies used during the period”...
At the start of the Event, Strategy W1A was used because the lake level was between 67.25m and 67.60m... The strategy transitioned from Strategy W1A to Strategy W1B once the lake level exceeded 67.50m.
- b. Page 187, period between 2.00 am, 7 January 2011, until 9.00 am, 7 January 2011, heading “Strategies used during the period”: “Strategy W1B”, under heading “Explanation of strategies used during the period”...

⁴¹ Exhibit 24, The March Report [p41] (emphasis added).

⁴² Exhibit 24, The March Report [p153] (emphasis added).

⁴³ Exhibit 24, The March Report [p186] (emphasis added).

⁴⁴ Exhibit 24, The March Report [p187 - 195].

The strategy transitioned from Strategy W1A to Strategy W1B once the lake level exceeded 67.50m... The strategy transitioned from Strategy W1B to Strategy W1C once the lake level exceeded 67.75m.

- c. Page 188, period between 9.00am, 7 January 2011, until 3.00pm, 7 January 2011, heading “Strategies used during the period”: “Strategy W1C”, under heading “Explanation of strategies used during the period”... *The strategy transitioned from Strategy W1B to Strategy W1C once the lake level exceeded 67.75m... The strategy transitioned from Strategy W1C to Strategy W1D once the lake level exceeded 68.00m.*
- d. Page 189, period between 3.00pm, 7 January 2011, until 10.00pm, 7 January 2011, heading “Strategies used during the period”: “Strategy W1D”, under heading “Explanation of strategies used during the period”... *The strategy transitioned from Strategy W1C to Strategy W1D once the lake level exceeded 68.00m... The strategy transitioned from Strategy W1D to Strategy W1E once the lake level exceeded 68.25m.*
- e. Page 189, period between 10.00pm, 7 January 2011, until 8.00am, 8 January 2011, heading “Strategies used during the period”: “Strategy W1E”, under heading “Explanation of strategies used during the period”... *The strategy transitioned from Strategy W1D to Strategy W1E once the lake level exceeded 68.25m. The strategy transitioned from Strategy W1E to Strategy W2 once the lake level reached 68.50m.*
- f. Page 190, at 8.00am, 8 January 2011, heading “Strategies used during the period”: “Attempt to transition to Strategy W2”, under heading “Explanation of strategies used during the period”... *At this time, it was not possible to satisfy Strategy W2 by limiting the flow in the Brisbane River to less than the naturally occurring peaks at Lowood and Moggill. The calculated naturally occurring peaks at Lowood and Moggill were 530m³/s and 800m³/s respectively, whereas the release rate from the Dam at this time was 927m³/s. Accordingly, it was not appropriate to switch to Strategy W2, and Strategy W3 was adopted for use at 08:00 on Saturday 8 January 2011.*
- g. Page 191, period between 8.00am, 8 January 2011, until 8.00am, 9 January 2011, heading “Strategies used during the period”: “Strategy W3”, under

heading “Explanation of strategies used during the period” ... *The naturally occurring peak at Moggill was estimated to have occurred at 05:00 on 08 January 2011 (i.e. in the past). Strategy W3 requires the flow at Moggill to be lowered to 4,000m³/s as soon as possible after the naturally occurring peak at Moggill (excluding Wivenhoe Dam releases). This was already achieved. Strategy W3 also requires consideration of lower level Manual objectives, and on the basis of this requirement, consideration during this period was given to minimising disruption to downstream rural life and endeavouring to keep Mt Crosby Weir Bridge and Fernvale Bridge trafficable.*

- h. Page 192, period between 8.00 am, 9 January 2011, until 7.00 pm, 9 January 2011, heading “Strategies used during the period”: “Strategy W3”.
- i. Page 193, period between 7.00 pm, 9 January 2011, until 8.00 am, 11 January 2011, heading “Strategies used during the period”: “Strategy W3”, under heading “Explanation of strategies used during the period” ... *By two thirds of the way through this period (20:00, 10 January 2011), model results estimated Wivenhoe Dam to peak at 73.6m (excluding forecast) and 74.3m (including forecast). A discussion with the Dam Safety Regulator was held at 21:00 to obtain permission to exceed a level of 74.0m in Wivenhoe Dam for a short period without invoking Strategy W4 (provided the safety of the Dam could be guaranteed). This issue was considered carefully at all times during the period in view of the continued rainfall. At 04:00 on 11 January 2011, a period of intense rainfall commenced within the Wivenhoe Dam catchment area. By 08:00, model results estimated Wivenhoe Dam would peak at 74.5m (excluding forecast) and 75.1m (including forecast). A decision was made to transition to Strategy W4 and the Dam Safety Regulator, Seqwater CEO and the Councils were advised of this decision. The Wivenhoe lake level was 73.70m.*
- j. Page 194, period between 8.00 am, 11 January 2011, until 12.00 pm, 13 January 2011, heading “Strategies used during the period”: “Strategy W4”, under heading “Explanation of strategies used during the period” ...

On the basis of the information from the previous period, at the start of this period it was decided to transition to Strategy W4.

45. Of particular note is the following quote from chapter 16, “Review of the Manual’s Objectives and Strategies”. It is there stated:

“As discussed in detail in Section 10, a range of strategies were used during the Event, in accordance with the Manual. **Having to apply the strategies during such an extremely large and rare event provided the opportunity to consider how the strategies are worded from a practical sense.**”⁴⁵

Other Seqwater documents

46. The impression that strategies were selected and implemented during the flood event was reinforced by other material including:

- a. Its 11 March 2011 submission to the Commission, its executive summary states that:

“Seqwater acted carefully and in compliance with the terms of the approved flood mitigation manuals which outline the operational procedures to be followed during flood events. By observing the operational procedures contained in the flood mitigation manual, Seqwater does not incur civil liability for an act done, or omission made, honestly and without negligence in observing the procedures.”⁴⁶

- b. In the body of the submission, that the ‘Wivenhoe Flood Report (in section 10, and in the summary in section 2) identifies the steps taken by them throughout the January 2011 Flood Event. The explanation provided in those sections demonstrates that operational decisions were carefully considered and made in accordance with the Manual.’⁴⁷

⁴⁵ Exhibit 24, The March Report [p217] (emphasis added).

⁴⁶ Submission of Seqwater, 11 March 2011 [p9: para 34-35].

⁴⁷ Submission of Seqwater, 11 March 2011 [p48: para 187].

- c. Its 4 April 2011 supplementary submission to the Commission, which stated in relation to a criticism⁴⁸ that the ‘decision not to implement strategy W2 at period 4, and possibly subsequent periods, does not appear to comply with the Manual flow chart...’, Seqwater assert that there was no failure to comply because the requirements of strategy W2 could not be fulfilled at the relevant time, so the appropriate course was to invoke strategy W3, which they did.⁴⁹

- d. In the January 2011 report to the Minister, (see Part 5(c) *The report to the Minister*: “The table clearly suggests that the strategies were actually employed at the times indicated”).

⁴⁸ By Mr Leonard McDonald.

⁴⁹ Supplementary submission of Seqwater, 4 April 2011 [p43-44].

3 Evidence of strategy choice: the flood operations engineers

47. As noted above, the Wivenhoe manual demands that there be a conscious engagement of strategy by the engineer on duty – that one be ‘chosen’ and ‘implemented’. And as is demonstrated in the preceding section of these submissions, the March report is drafted and presented in such a way as to give the impression that this is exactly what happened.
48. At the outset, it is necessary to deal with the possibility that some party may advance the argument that, since the manual dictates that once the lake level is over 68.5 metres, there must be a change in strategy, then that is in fact what happened. A more perfectly circular argument would be difficult to compose. For the reasons identified above, the manual requires a conscious choice of strategy. A change in strategy does not occur independently of those operating the dam. It involves a state of mind – the current investigation involves the question of the extent to which relevant minds were engaged.

Gate openings on the morning of 8 January 2011

49. It is also convenient, at this point, to deal with suggestions made in the course of the hearings that the gate opening directives put in place for 8 January 2011 demonstrate that the flood engineers anticipated and intended that strategy W3 would be engaged at or around 8:00am on 8 January 2011.⁵⁰
50. This contention was most comprehensively ventilated through Mr Ayre. Mr Ayre said on 3 February 2012 that the decision to move to W3 was effectively made by Mr Ruffini at 5:00 am on 8 January 2011.⁵¹ He explained that Mr Ruffini analysed future inflows to the lake using a model, recognised that it would go above 68.5m and put in place directives that would inevitably result in W3 being engaged, as those directives resulted in releases that exceeded the naturally occurring flow at Lowood.⁵² Mr Ayre, who took over from Mr Ruffini as Duty Engineer and was the duty engineer

⁵⁰ Transcript, John Tibaldi, 3 February 2012, Brisbane [p5138: line 46].

⁵¹ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5213: line 9; p5214: line 58].

⁵² Transcript, Rob Ayre, 3 February 2012, Brisbane [p5212: line 5].

at 8:00 am, therefore did no more than implement Mr Ruffini's directives.⁵³

Mr Ruffini supported this account of events but acknowledged that he had not kept a record of that decision to go to W3.⁵⁴

51. On 11 February 2012, Mr Ruffini was taken to modelling and gate openings from the morning of 8 January 2011 by Counsel for Seqwater⁵⁵ and asked about his consideration of W2 based on this information⁵⁶:

Mr O'Donnell: Do you have a recollection of addressing based upon this information the availability of W2 if the lake level crossed 68.5?

Mr Ruffini: As I said I think the spreadsheets are a good record of my thinking at the time

Mr O'Donnell: What was your thinking at the time?

Mr Ruffini: That, you know, if we had held it back then we'd certainly - if we'd restricted it to those releases we wouldn't have got an appropriate drain, wouldn't have drained the storage within the seven days so we couldn't do it, and we were already - and we needed to go to the higher releases.

Mr O'Donnell: Did you draw any conclusions about strategy W2 or its availability?

Mr Ruffini: As I said, I - if you asked me now to have a direct recollection of that, as I said I can't say that today, sitting here today I can recall that, but you know when I look at this information then I would say yes, that is what I was thinking.

52. Notwithstanding Mr Ruffini's suggestion to the contrary, it is not possible to infer that Mr Ruffini had chosen W3 as the strategy on the morning of 8 January 2011 from this information.

53. The gate operations directed by Wivenhoe Directive 3⁵⁷ (issued by Mr Ruffini at 4.50am, 8 January 2011) and Wivenhoe Directive 4⁵⁸ (issued by Mr Ayre at 8.15am, 8 January 2011) are reflected in the gate operations

⁵³ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5213: line 57].

⁵⁴ Transcript, John Ruffini, 6 February 2012, Brisbane [p5390: line 16] [p5396: line 8].

⁵⁵ Transcript, John Ruffini, 11 February 2012, Brisbane [p6082: line 42].

⁵⁶ Transcript, John Ruffini, 11 February 2012, Brisbane [p6084: line 53].

⁵⁷ Exhibit 24, Appendix L [p4].

⁵⁸ Exhibit 24, Appendix L [p5].

spreadsheets relevant to model run 8⁵⁹ (3.00pm on 7 January) and model run 9⁶⁰ (7.00am on 8 January) and the operational version spreadsheet titled 'SDWD-201101071800'⁶¹ which was presumably saved at 6.00pm, 7 January 2011. Assuming that these spreadsheets have been accurately recreated and saved and not otherwise amended, it follows that Mr Malone, who was on shift for model run 8, must have decided those gate openings were appropriate moving into the future.

54. The 'without forecast' model run at 3.00pm on 7 January does not predict that the lake level will ever exceed 68.5 metres; the maximum lake level predicted is 68.4 metres. Therefore, Mr Malone was operating in W1 with no expectation of moving to W2 or W3 when he set those gate opening sequences. That these gate openings were then implemented by Mr Ruffini (who allegedly predicted the move to W3) and Mr Ayre (who transitioned to W3 at 8.00 am on 8 January according to the March flood event report) cannot lead to the conclusion that the gate openings were referable to a decision to adopt strategy W3. On their face, the directives show the continuation of the gate openings determined the previous evening as appropriate for W1.
55. Even if the directives put in place by Mr Ruffini were consistent with an eventual transition to W3, that says nothing about whether such a transition in fact occurred. That the lake level was predicted to exceed 68.5 metres means that the flood engineers should have switched to strategy W3 in light of the releases. It is relatively easy to conclude what the flood engineers should have done; to reach that conclusion does not achieve a determination of what they actually did.

⁵⁹ Exhibit 524, Attachment 34, Full time-series sets and spreadsheets used to create the values and graphs contained in Appendix A to the January 2011 Flood Event Report on the Operation of Wivenhoe and Somerset Dams and the document named 'Appendix A1', Run 8 (no rainfall spreadsheet – 'SDWD-run8_nr').

⁶⁰ Exhibit 524, Attachment 34, Full time-series sets and spreadsheets used to create the values and graphs contained in Appendix A to the January 2011 Flood Event Report on the Operation of Wivenhoe and Somerset Dams and the document named 'Appendix A1', Run 9 (no rainfall spreadsheet – 'SDWD_run9_nr').

⁶¹ Exhibit 524, Attachment 34, Full time-series sets and spreadsheets used to create the values and graphs contained in Appendix A to the January 2011 Flood Event Report on the Operation of Wivenhoe and Somerset Dams and the document named 'Appendix A1', 'SDWD-201101071800' in folder titled 'Operational Versions'.

56. There are however, different ways in which it might be proved that, to the extent that it is said to demonstrate compliance with the manual, the March Report is accurate. This could occur upon acceptance of direct evidence from the engineers themselves, that there was in fact, conscious, deliberate selection of strategy.
57. Alternatively, it might be open to infer from evidence as to what they ‘would have done’ or what the practice ‘would have been’, that such selection occurred.
58. The qualifications in placing any reliance upon evidence in this latter category is that it relies for its efficacy on the facts:
- a. that there is some sort of well established practice, and
 - b. that those practising were so well drilled in their application of the practice as to leave little room for doubt that it was followed on the given occasion.

Mr Tibaldi

59. Mr Tibaldi was the principal author of the March report: the impression it creates is discussed above. Unsurprisingly, Mr Tibaldi’s evidence did not deviate from the account presented in the March report. In his statement of 25 March 2011, he represented that W3 was ‘adopted’ at about 8.00 am on Saturday 8 January 2011.⁶² The same word, ‘adopt,’ was used in relation to strategy W4,⁶³ indeed, in that same statement, the decision to adopt W4 was described as a ‘formal’ one.⁶⁴
60. In dealing with W2, Mr Tibaldi confirmed that it was ‘bypassed’.⁶⁵ It was, he said, simply not possible ‘to invoke’ that strategy ‘in a practical sense’. The relating of the decision to ‘practical’ considerations reinforces the notion that it was something done ‘in practice’, and does not suggest that it was a part of an academic exercise after the event.

⁶² Exhibit 51, Statement of John Tibaldi, 25 March 2011 [p : para 34].

⁶³ Exhibit 51, Statement of John Tibaldi, 25 March 2011 [p8: para 38].

⁶⁴ Exhibit 51, Statement of John Tibaldi, 25 March 2011 [p11: para 54].

⁶⁵ Exhibit 51, Statement of John Tibaldi, 25 March 2011 [p11: para 62].

61. Mr Tibaldi did not attempt to support the impression created by the report with any direct evidence to the effect that he recalled engaging strategies at any particular time. His memory, he said, did not now permit him to do so⁶⁶ – there were many questions asked of him about matters which he said he could not now recall. In terms of the way the dams were in fact operated, then, the most Mr Tibaldi could do is say what ‘would have’ happened.
62. As noted above, it is open to act on such evidence and reason from it a conclusion about what did in fact happen. However, Mr Tibaldi offered little in this kind of evidence to support the proposition that there was active engagement with strategy selection during the operation of the dam. The failure to document strategy selection is established. It was not standard practice to discuss it at handover.⁶⁷ There was no acknowledgement of any requirement that a discrete act of strategy selection be undertaken during a flood event.
63. The overall effect of his evidence was that for so long as lake levels were monitored and releases calculated, the ascription of strategy selection to particular times was something which could wait until after the event.
64. While the statements referred to in the report and paragraphs above are clearly contrived to create the impression that an actual decision was made about W3 during the flood event, Mr Tibaldi’s evidence does not, on any analysis, advance the proposition that it was.

Mr Ayre

65. In his statement of 23 March 2011, Mr Ayre included a table which set out a ‘summary of strategies **implemented**.’⁶⁸ It includes a column which records the ‘Time of Transition’.
66. Similarly, his statement of 11 April 2011 listed⁶⁹ the ‘**actual times** strategies were **implemented**’⁷⁰ by the flood operations centre. This information was consistent with and reinforced the effect of the March Report.

⁶⁶ Exhibit 51, Statement of John Tibaldi, 25 March 2011 [p11: para 62].

⁶⁷ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5051: line 47].

⁶⁸ Exhibit 17, Statement of Robert Ayre, 23 March 2011 [p84: para 384]. Bold added.

67. Further, in his sworn testimony Mr Ayre indicated that W3 was ‘engaged’ with the directive issued by Mr Ruffini, which would have been ‘during the handover ... between John (Ruffini) and I’.⁷¹
68. His evidence was that by 8.00 am on 8 January 2011 he had transitioned into W3,⁷² It was engaged at that time.⁷³ All such statements suggested the making of conscious decisions as required under the Wivenhoe manual.⁷⁴ So too does paragraph 44 of his seventh statement which says:
- I also noted that the predicted peak lake level was above the limit of application of strategy W1 and therefore I would need to transition to a higher strategy W2 or W3.
69. If the impression created by this evidence was to be accepted, then the position would be quite clear, and compliance with the Wivenhoe manual, in respect of the transition out of W1, would be established.
70. However other aspects of Mr Ayre’s own evidence call into question whether the engagement of strategies was a conscious act at any stage. Indeed, one of the clearest statements made about the strategies, anywhere in the evidence, is Mr Ayre’s acknowledgement that ‘strategy labels are generally only attributed after the event as part of the reporting process’.⁷⁵
71. This concession is consistent with all that is known about the creation of the March report, and betrays, at the very least, indifference towards the proposition that the manual demands the actual adoption of a strategy during the event.
72. There is in fact evidence which suggests Mr Ayre did not believe that there was a need for any particular thought process or analysis to occur at the

⁶⁹ Exhibit 20, Statement of Rob Ayre, 11 April 2011 [p25: para 120].

⁷⁰ Bold added.

⁷¹ Transcript, Robert Ayre, 12 April 2011, Brisbane [p155: line 39-49].

⁷² See Transcript, Robert Ayre, 3 February 2012, Brisbane [p5183: line 18-30]; Transcript, Robert Ayre, 12 April 2011, Brisbane [p156: line 15; p172: line 13].

⁷³ Transcript, Robert Ayre, 12 April 2011, Brisbane, [p172: line 16].

⁷⁴ See Transcript, Robert Ayre, 3 February 2012, Brisbane [p5209].

⁷⁵ Exhibit 1049, Statement of Robert Ayre, 1 February 2012 [p5: para 28].

point of moving out of W1. He acknowledged that, when he was actually at that point, he could not consciously recall knowing whether he was in W2 or W3.⁷⁶ There was, he said, ‘nothing ... which would have prompted’ him to make a decision.⁷⁷ He guessed that he ‘wasn’t really contemplating anything other than we weren’t in W1’.⁷⁸

73. Such statements are, of themselves, enough to preclude reliance upon Mr Ayre’s representations that strategies were actually implemented during the event. Indeed, any suggestion that there was conscious engagement of strategy was laid to rest in the following exchange:⁷⁹

Q: I just want to clarify this. Is it your evidence that while the flood engineer is managing the flood, the flood engineer does or does not have in mind, ‘What is the current strategy I’m using?’

A: I believe we are aware of the objectives. We are aware of all of the associated parameters or conditions that describe the relevant strategies but do I go around necessarily thinking W3? No, not necessarily.

74. It is as well also to include here reference to the following exchange:⁸⁰

Q: On the basis of your evidence we’ve discussed before, your role as flood engineer wasn’t one of deciding to transition it to the higher strategy, your role was to use the higher strategy in managing the dam for the balance?

A: Yes

Q: ..while the water remained over 68.5?

A: On that occasion, yes.

⁷⁶ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5220: line 50].

⁷⁷ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5190: line 4-48].

⁷⁸ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5190: line 30-32].

⁷⁹ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5273: line 50-60].

⁸⁰ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5266: line 47 - p5267: line 23].

Q: And you've given evidence yesterday in your earlier statements that you were conscious that the water level had gone over 68.5 and, therefore, you were required to apply a higher strategy?

A: Yes

Q: And you also said in evidence yesterday that during that day, you appreciated your primary consideration had to be protection of urban inundation?

A: Yes.

Q: And do you have a natural recollection of those being your thoughts on Saturday, the 8th, while acting as a flood officer?

A: Yes. I suppose having done the previous Thursday night shift and also having talked to Terry Malone when the event was being mobilised and, indeed, when Terry first proposed a strategy at the start of the event, I was very much aware that the sequencing they were putting in place was going to be designed to meet the objective as such.

Q: So it's your sworn evidence to the Commission that during your shift on the Saturday, after 8 am, you were conscious that you had to apply a higher strategy?

A: Yes. I was conscious that we were looking at the objective of optimising the protection of urban areas.

Q: And that you did apply the higher strategy in managing the dam during your shift?

A: I believe I did, yes.

75. The proposition might be advanced that, by consciously engaging with the requirement that protecting urban areas from inundation was an objective,

and asserting that a 'higher strategy' was applied, there was no breach occasioned merely by the failure to refer to the term 'W3'.

76. There are difficulties in allowing that this proposition could be supported by evidence such as the passage just quoted.
77. First, the evidence that a 'higher strategy' had been applied would be more convincing had it not taken form as an adoption of a leading question during sympathetic cross-examination. Especially is this so when, in answer to the question about being conscious of the need at 8.00 am, to apply a higher strategy, the answer given: 'I was conscious that we were looking at the objective of optimising the protection of urban areas' was free of the term 'primary consideration'.⁸¹ That answer could as well have been given in response to any question about 'consciousness' during any strategy, since all objectives must be always considered, albeit in differing orders.
78. Second, while, the singularity of the primary consideration in W3 is obvious, the same cannot be said about W2. To acknowledge that there was a need for a 'higher strategy' does not establish that the move from W1 has been effected according to the manual, which requires a choice between W2 and W3.
79. Third, to have force, the whole of the evidence would need clearly to demonstrate that all relevant thoughts were now free from W1. As will be seen below, that is simply not the case. Indeed, the existence of the 5:53 pm situation report, the inference to be drawn from it and the evidence given about it all point to a conclusion that if any strategy was dominating thought processes at the time, it was W1. This is discussed below.
80. If, notwithstanding Mr Ayre's concessions, the argument is advanced that, since he was a senior and experienced flood engineer, there can be no doubt that his immediate response to a 68.5 metre lake level would have been to snap over to W3. The evidence does not, however, permit that conclusion about his state of mind. Even if the circumstances had warranted it, he was

⁸¹ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5267: lines 18-20].

not at all experienced in making the transition to W3.⁸² His instant recognition of the situation he was in cannot be assumed.

81. Parts of Mr Ayre's statements and evidence were clearly calculated to give the impression that decisions about strategies were in fact made at the time of the event. In determining whether this evidence should be acted upon, it would be open to have regard to all aspects of the evidence which have a legitimate impact on Mr Ayre's credibility. These include his 'recent invention' of an explanation for his entry in the 8 January Situation Report and his inconsistent and unconvincing accounts of the email which forwarded the 'Strategy summary log'.
82. For current purposes, however, regard need only be had to Mr Ayre's own concession about the 'labelling process' and the uncertainties he experienced as between W2 and W3. Those are a sufficient basis upon which to conclude that his previously unqualified assertions about the 'engagement' and 'implementation' of W3 cannot be accepted.

Mr Malone

83. Mr Malone's oral testimony⁸³ was that:⁸⁴
 - a. during the flood event, 'you'll be adopting different strategies at different time', one or other of them;
 - b. whenever you are in a flood event, you are adopting and applying a strategy;
 - c. a strategy involves a state of mind, that is to say, a primary consideration; and
 - d. whoever is operating the dam must have a primary consideration in their mind at any one time during the flood event.

⁸² Transcript, Robert Ayre, 3 February 2012, Brisbane [p5208: line 8].

⁸³ By direct responses; and accepting propositions put to him.

⁸⁴ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5296: line 41-52].

84. He also asserted that he knew as a fact that, when came on duty at 7.00 am on 9 January 2011, the dam was operating in W3. He knew that because ‘it would have been discussed at the handover that morning’.⁸⁵
85. He later allowed that he did not recall any specific conversation about strategy.⁸⁶
86. Interestingly, he affirmed that W3 was ‘operated’ from about 8.00 am on Saturday 8 January until it was realised on the Sunday night that the lower level objective of keeping bridges open was no longer feasible.⁸⁷ On any version, W3 was (or ought to have been) applicable long after Sunday night. In any case, the overall effect of Mr Malone’s testimony is that W3 was ‘operated’ well until the Tuesday morning. For current purposes it is enough to record that within this affirmation there is an implied assertion that Mr Malone was ‘operating’ the dam in W3 during his shift which began at 7.00 am on Sunday 9 January.
87. He also gave evidence that he knew the basic requirements for the determination of strategies of the lake levels and the flow rates – and did not need to turn to the Wivenhoe manual to ‘see what were the requirements for W2 or W3’.⁸⁸
88. If this were in fact so, it would support the proposition that conscious engagement of strategy was easily done, and not something which required much active mental effort. If that was accepted, it might be a small step to infer that there was compliance.
89. However, this assertion should be contrasted with his response when it was put directly to Mr Malone that he had, during the January 2011 event, no real appreciation of what was involved with the strategy W2.⁸⁹ His answer, even

⁸⁵ Transcript, Terrence Malone, 15 April 2011, Brisbane [p379: line 45-55].

⁸⁶ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5299: line 5].

⁸⁷ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5356: line 26].

⁸⁸ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5356: line 1].

⁸⁹ Transcript, Terrence Malone, 11 February 2012, Brisbane [p6094: lines 35-40].

when read in conjunction with the elaborations which followed,⁹⁰ provides no confidence that he did.

90. Other parts of Mr Malone's testimony also raise doubt about the proposition that there was any conscious engagement of strategy by anyone, at least during 8 and part of 9 January 2011. His evidence about his own state of mind, as at the start of his shift on 9 January 2011, does not suggest that he had attempted any differentiation between W2 or W3.⁹¹

91. This is consistent with his evidence that, as at the time he wrote the report for Mr Borrows on 15 January 2011,⁹² he did not 'think anyone had decided that we'd clearly skipped W2'⁹³ and that his impression was that no-one was really sure when W2 or W3 was engaged.⁹⁴

92. Mr Malone's testimony about his consideration of the report by Mr Cooper is also noted. Mr Malone said he read Mr Cooper's report during the flood event. That report contained a statement that 'W2 would have been in place' a day or so before 12 January 2011. Mr Malone said that, while 'there were some questions' about Mr Cooper's discussion of the application of strategies, he saw 'nothing untoward' in the report; nor did anything stand out as requiring his attention.⁹⁵

93. Mr Malone's testimony provides no acceptable evidence, direct or indirect, that strategies were engaged as required, nor did he establish any basis from which it could be inferred that they must have been.

Mr Ruffini

94. Mr Ruffini affirmed, in his statement of 24 March 2011, that details of **what happened** at the Flood Operations Centre were set out on pages 41 to 44 of the Seqwater Report.⁹⁶ These references to page numbers within the

⁹⁰ Transcript, Terrence Malone, 11 February 2012, Brisbane [p6099: lines 1-10, 45]; Transcript, Terrence Malone, 11 February 2012, Brisbane [p6100: line 20].

⁹¹ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5300: lines 28-38].

⁹² This report was emailed to the flood operations engineers and Mr Drury at 1.02 pm on 15 January 2011 (Exhibit 1050).

⁹³ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5306: lines 2-4].

⁹⁴ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5329: lines 1-46].

⁹⁵ Transcript, Terry Malone, 11 February 2012, Brisbane [p6095: line 5 – p6096: line 35].

⁹⁶ Exhibit 42, Statement of John Ruffini, 24 March 2011 [p12 :para 75].

Seqwater report may have been made in error, but it is clear from Mr Ruffini's oral testimony that he had read through the main body of the report, including going through the section concerning compliance with the Wivenhoe manual. He stated that he endorsed that section as being accurate, and had no reason now to think it was not accurate.⁹⁷

95. He asserted that the dams were operated in accordance with the Wivenhoe manual.⁹⁸ In his 29 March 2011 interview with the Commission he said that he had been through 'the compliance with the Wivenhoe Manual stuff'⁹⁹ and allowed only that 'there well could be little errors'.¹⁰⁰ When taken through the flood event summary,¹⁰¹ his attention was drawn to the entry on page 13 which recorded that 'Strategy 2 was bypassed'¹⁰² and explained the dam drain down requirements to the questioner.
96. Mr Ruffini began his recent testimony by giving what appeared to be direct evidence that, during the shift which concluded at 7.00 am on Saturday 8 January 2011 he 'started to transition into the W3 strategies'.¹⁰³ He also made reference to what he 'would have' done¹⁰⁴ and what his 'general practice' was.¹⁰⁵
97. However, his true state of mind was revealed when questioned about the March report. Mr Ruffini swore that Mr Tibaldi, after describing the method adopted for writing the report and putting all the information together, provided it to the other engineers to see if it 'matched their recollection'. Mr Ruffini responded by telling him that it did match his recollection. In this regard, his oral testimony was as follows:¹⁰⁶

Q: What did you say in response to the query as to whether or not it matched your recollection?

⁹⁷ Transcript, John Ruffini, 6 February 2012, Brisbane [p5413: lines 25-45].

⁹⁸ Exhibit 42, Statement of John Ruffini, 24 March 2011 [p11: para 63].

⁹⁹ Exhibit 43, interview transcript of John Ruffini, 29 March 2011 [p45: lines 13-14].

¹⁰⁰ Exhibit 43, interview transcript of John Ruffini, 29 March 2011 [p45: line 18].

¹⁰¹ Chapter 2, page 10 of the March report.

¹⁰² Exhibit 43, interview transcript of John Ruffini, 29 March 2011 [p47: line 36].

¹⁰³ Transcript, John Ruffini, 5 February 2012, Brisbane [p5385: line 50].

¹⁰⁴ Transcript, John Ruffini, 6 February 2012, Brisbane [p5394: lines 1-57].

¹⁰⁵ Transcript, John Ruffini, 6 February 2012, Brisbane [p5391: line 25].

¹⁰⁶ Transcript, John Ruffini, 6 February 2012, Brisbane [p5414: lines 31-47].

A: When I reviewed it I thought what he had written was accurate.

Q: Did you say, 'yes, that matches my recollection?'

A: Did I say, 'That matches my recollection?'

Q: Yeah. That was the question he asked you?

A: Well, yeah, I would think – did I – yes, I think that – well, obviously, yeah, I would have said that, yeah.

Q: So you told him, 'Yes, that does match my independent recollection?'

A: That matches my recollection, yeah.

Q: So it wasn't the case that you looked at it and came up with what your recollections were?

A: No. Well, I don't remember at the time as to – like, if he didn't remember – are you saying, okay, if we didn't remember at the time exactly what we were doing.

98. The confusion at this point may have been triggered by memory of his earlier evidence that his state of mind, at least in so far as it related to strategies, was a deduction¹⁰⁷ at which he arrived after looking at the March report in order to come up with his 'recollections'.
99. In any event, overall, he made it clear that he did not mean, by any evidence he gave, to give the impression that he had an actual recollection of strategy engagement at the time.¹⁰⁸ The only real interpretation of his evidence is that Mr Tibaldi's report achieved a complete displacement effect, whereby Mr Tibaldi's conclusions were substituted for any independent recollection Mr Ruffini may have left.
100. There is no direct evidence then, in Mr Ruffini's account, of engagement with strategies.

¹⁰⁷ Transcript, John Ruffini, 6 February 2012, Brisbane [p5398: line 50 – p5399: line 5].

¹⁰⁸ Transcript, John Ruffini, 6 February 2012, Brisbane [5390: line 38; p5397: line 20].

Conclusion

101. The net effect of the evidence which might positively support the proposition that there was engagement of strategies, and therefore compliance with the manual, may be summarised as follows:
- a. To the extent that any witness has endorsed or adopted the March report, that is some direct evidence that strategies were adopted and implemented as described in that report.
 - b. There are also, in the evidence, some direct claims to have actually engaged strategies during the event. In particular, Mr Ayre has made statements and given evidence to the effect that W3 was in fact implemented at 8.00 am on 8 January 2011.
 - c. However, all such evidence is so tainted by contradiction and confusion as to provide no basis for a conclusion that strategies were consciously selected.
 - d. There is no evidence of any system or habit which would allow for the conclusion that strategies ‘would have’ been adopted as required. The absence of any clear understanding as to whether W2 or W3 was in place demonstrates the further absence of any ‘innate’ understanding as to that which was required.
 - e. Compliance cannot be established by an assumption that it must have occurred.
102. The absence of evidence establishing compliance with the manual does not compel the view that there was non-compliance. Such a view, if it can be formed, would have to be supported by inferences drawn from other circumstances, consideration of which follows below.

4 Evidence of strategy choice: the objective facts

Situation Report at 5.53 pm on 8 January 2011

103. At 5.53 pm on 8 January 2011, a situation report was sent from the Duty Engineer email account by Mr Ayre.¹⁰⁹ In that situation report, under the heading: Forecast Scenario – Based upon mid-range rainfall forecasts, the first paragraph stated:

Assessments have been undertaken to determine possible increases to releases given the high likelihood of significant inflows in the next few days. The interaction with runoff from the Bremer River and Warrill Creek catchment is an important consideration as **the event magnitude will require the application of Wivenhoe Dam flood operation strategy W2** (Transition strategy between minimizing downstream impacts and maximizing protection to urban areas).

Projections based upon the forecast rainfalls suggest flows of up to 1,200 m³/s will emanate from the Bremer River catchment. If similar rainfall magnitudes occur in the Upper Brisbane and Stanley Rivers then increased releases may be required from both Somerset Dam and Wivenhoe Dam. Preliminary projections suggest that such a forecast will extend the release duration until next Saturday 15 January, but mid-Brisbane River flows will be kept to a maximum of 1,800 m³/s. However, if falls are greater than those forecast releases from Wivenhoe Dam may need to adversely impact Mt Crosby Weir Bridge (1,900 m³/s) and possibly Fernvale Bridge (2,100 m³/s) but will be maintained below 3,500 m³/s.

[emphasis added]

104. Mr Ayre accepted that he was not speaking, in that paragraph, about a move directly from W3 to W2.¹¹⁰ Mr Ayre's most recent explanation, on 3 February 2012, for this entry was:

It is possible that based on the forecast rainfall and the temporal distribution of that forecast rainfall, current release rates will drive the lake level down below the threshold limit, back into W1, and then with the rainfall that was coming through on the Sunday and the Monday, you would be back up into the range again. However, this time the forecasted peaks in the Lockyer

¹⁰⁹ Exhibit 1047, Situation report, 8 January 2011 at 5:53pm.

¹¹⁰ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5184: line 17].

and the Bremer will be much higher than what they were
previously.¹¹¹

105. In essence, Mr Ayre's 3 February 2012 explanation was that the strategy in use on the afternoon of 8 January 2011 was W3 but the paragraph flagged the possibility of having to move from the W1 strategy to the W2 strategy after the strategy had changed from W3 to W1 as a result of a fall in the lake level.¹¹² There was some internal inconsistency in Mr Ayre's evidence on 3 and 4 February 2012 as to when he was foreshadowing a change to W2. He initially said that they would get back to W2 on 'Sunday night, Monday'¹¹³. When he was later asked whether he was 'saying that there was a possibility that you might get into W2 the following Tuesday' he replied 'Possibility'.¹¹⁴ The following day, Mr Ayre was asked, 'if the rainfall came with the inflows on Tuesday or Wednesday increasing the lake level, if it goes back above 68.5, you're back in either strategy two or three?' Mr Ayre responded, '[y]es, that's correct.'¹¹⁵
106. Even Mr Ayre was prepared to accept that the entry was a 'bit cryptic'.¹¹⁶
107. In favour of this most recent explanation by Mr Ayre is that the paragraph comes under the heading 'Forecast Scenario – Based upon mid-range rainfall forecasts'.
108. However, there are a number of problems with Mr Ayre's recent explanation.
109. First, it is inconsistent with Mr Ayre's previous explanation for the entry. When he appeared before the Commission on 12 April of last year and was asked about this entry, Mr Ayre said, 'That was an error on my behalf.'¹¹⁷ Mr Ayre then went on to say:

¹¹¹ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5223: line 28].

¹¹² Transcript, Robert Ayre, 3 February 2012, Brisbane [p5185: line 28].

¹¹³ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5188: line 57].

¹¹⁴ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5223: line 46].

¹¹⁵ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5276: line 39].

¹¹⁶ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5225: line 41].

¹¹⁷ Transcript, Robert Ayre, 12 April 2011, Brisbane [p172: line 14].

- a. 'I was certainly contemplating, at the time I wrote that, that we were in transition between strategy W1 and W3'.¹¹⁸
 - b. 'I do acknowledge that I had inadvertently recorded strategy W2 at that point in time but recognise that that wasn't correct, we had transitioned into W3 earlier in the day'.¹¹⁹
 - c. at the time he would have thought they were applying strategy W2 'otherwise I wouldn't have put it in the situation report'.¹²⁰
110. Mr Ayre's explanation to the Commission, in April 2011, that he mistakenly thought on the afternoon of 8 January 2011 that strategy W2 was in operation is irreconcilable with his explanation on 3 February 2012 that he knew strategy W3 was being used on the afternoon of 8 January 2011 and he was intending to communicate, in the 5.53 pm situation report, that the strategy might change to W2 **after** first falling from W3 to W1.
111. This inconsistency was put to Mr Ayre. His explanation was that he thought he may have been confused by the line of questioning in April 2011 and 'it was a confusion between what the current situation was or what we were talking about in that forecast scenario.'¹²¹
112. In particular, on 3 February 2012, Mr Ayre attempted to explain his answer on 12 April 2011 that 'I had inadvertently recorded strategy W2 at that point in time but recognise that that wasn't correct, we had transitioned into W3 earlier in the day' as the product of confusion:¹²²

Mr Ayre: Again, it was the context of were we talking about the future operation or the point - or what we were actually implementing at the time.

Mr Callaghan: Well, I'm sorry, but the question is did you think that you were applying strategy W2?

¹¹⁸ Transcript, Robert Ayre, 12 April 2011, Brisbane [p172: line 21].

¹¹⁹ Transcript, Robert Ayre, 12 April 2011, Brisbane [p172: line 33].

¹²⁰ Transcript, Robert Ayre, 12 April 2011, Brisbane [p172: line 47].

¹²¹ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5189: line 32].

¹²² Transcript, Robert Ayre, 3 February 2012, Brisbane [p5190: line 83].

Mr Ayre: Well, I was applying strategy W2 in the forecast scenario, yes.

113. That answer is disingenuous. It is plain that Mr Ayre was saying on 12 April 2011 that he had been mistaken when he recorded W2 on 8 January 2011 because the strategy on that day was already W3. There is no room for interpreting his 12 April 2011 evidence as the product of confusion. The questions are clear. The answers are clear. Mr Ayre's attempt to say otherwise on 3 February 2012 is troubling.
114. The second problem with Mr Ayre's recent explanation is that, on his own account, the move to W3 was a relatively rare and significant event.¹²³ He could not recall having operated under the W3 strategy before it was implemented, he says, on the morning of 8 January 2011.¹²⁴ He made no contemporaneous record of having transitioned to this strategy under which, he says, he had never operated in the past. Rather, on his evidence, when he did make a reference in a record to any strategy on 8 January 2011, it was not of the then applicable and surely significant strategy, not of the next strategy that he anticipated would be engaged, but of a strategy that he forecast might be employed after that next strategy. That is a difficult proposition to accept.
115. The third problem with Mr Ayre's explanation is that it necessitates acceptance of clear foresight as to the need for a change from W3 down to W1 and back to W2, and the means by which this would occur. This seems inconsistent with his evidence that he did not distinguish on Saturday, 8 January 2011 between W2 and W3:
- a. 'I can't record [sic] with clarity - there was nothing at that point in time that I needed to distinguish between Strategy W2 or W3.'¹²⁵
 - b. 'I was conscious that we weren't in W1. I knew we had transitioned. I wasn't necessarily - I can't recall right now whether at 8 o'clock on Saturday the 8th of January I was consciously aware that we were in W3.'

¹²³ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5208: line 8].

¹²⁴ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5208: line 14].

¹²⁵ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5213: line 44].

I know we'd transitioned out, but there was nothing happening at that time that meant that I needed to differentiate between strategy W2 or W3.¹²⁶

- c. 'Well, all through the day I guess the volume that we had to manage was effectively the same. There was no additional rainfall on the catchment, so there was no real decision to be made necessarily once I put that gate sequence in place. Nobody asked me what strategy we were in, so I guess I didn't really need to actually know at that point, I suppose.'¹²⁷

116. The fourth problem is that the words, as written and in context, seem incapable of conveying the information that Mr Ayre now says they were meant to convey. Mr Ayre's evidence was that what he had written 'was predominantly a heads-up, I suppose, more internally for John Tibaldi, but it was basically to give people an idea that there was certainly more rain coming, but the current strategy could – adopted – sorry, adapt to it relatively straightforward. The W2 reference is pretty meaningless, I suppose, for most people in that context.'¹²⁸ Yet, on Mr Ayre's most recent explanation:

- a. 'will' should be understood as 'may'
- b. there was no indication of a fall to W1
- c. the reference to W2 is, as Mr Ayre suggests, 'pretty meaningless'. It conveys nothing to the reader because the strategy of W3, that Mr Ayre says was in place at the time, already required that the primary consideration was protecting urban areas from inundation, and provided for the possibility of higher release rates than under W2.

117. To attempt to construe the words as conveying a need to go to W2 after a fall to W1 from W3 is fanciful. The entry should be interpreted as its natural meaning would suggest: the next strategy that will be required is one which involves a transition of primary considerations appropriate to the magnitude of the event. To the extent that Mr Ayre turned his mind to which strategy was

¹²⁶ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5220: line 49].

¹²⁷ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5267: line 33].

¹²⁸ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5223: line 37].

being applied on the afternoon of Saturday, 8 January 2011, he believed it was W1.

118. Mr Ayre's attempt to suggest a different interpretation on 3 and 4 February of this year could only be recent invention. On 11 February 2012, he was asked when he had first advanced this explanation to anyone else.¹²⁹ He said that he could not recall when he had 'first described it to anyone' but believed that he had 'described that to the legal team when we were preparing statements'.¹³⁰ He was asked if it appeared in any of his statements. He said, '[i]t would be in the supplementary statement as such.'¹³¹ Mr Ayre's supplementary statement, signed by him on 29 March 2011,¹³² does specifically address the relevant section of the 5.53 pm situation report.¹³³ It says:

One important point to note from this situation report is the information under the heading 'Forecast Scenario - Based on mid-range forecasts'. The models that I used in preparing the projections I refer to were based on 72 hour rainfall forecasts (I note that the 72 hour forecast models were included in Appendix K of the Wivenhoe and Somerset Dams Flood Report 2011). The information contained in this section was included to make the regional councils aware that:

- (a) If the forecast rainfall eventuated the flows could be limited to 1,800m³/s and Fernvale Bridge and Mt Crosby Weir Bridge could remain open;
- (b) If more than the forecast rainfall eventuated then Fernvale Bridge and Mt Crosby Weir Bridge would be closed; and
- (c) The model projections were that downstream flow would still be maintained below 3,500m³/s (which is the W&S Manual reference to 3,500m³/s at Lowood).

119. It does not record any suggestion along the lines now advanced by Mr Ayre. It does not suggest that any part of the 5.53 pm situation report was about communicating information to Mr Tibaldi. It suggests that Mr Ayre was equating W2 with having to close Fernvale Bridge and Mt Crosby Weir Bridge while keeping releases below 3,500 m³/s at Lowood and that Mr Ayre

¹²⁹ Transcript, Robert Ayre, 11 February 2012, Brisbane [p6107: line 1].

¹³⁰ Transcript, Robert Ayre, 11 February 2012, Brisbane [p6107: line 18].

¹³¹ Transcript, Robert Ayre, 11 February 2012, Brisbane [p6107: line 25].

¹³² Exhibit 18, Supplementary Statement of Robert Ayre, 29 March 2011.

¹³³ Exhibit 18, Supplementary Statement of Robert Ayre, 29 March 2011 [p20: para. 51].

wished to communicate to the regional councils that it would be necessary to move to this strategy if more than the forecast rainfall eventuated. Mr Ayre appears to have confirmed this in his evidence last year.¹³⁴

120. Mr Ayre has had the same solicitors throughout the course of the Inquiry. It was open to him to put on evidence from his lawyers recording that he had told them of his explanation at an earlier time, before 3 February 2012. He did not do so.
121. Mr Ayre's evidence in respect of the 5.53 situation report cannot be accepted. This conclusion must be added to the observations which can be made about Mr Ayre's credibility.

Flood event log, 3.30 pm, 9 January

122. The flood event log records a meeting between the four flood engineers at 3.30 pm on 9 January 2011.¹³⁵ This is significant, as a meeting between all four of the engineers was rare. The entry in the flood log states:

Duty Engineer Conference held at the FOC: Attended by RA, JR, TM with JT on conf phone. At this stage operating at the top end of W1 and the bottom end of W2. ...

123. The entry has the initials 'NGA' as the person who made the entry.¹³⁶ 'NGA' refers to Neville Ablitt, a flood officer. Mr Ablitt's evidence was that¹³⁷:
- a. He would have created the entry at 3:30 pm and written a brief description.
 - b. He probably wrote the words 'Duty Engineer Conference held at the FOC: Attended by RA, JR, TM with JT on conf phone.'
 - c. He did not believe he had written the remainder of the entry.
124. Each of the four flood engineers was asked about this entry.

¹³⁴ Transcript, Robert Ayre, 12 April 2011, Brisbane [p173: line 45].

¹³⁵ Exhibit 23, Original and Unredacted Flood Event Log, 19 January 2011..

¹³⁶ Exhibit 24, Seqwater – January 2011 Flood Event – Report on the operation of Somerset Dam and Wivenhoe Dam, Appendix M identifies 'Engineer 1' as the author of entry at 3:30pm on 9 January 2012. 'Engineer 1' is Mr Ayre. Mr Ayre says that this is an error: Exhibit 1048, Statement of Robert Ayre, 30 January 2012 [p16: para 121].

¹³⁷ Transcript, Neville Ablitt, 9 February 2012, Brisbane [p5862: line 22].

125. Mr Tibaldi had participated in the conference by telephone and could not recall the discussion other than his impression that 'I couldn't understand why they were getting concerned'.¹³⁸

126. Mr Tibaldi had commented on the flood event log that appeared as Appendix M to Seqwater's report, 'January 2011 Flood Event – Report on the operation of Somerset Dam and Wivenhoe Dam'.¹³⁹ Those comments were made by 21 March 2011. Next to the 3.30 pm entry, Mr Tibaldi's comment was:

Discussion on possible operational strategies over coming days.
Numerous scenarios were possible.

127. That comment suggests that, at this time at least, Mr Tibaldi did have some recollection of this conversation. In any event, he did not take any issue with the content of the entry as at March of last year.

128. The other three engineers were present at the flood operations centre for the conference.

129. Mr Ayre described the statement that they were 'operating at the top end of W1 and the bottom end of W2' as 'a Ruffini-ism' and said that it 'was an expression that John Ruffini used, although I can't be exactly sure it was him.'¹⁴⁰ His explanation for what the statement meant was:

I think all he was trying to describe was the phase that we'd been operating up to and that we were able to store water in the dam at that point and make releases in a manner that optimised the protection, but also had the benefit of keeping the high-level bridges open.¹⁴¹

130. That explanation does not sit easily with the proposition that the engineers were operating under W3. But it is, in any event, speculation as to what Mr Ruffini might have meant by a phrase he might have used.

¹³⁸ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5058: line 53].

¹³⁹ Exhibit 1141, Transcript of Interview with Chloe De Marchi, 7 February 2012 [Exhibit 9].

¹⁴⁰ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5193: line 29].

¹⁴¹ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5193: line 42].

131. Mr Ruffini had no recollection of using the words.¹⁴² He initially speculated that the use of 'W1' and 'W2' might have been shorthand methods of referring to the discharge rates but, having been taken through the logic of that proposition, ultimately accepted that it 'doesn't seem to make sense'.¹⁴³
132. Mr Ruffini had also previously commented on a draft of Appendix M in response to a requirement of the Commission.¹⁴⁴ Those comments were an attachment to his 24 March 2011 statement. His comment on the 3.30 pm entry was, 'I can't recall the exact words spoken at this meeting. The description provided is consistent with my recollection of the meeting.' Mr Ruffini made some attempt in his recent evidence to dilute this comment, saying 'I said I didn't remember the details of what was spoken at that meeting but, you know, basically the general thrust of it was probably okay.'¹⁴⁵ Mr Ruffini's comment from March 2011 is not qualified in the way he suggested in his recent evidence.
133. Mr Malone could not recall anyone speaking during the conference about being 'at the top end of W1 and bottom end of W2'.¹⁴⁶ However, he said that he could 'quite understand why it was stated.'¹⁴⁷ The relevant exchange in the evidence was:

Mr Malone: ...the statement is correct. ... It doesn't say we are not operating under strategy 3. It says we are operating at a particular point.

Mr Callaghan: You'd just better explain that for us?

Mr Malone: At this stage, we are operating at the top end of W1 and the bottom end of W2. It says we are operating at a particular point. It doesn't say we are operating under strategy W1 or W2.

Mr Callaghan: So, that should be read to interpret, 'Even though we are in three, we are at one and end of two,' is that the way we should read it?

¹⁴² Transcript, John Ruffini, 6 February 2012, Brisbane [p5404: line 38].

¹⁴³ Transcript, John Ruffini, 6 February 2012, Brisbane [p5403: line 9].

¹⁴⁴ Exhibit 42, Statement of John Ruffini, 24 March 2011, Annexure JLR-11.

¹⁴⁵ Transcript, John Ruffini, 6 February 2012, Brisbane [p5402: line 30].

¹⁴⁶ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5301: line 10].

¹⁴⁷ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5301: line 13].

Mr Malone: If you look at the levels ... and the releases at that particular point, that was the condition - those conditions might also satisfy the top end of W1 or the bottom end of W2.

Mr Callaghan: Well, quite, they might, but-----

Mr Malone: But it doesn't say that you're operating under strategy W2.

Mr Callaghan: Well, under, okay?

Mr Malone: It says 'at'.

Mr Callaghan: It's all in the prepositions, is it?

Mr Malone: Well, if we're being very precise, yes.

134. To accept this explanation is to accept that, rather than recording the strategy they were actually operating under, the engineers instead used the opportunity of all four being involved in a conference to note that the releases they were making might also satisfy opposite ends of two other strategies under which they were not operating.
135. Once again, in respect of one of the critical points of investigation, the Commission is faced with a collective loss of memory. None of the four flood engineers admitted to having made the statement. None had a specific recollection of having heard it. Three of them speculated as to what meaning it might have, apart from its natural meaning, and none of those speculative interpretations were reasonable interpretations of the statement. In any case, none advanced the proposition that such interpretations were in fact what was intended to be conveyed at the time.
136. The argument may run that, since these were all experienced flood engineers, steeped in the ways of the Wivenhoe manual, constantly updated with information about lake level and flow rates, there could have been no possibility that they were not aware of the Strategy engaged.
137. This would be more convincing if the engineers had demonstrated such knowledge at any point during the event (they cannot) or presented since with

a consistent, coherent account of the manner in which Strategies were engaged. As is demonstrated elsewhere they have not.

138. There is a simple explanation for the entry: to the extent that any regard was had to the Strategies in the Wivenhoe manual, the shared understanding of the flood engineers at this meeting was that they were at the point of change from W1 to W2.
139. That is consistent with the evidence that suggests that Mr Tibaldi¹⁴⁸, Mr Ayre¹⁴⁹ (though in his evidence this year he appeared to suggest that this was a trap into which others might fall)¹⁵⁰ and Mr Malone (though he denied he was confused about the implementation of W2)¹⁵¹, at least, may have thought, at the time, that the progression between strategies W1, W2 and W3 was linear with W2 a necessary transition between W1 and W3.

Situation Report at 9.00 pm, telephone conference at 9.30 pm, Spiller email at 11.07 pm on 9 January 2011

140. A Situation Report was sent at 9.00 pm on 9 January 2011 that relevantly said:

The objective for dam operations will be to minimise the impact of urban flooding in areas downstream of the dam and, at this stage, releases will be kept below 3,500m³/s and the combined flows is [sic] the lower Brisbane will be limited to 4,000m³/s. This is below the limit of urban damages in the City reaches.¹⁵²

141. This is the first situation report that mentions protection of the urban environment. This situation report was written by Mr Malone.

¹⁴⁸ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p4: para 25-26].

¹⁴⁹ Transcript, Robert Ayre, 11 April 2011, Brisbane [p81: line 38]; Transcript, Robert Ayre, 11 April 2011, Brisbane [p83: line 17]; Transcript, Robert Ayre, 12 April 2011, Brisbane [p172: line 21 to p173: line 38]; Transcript, Robert Ayre, 13 April 2011, Brisbane [p192: line 36]; Transcript, Robert Ayre, 13 April 2011, Brisbane [p193: line 7].

¹⁵⁰ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5194: line 8].

¹⁵¹ Transcript, Terrence Malone, 11 February 2012, Brisbane [p6099: line 45]. See also Transcript, Terrence Malone, 11 February 2012, Brisbane [p6094: line 35].

¹⁵² Exhibit 24, Seqwater January 2011 Flood Event Report on the operation of Somerset Dam and Wivenhoe Dam, Appendix E [p21].

142. An explanation advanced by the flood engineers for the appearance at this time of protection of the urban environment is encapsulated in this exchange between counsel for Fernvale residents and Mr Malone:¹⁵³

Mr Rangiah: And then the next sentence is, ‘The objective for dam operations will be to minimise the impact of urban flooding in areas downstream of the dam.’ You see that?

Mr Malone: I see that.

Mr Rangiah: And did you write this situation report?

Mr Malone: Yes.

Mr Rangiah: And did you mean what you wrote in that last sentence I took you to?

Mr Malone: Well, the objective of dam operations is to always minimise the downstream impacts, but you've got to take in context the circumstances under which that applies. I can understand there's some confusion about tense but-----

Mr Rangiah: What is the confusion about tense that you are referring to?

Mr Malone: Well, ‘will be’ and ‘the objective of dam operations is always to minimise the impact of urban flooding’, but what I'm talking about is the expected urban flooding in the next day or two.

Mr Rangiah: And what do the words ‘will be’ suggest?

Mr Malone: I can understand how it suggests that ‘we will’ go to this sort of situation, but that's not the case. We were already in that sort of situation of considering the impact of down to urban flooding and there's plenty of references in the document in the situation reports where we were doing that. I suggest that's just a very poor choice of words which implies that we were not considering it.

143. Mr Tibaldi¹⁵⁴ suggested a similar interpretation.

144. The flood event log¹⁵⁵ shows that Mr Drury spoke to Mr Ayre at 9.10 pm.

¹⁵³ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5333: line 33].

¹⁵⁴ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5098: line 33].

¹⁵⁵ Exhibit 23.

145. At 9.18 pm on 9 January 2011, Robert Drury sent an email to, among other people, Daniel Spiller from the SEQ Water Grid Manager.¹⁵⁶ The email attached Technical Situation Report W34. TSR W34 was based on the 9.00 pm situation report. It included the statement from the 9.00 pm situation report quoted above.
146. At 9.30 pm on 9 January 2011, a telephone conference was held between, among other people, Mr Spiller, Mr Drury and Debra-Lee Best.¹⁵⁷
147. Mr Drury did not have a specific recollection of the 9.30 telephone conference.¹⁵⁸ Mr Spiller initially said in his evidence that his recollection was that during this teleconference Mr Drury had indicated that there had been a change in objectives to protect against urban inundation and this ‘was the genesis and the introduction to the teleconference’.¹⁵⁹ However, some other answers given by Mr Spiller were ambiguous:

Ms Wilson: And was it the case that Mr Drury told that meeting that night that there had been a change in strategy?

Mr Spiller: I can't recall the specific words that he used but specifically - he did explain that the bridge would need to be inundated and that that would occur in the next 24 hours. And I believe it to be consistent with what I - what was in the e-mails we received from him in the technical situation reports and in the summaries I subsequently sent out.

...

Ms Wilson: Was it discussed in terms of there was a change of strategy from protecting rural areas to protecting against urban inundation?

Mr Spiller: I don't recall the details of that part of the discussion. Certainly I think there was a discussion that said at that time or going forward the impact - the primary objective would be urban inundation.¹⁶⁰

¹⁵⁶ Exhibit 1080, Third Statement of Daniel Spiller, Page 104 of Annexure B.

¹⁵⁷ Exhibit 1080, Third Statement of Daniel Spiller, Page 110 of Annexure B; Exhibit 1150, Statement of Debra-Lee Best, 9 February 2012 [p1: para 6].

¹⁵⁸ Transcript, Robert Drury, 6 February 2012, Brisbane [p5479: line 10].

¹⁵⁹ Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5614: line 12].

¹⁶⁰ Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5416: line 1].

148. Ms Best took notes of that teleconference.¹⁶¹ Her notes relevantly against Mr Drury's name, 'have to start releasing large', 'looking at urban inundations' and 'will impact on bridges'.¹⁶²
149. The flood event log shows that Mr Drury called and spoke with Mr Ayre at 10.20 pm in the flood operation centre. The entry relevantly records, 'A teleconference with Water Grid Manager and DERM was completed. Explained 9.00 pm situation report. Water Grid Manager will be distributing media release in the morning regarding closure of bridges.'
150. At 11.07 pm that evening, Mr Spiller sent an email to a number of people, including Minister Robertson, and copied to recipients that included Mr Drury, that stated:

To date, the primary objective for this event has been managing to prevent inundation of the Mt Crosby Weir and Fernvale Bridges.

With the forecast volumes, this primary objective is being changed to minimizing the risk of urban inundation.¹⁶³

151. An inference available on the evidence is that Mr Drury had informed Mr Spiller and Ms Best, during the teleconference at 9.30 pm, that there had been a change of objective to protecting against urban inundation. However, the competing inference is that while Mr Drury spoke of protecting against urban inundation, the identification of this as a 'change' to 'primary objective' was supposition on the part of Mr Spiller. No finding should be made that Mr Drury told Mr Spiller that there was a change to the primary objective.

Mr Drury's email to Mr Spiller on the morning of 10 January 2011

152. On the morning of 10 January 2011, at 8.13 am, Daniel Spiller, the Director of Operations at the SEQ Water Grid Manager, sent an email to Robert Drury, the Dam Operations Manager for Seqwater.¹⁶⁴ That email asked:

Are you now operating under release strategy W2 or W3?

¹⁶¹ Exhibit 1150, 9 February 2012 Statement of Debra-Lee Best, [p1: para 3].

¹⁶² Exhibit 1150, 9 February 2012 Statement of Debra-Lee Best, Attachment DLB-23.

¹⁶³ Exhibit 1080, Third Statement of Daniel Spiller, Page 116 of Annexure B.

¹⁶⁴ Exhibit 1080, Third Statement of Daniel Spiller, 1 February 2012, Annexure B [p167].

153. At 8.23 am, Mr Drury replied:

W2¹⁶⁵

154. Mr Drury was asked why he said that the strategy was 'W2' in that email. His answer was:

That would have been what I thought at the time. ...

I didn't make it up. I assume at the time I just thought that was what we were still on and to be honest it might have been from an earlier report or it may have been what I thought at the time.¹⁶⁶

155. Mr Drury was asked a number of times during the course of his examination by different counsel for different parties what the basis of his understanding was for the statement that the strategy in operation was W2 and some suggestions were made to him. For example, counsel for SunWater suggested to Mr Drury that he might have derived this understanding from reading a situation report sent at 8.00 am on the morning of 10 January 2011.¹⁶⁷

156. During the course of his evidence, Mr Drury often spoke as if he had a recollection of why he said 'W2'. For example:

...the W strategies were not a priority for operation in the field. **Me saying the wrong W strategy was purely on the top of my head what I thought at the time.** The strategies, the releases, the Sitreps were all the important things. There certainly wasn't comments on W strategies [in] those because they were not at the time a priority, nor a necessity to think about every minute of the day. ... It's easy to go back now and see the strategies are extremely important but those W strategies at the time, when I said W2 and I thought it was right and it was wrong, is not affecting the releases or the information or what people were actually doing subsequently.¹⁶⁸

157. However, it is apparent that Mr Drury had no actual recollection of how he came to give the answer 'W2'. Indeed, as Mr Drury said when the topic was

¹⁶⁵ Exhibit 1080, Third Statement of Daniel Spiller, 1 February 2012, Annexure B [p169].

¹⁶⁶ Transcript, Robert Drury, 6 February 2012, Brisbane [p5485: line 50].

¹⁶⁷ Transcript, Robert Drury, 7 February 2012, Brisbane [p5552: line 53].

¹⁶⁸ Transcript, Robert Drury, 7 February 2012, Brisbane [p5543: line 11].

first raised with him on 6 February 2012, he did not actually recall even sending the email:

Ms Wilson: Do you have any actual recollection of responding to W2 or is this just something that you thought, ‘That’s what would have happened’?

Mr Drury: I don’t recall sending an e-mail but at the time if Dan just sent it through I would have answered what I thought at the time ...¹⁶⁹

158. Accepting Mr Drury’s evidence that, as he said it, it must have been what he thought at the time, there are two ways that Mr Drury could have come to believe that the strategy in use was W2:
- a. The first way is that, as suggested by counsel for SunWater,¹⁷⁰ Mr Drury came to this view based upon information contained in a situation report he had received from the flood operations centre.
 - b. The second way is that Mr Drury came to this view based on what he was told by somebody in the flood operations centre.
159. There are several difficulties with accepting that it was by the first way that Mr Drury came to the view that the strategy was W2.
160. First, none of the situation reports say that the strategy is W2. The 5.53 pm situation report of Mr Ayre, dealt with above, foreshadows that strategy as a possible future. But that situation report was more than 36 hours old at the time Mr Drury responded to Mr Spiller’s question.
161. Second, the proposition that Mr Drury engaged in such an exercise in interpretation seems inconsistent with Mr Drury’s evidence that he was ‘not intimately knowledgeable with the manual’¹⁷¹ and that his role ‘was taking the Situational Reports and moving them on’¹⁷². Counsel for SunWater suggested to Mr Drury that he might have inferred that the strategy was W2 from the

¹⁶⁹ Transcript, Robert Drury, 6 February 2012, Brisbane [p5488: line 15].

¹⁷⁰ See, for example, Transcript, Robert Drury, 7 February 2012, Brisbane [p5578: line 33].

¹⁷¹ Transcript, Robert Drury, 6 February 2012, Brisbane [p5463: line 23].

¹⁷² Transcript, Robert Drury, 6 February 2012, Brisbane [p5464: line 10].

flow rates shown in the situation report sent at 6:30am on the morning of 10 January 2011.¹⁷³ Mr Drury eventually gave an answer that seemed to suggest this was possible.¹⁷⁴ But the answer is ambiguous when read with the preceding questions and answers. In particular, Mr Drury's answers that he was not familiar with the differences in flow rates between W2 and W3¹⁷⁵ make it difficult to know what it was that Mr Drury was allowing as a possibility.

162. Third, it is very difficult to accept that Mr Drury, with a cursory knowledge of the Wivenhoe manual, was so reckless that he was willing to spontaneously answer a direct question about the strategy under the Wivenhoe manual based on an inference from ambiguous statements in a situation report. If that is what happened, it suggests a profound failure on the part of Seqwater to manage communications appropriately.
163. Fourth, it overlooks the many opportunities for Mr Drury to check the strategy with the flood operations centre. Mr Drury was asked a direct question by Mr Spiller. He may not have regarded the information as particularly important, but he was in regular contact with people at the flood operations centre which was the immediate and logical place to obtain information about which strategy was being applied. The flood event log¹⁷⁶ shows:
- a. On the evening of 9 January 2011, Mr Drury spoke to Mr Ayre at 9.10 pm, 10.20 pm and 10.45 pm.
 - b. Mr Ruffini spoke to Mr Drury at 12.55 am on the morning of 10 January 2011 and again at 5.05 am.
164. If Mr Drury had not already been told by somebody at the flood operations centre what strategy was being applied, he could have called and asked.
165. The inference is open from the evidence that Mr Drury must have been told that the strategy was W2 by somebody from the flood operations centre during

¹⁷³ Transcript, Robert Drury, 7 February 2012, Brisbane [p5578: line 10].

¹⁷⁴ Transcript, Robert Drury, 7 February 2012, Brisbane [p5578: line 20].

¹⁷⁵ Transcript, Robert Drury, 7 February 2012, Brisbane [p5577: line 30].

¹⁷⁶ Exhibit 23, Original and Unredacted Flood Event Log, 19 January 2011.

one of his regular calls. That inference is strengthened by the similar view expressed by Mr Peter Allen to Mr Brian Cooper, dealt with below.

166. Telling against that inference is Mr Drury's evidence that he could not recall having checked with anyone what strategy was being used¹⁷⁷ and could not recall 'asking anyone or ringing' the flood operations centre.¹⁷⁸
167. In those circumstances, although the evidence weighs towards the view that somebody in the flood operations centre must have told Mr Drury that the strategy in operation was W2, it is not possible to reach a concluded view about that matter.
168. Even if it was found that Mr Drury had been told by somebody in the flood operation centre that W2 was being applied, it would not necessarily follow that the view within the flood operations centre at 8.00 am on the morning of 10 January 2011 was that W2 was in operation. Mr Drury may have been informed that the strategy was W2 at an earlier time on the evening of 9 January 2011 or early morning on 10 January 2011. The strategy might have changed by 8.00 am on 10 January 2011 without anyone informing Mr Drury.

Teleconference at 8.30 am on 10 January 2011

169. Representatives of the SEQ Water Grid Manager and representatives of Seqwater had a teleconference at 8.30 am on 10 January 2011.
170. There is a note of that teleconference that was prepared by Mr Lee Hutchison, from the SEQ Water Grid Manager.¹⁷⁹ It refers to W2 and W3.
171. Mr Spiller said in his third statement that he clarified on the morning of 10 January 2011 that the strategy being used was W2 both in his email exchange with Mr Drury 'and during a subsequent teleconference that morning in which he and Mr Peter Borrows, the CEO of Seqwater, were involved.'¹⁸⁰

¹⁷⁷ Transcript, Robert Drury, 6 February 2012, Brisbane [p5489: line 48].

¹⁷⁸ Transcript, Robert Drury, 7 February 2012, Brisbane [p5540: line 58].

¹⁷⁹ Exhibit 1150, Statement of Lee Hutchison, 10 February 2012 [Annexure A].

¹⁸⁰ Exhibit 1080, Third Statement of Daniel Spiller, 1 February 2012 [p6: para. 19].

172. In his evidence, Mr Spiller clarified that he did not specifically recall who had spoken about W2 and W3 during the teleconference, only that they had been discussed.¹⁸¹
173. Mr Barry Dennien, from the SEQ Water Grid Manager, also participated in the teleconference. His evidence was that he had no specific recollection of the term 'W2' being used during the meeting but he could recall that he had read the minutes after the meeting and did not have any issue with the minutes.¹⁸² Mr Dennien agreed with a number of propositions put to him by counsel for Seqwater.¹⁸³

Mr O'Donnell: In that 8.30 meeting where there's a note of discussion about the point between W2 and W3, is it your best recollection that the context in which - of the discussion that note reflects was you were saying that the current flows in the river are of the order of 3500 CUMECS. That's comfortable levels. We can live with that. But if the flows increase above that, we start to get to the risk be of people's homes being flooded?

Mr Dennien: Correct.

Mr O'Donnell: And that was the context, wasn't it?

Mr Dennien: That was the context of that component part of that bullet point, yes.

Mr O'Donnell: Thank you. Was that the substance of what was said?

Mr Dennien: Yes.

Mr O'Donnell: It wasn't a discussion about what's the strategy which the flood engineers are employing in their current thinking about managing the dam, was it?

Mr Dennien: No.

Mr O'Donnell: That wasn't a subject that was actually raised in the meeting, was it?

¹⁸¹ Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5649: line 32].

¹⁸² Transcript, Barry Dennien, 8 February 2012, Brisbane [p5659: line 6].

¹⁸³ Transcript, Barry Dennien, 8 February 2012, Brisbane [p5684: line 38].

Mr Dennien: No, it was about the release requirement –
release rates.

174. Mr Drury could not recall the teleconference.¹⁸⁴
175. Mr Peter Borrows, the CEO of Seqwater, participated in the conference. His attention was directed to the references to W2 and W3 in the note made by Mr Hutchison. He denied that there had been a discussion of the operating strategies which the flood engineers were using at the time in managing Wivenhoe.¹⁸⁵
176. Further statements were obtained from other participants in the telephone conference. Those statements have been tendered.
177. Mr Stan Stevenson, from Seqwater, took some notes of the conference.¹⁸⁶ His notes do not refer to any operating strategies. He has no recollection of the terms ‘W1’, ‘W2’, ‘W3’ or ‘W4’ being used during the teleconference.¹⁸⁷ But he has no recollection of the teleconference independent from his notes.¹⁸⁸
178. Mr Paul Bird, from Seqwater, took some notes of the conference.¹⁸⁹ His notes do not refer to any operating strategies. Based on a review of his notes, he does not believe there was a discussion involving the terms ‘W1’, ‘W2’, ‘W3’ or ‘W4’.¹⁹⁰ He has no independent recollection of the teleconference.¹⁹¹
179. Mr Michael Lyons, from the SEQ Water Grid Manager, recalls ‘that the ‘W’ term was used during the teleconference’ but ‘cannot recall who used that term or in what context’.¹⁹²
180. As noted above, Mr Hutchison took notes of the conference. Those notes refer to W2 and W3. Mr Hutchison says that he prepared those minutes

¹⁸⁴ Transcript, Robert Drury, 6 February 2012, Brisbane [p5490: line 38].

¹⁸⁵ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5964: line 19].

¹⁸⁶ Exhibit 1150, Statement of Stan Stevenson, 10 February 2012 [Annexure SS-1].

¹⁸⁷ Exhibit 1150, Statement of Stan Stevenson, 10 February 2012 [p1, para. 6].

¹⁸⁸ Exhibit 1150, Statement of Stan Stevenson, 10 February 2012 [p1, para. 3].

¹⁸⁹ Exhibit 1150, Statement of Paul Bird, 10 February 2012 [Annexure PB-1].

¹⁹⁰ Exhibit 1150, Statement of Paul Bird, 10 February 2012 [p2: para 6].

¹⁹¹ Exhibit 1150, Statement of Paul Bird, 10 February 2012 [p1: para 3].

¹⁹² Exhibit 1150, Statement of Michael Lyons, 10 February 2012 [p3: para 13].

‘contemporaneously using a computer in the Emergency Room’ and he ‘used the same language as that used by the participants’.¹⁹³ Mr Hutchison says that he ‘would not have used terms like ‘W2’ and ‘W3’ in the Minutes unless they were specifically mentioned by someone’ but ‘cannot recall who used the expressions ‘W2’ and ‘W3’ and cannot remember in what context the terms were used.’¹⁹⁴

181. None of the participants in the teleconference from Seqwater can recall the terms ‘W2’ or ‘W3’ being used. Yet the evidence from Mr Spiller, Mr Lyons and Mr Hutchison makes clear that those terms were used. [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

182. On the evidence, the 8.30 am teleconference does not support the drawing of any particular inference about the state of mind of the four flood engineers in relation to the strategies prescribed by the Wivenhoe manual. [REDACTED]

[REDACTED]

183. [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

184. [REDACTED]

[REDACTED]
[REDACTED]

Mr Allen’s email to Mr Cooper at 10.57 am on 12 January 2011

185. At 10.22 am on the morning of 12 January 2011, Mr Cooper sent an email to Mr Allen that attached Mr Cooper's draft report into compliance with the manual at Wivenhoe.¹⁹⁵

186. Mr Cooper's draft report relevantly stated:

¹⁹³ Exhibit 1150, Statement of Lee Hutchison, 10 February 2012 [p3: para 10].

¹⁹⁴ Exhibit 1150, Statement of Lee Hutchison, 10 February 2012 [p3: para 13 and 14].

¹⁹⁵ Exhibit 1100, Statement of Peter Allen, 7 February 2012 [Annexure PHA63: p2].

Until the last day or so, Wivenhoe Dam has been below EL74.0 and accordingly, would be operating under Strategy W1 ...

Over the last couple of days, the storage level in Wivenhoe Dam has increased to above EL 74.0 ... This situation would demand strategy W3 for Wivenhoe Dam ...¹⁹⁶

187. Mr Allen replied to Mr Cooper at 10.57 am and relevantly said:

Just a couple of comments after a very quick read of your report.

2nd page: Strategy W1 applies until the reservoir exceeds 68.5 and then it moves into W2 or W3. For the last day or so before yesterday's big rise, it would have been in W2. It moved into W4 at about EL 73.5 ...¹⁹⁷

188. Mr Allen accepted in evidence that this email must have represented his understanding at the time but he was uncertain as to from where he had derived that understanding.¹⁹⁸

189. Mr Allen suggested that he had derived this understanding from the technical situation reports and information he 'could get on the internet'.¹⁹⁹ However, he acknowledged that he had not made his own assessment²⁰⁰ and had not turned his mind to which of the W strategies might have been being employed²⁰¹. Consequently, what he said to Mr Cooper must have in turn been based on something he had received or been told.²⁰²

190. He accepted that what he said to Mr Cooper may have been based on information he received during calls with people at the flood operations centre.²⁰³

191. The flood event log records:

¹⁹⁶ Exhibit 1100, Statement of Peter Allen, 7 February 2012 [Annexure PHA63: p8].

¹⁹⁷ Exhibit 1100, Statement of Peter Allen, 7 February 2012 [Annexure PHA63: p1].

¹⁹⁸ Transcript, Peter Allen, 10 February 2012, Brisbane [p5911: line 33].

¹⁹⁹ Transcript, Peter Allen, 10 February 2012, Brisbane [p5910: line 36].

²⁰⁰ Transcript, Peter Allen, 10 February 2012, Brisbane [p5911: line 43].

²⁰¹ Transcript, Peter Allen, 10 February 2012, Brisbane [p5910: line 12].

²⁰² Transcript, Peter Allen, 10 February 2012, Brisbane [p5911: line 48].

²⁰³ Transcript, Peter Allen, 10 February 2012, Brisbane [p5910: line 56].

- a. A telephone call from somebody at the flood operations centre to Mr Allen at 7.15 pm on 9 January 2011.
 - b. A telephone call from somebody at the flood operations centre to Mr Allen at 9.00 pm on 10 January 2011.
 - c. A telephone call at 8.10 am on 11 January 2011 between Mr Tibaldi and Mr Allen.
 - d. A telephone call at 4.41 pm on 11 January 2011 from Mr Allen to somebody at the flood operations centre.
192. It was suggested to Mr Allen by counsel for Seqwater that he must have drawn an inference as to the strategy being used based on information contained in the technical situation reports.²⁰⁴ Mr Allen accepted that this was possible but said that he could not recall where he ‘got the W2 from’.²⁰⁵
193. It cannot be accepted that Mr Allen derived his understanding that strategy W2 was being employed from an inference he made from the technical situation reports. His evidence was that he had not made his own assessment.²⁰⁶ He knew that Mr Cooper’s report was a report for the Premier as to compliance with the Wivenhoe manual²⁰⁷ and it is unlikely, in those circumstances, that he would have so casually risked misleading Mr Cooper. He was in contact with the people at the flood operations centre and could have easily checked what strategy had been applied before W4 if he had any doubt.
194. The better inference from the evidence is that Mr Allen must have been communicating to Mr Cooper what he, in turn, had been told by people at the flood operations centre.
195. It could only have been one or more of the flood engineers who communicated that information to Mr Allen.

²⁰⁴ Transcript, Peter Allen, 10 February 2012, Brisbane [p5938: line 30].

²⁰⁵ Transcript, Peter Allen, 10 February 2012, Brisbane [p5938: line 36].

²⁰⁶ Transcript, Peter Allen, 10 February 2012, Brisbane [p5910: line 33; p5911: line 43].

²⁰⁷ Transcript, Peter Allen, 10 February 2012, Brisbane [p5911: line 43].

Other contemporaneous records from 8 and 9 January 2011

196. In the period between 6am on 8 January 2011 and 9.00 pm on 9 January 2011 a number of documents were produced that indirectly touched on the choice of strategy at Wivenhoe Dam: four situation reports, two technical situation reports and 23 flood event log entries. A schedule of these documents was prepared by the Commission and tendered as Exhibit 1046.²⁰⁸
197. Any of these documents would have been an appropriate place in which to record the operating strategy that was in place at the time.²⁰⁹ None of them make mention of operating strategy W3 or to the prioritisation of the prevention of urban inundation.²¹⁰ All four of the situation reports mention keeping certain bridges open.²¹¹
198. Two of the items listed in Exhibit 1046, the situation report of 5.53 pm 8 January 2011 and the flood event log entry of 3.30 pm on 9 January 2011, do refer to operating strategies. These are dealt with separately.
199. None of the other entries makes specific mention of the operating strategy that was in use at that time. The focus of the situation reports and technical situation reports is on keeping particular bridges open. To this extent, they tend to suggest that strategy W1 was in use at that time. However, it is not possible to draw any firm conclusion from this material.
200. The different operating strategies in the Manual give particular emphasis to certain objectives, but all strategies require that the same objectives are considered and in the same order of importance.²¹² As a result, with the exception of the two items discussed elsewhere, all of these materials are equally consistent with strategy W1, strategy W2 or strategy W3 having been in place.

²⁰⁸ Exhibit 1046, Schedule of sitreps, TSRs and flood event log, tendered on 2 February 2012.

²⁰⁹ Transcript, John Tibaldi, 2 February 2011, Brisbane [p5049: line 19].

²¹⁰ Transcript, John Tibaldi, 2 February 2011, Brisbane [p5049: line 28].

²¹¹ Transcript, John Tibaldi, 2 February 2011, Brisbane [p5049: line 28].

²¹² Exhibit 21, Manual of Operational Procedures at Wivenhoe and Somerset Dam, Version 7, November 2009 [p22].

Conclusion on contemporaneous documents

201. None of the contemporaneous documents supports the view that the flood engineers began operating under the W3 strategy at 8.00 am on Saturday, 8 January 2011. Rather, where those documents address strategy, they suggest that, to the extent that the flood engineers were conscious of the strategies provided for under the Wivenhoe manual:
- a. throughout Saturday, 8 January 2011, and some time into the afternoon of Sunday, 9 January 2011, the flood engineers believed they were operating under W1.
 - b. at some point on the afternoon or evening of Sunday, 9 January 2011, they identified the need to apply strategy W2.
202. Hence:
- a. Mr Ayre referred to W2 as a possibility in the future on the afternoon of 8 January 2011, in terms which suggested that it would be a step up from the strategy then being implemented.
 - b. The 3.30 pm entry refers to being at the top of W1 and the bottom of W2.
 - c. Mr Allen, who was in communication with the FOC on the evening of 9 and 10 January 2011, believed that strategy W2 had been implemented.
203. That view is also consistent with inferences available in respect of Mr Drury's communications with Mr Spiller. However, as noted above, the evidence is not sufficiently conclusive to permit findings to be made in respect of Mr Drury's communications and the basis for those communications.

5 The first attempts to record strategy choice

204. In the period 15 to 17 January 2011 three documents were prepared that purported to set out accounts of the choice and timing of the strategies used in the January 2011 flood event: Mr Malone's Summary of Manual, the Strategy Summary Log and the brief to the Minister.

Mr Malone's Summary of Manual document

205. A Microsoft Word document with the file name Summary of Manual appears to be the earliest written account of the strategies used at Wivenhoe Dam in the January 2011 flood event.²¹³

206. Mr Malone's authorship of the document is uncontested. At the time of its creation all three of the other flood engineers were specifically invited to review and comment on it, in an email which specifically drew Mr Tibaldi's attention to the attachment in which the document was enclosed.²¹⁴

207. The document is titled Summary of Manual of Operational Procedures for Flood Mitigation at Wivenhoe and Somerset Dam. It sets out an overview of the Wivenhoe Manual and includes a summary of the 'W' strategies. Of particular importance is italicised text in the document that sets out the times at which the different W strategies were 'exceeded'. Relevantly, that text records that:²¹⁵

The Flood Operations Centre was mobilised at 8am Saturday 6 January 2011.

...

[W1] was exceeded at 8am Saturday 6 January 2011.

...

[W2] was exceeded approximately 6pm Saturday 8 January 2011.

...

[W3] was exceeded approximately 9am Tuesday 11 January 2011.

[Italics in original document.]

²¹³ Exhibit 1050, Email from Duty Engineer (Terry Malone) to Mr Ruffini, Mr Tibaldi, Mr Ayre, Mr Malone and Mr Drury, 15 January 2011.

²¹⁴ Exhibit 1050, Email from Duty Engineer (Terry Malone) to Mr Ruffini, Mr Tibaldi, Mr Ayre, Mr Malone and Mr Drury, 15 January 2011.

²¹⁵ Exhibit 1050, Email from Duty Engineer (Terry Malone) to Mr Ruffini, Mr Tibaldi, Mr Ayre, Mr Malone and Mr Drury, 15 January 2011 [p3].

208. The times of the changes in operating strategies indicated in this document differ from all other accounts (or reconstructions) of when the transitions occurred, even allowing for the reference to W1 being exceeded on 6 January rather than 8 January being a typographic error.²¹⁶ The word ‘approximately’ is used to indicate that the times given may not be precise, but there is nothing on the face of the document that suggests that it is intended as anything other than a record of what had actually occurred during the flood event.
209. The documentary record suggests that the Summary of Manual was written by Mr Malone between 11.30 am and 1.02 pm on 15 January 2011.
- a. The flood event log records that Mr Drury rang the flood operations centre at 11.30 am on 15 January 2011 to request a summary of the operations manual for Wivenhoe Dam, which ‘Terry’,²¹⁷ being Mr Malone,²¹⁸ was to provide after checking with all duty engineers.
 - b. At 1.02 pm, Mr Malone sent an email to Mr Ruffini, Mr Tibaldi, Mr Ayre and Mr Drury entitled Summary of Manual that attached the file of the same name.²¹⁹ That email asked for comments on the document in advance of it being passed by Mr Drury to Mr Borrows. The text of the email indicated that the attachment had been prepared because Mr Borrows had asked for a two page summary of the manual. That email also included, in bold red font, the phrase ‘JT bring out the red pen!’.
 - c. The flood event log records that at 1.10 pm Mr Allen rang the flood event centre to ask about the summary and was told by Mr Malone that the summary was with the other engineers for checking.²²⁰ It further records that at 1.15 pm Mr Drury rang with questions about the summary.²²¹
210. In oral evidence Mr Malone confirmed that he was the author of the Summary of Manual and that he intended his email attaching it to be an invitation for

²¹⁶ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5305: line 18].

²¹⁷ Exhibit 23, Flood Event Log [p32].

²¹⁸ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5303: line 37].

²¹⁹ Exhibit 1050, Email from Duty Engineer (Terry Malone) to Mr Ruffini, Mr Tibaldi, Mr Ayre, Mr Malone and Mr Drury, 15 January 2011.

²²⁰ Exhibit 23, Flood Event Log [p32].

²²¹ Exhibit 23, Flood Event Log [p32].

feedback on the document.²²² Mr Malone explained that the Summary of Manual reflected his understanding, at that time, of the way in which the dam had been operated, although noted that it covered periods for which he was not the duty engineer.²²³

211. Mr Malone explained that most of the document had been created by cutting and pasting text directly from the manual, perhaps with some minor adjustments. The main aspect of the document on which he was inviting feedback was the italicised points that referred to the timing of strategy changes.²²⁴ In particular, Mr Malone was interested in feedback on the transition times for W2 and W3, which Mr Malone understood had occurred at times when he was not on duty.²²⁵

Feedback on Mr Malone's summary

212. It appears that Mr Malone did not receive any feedback on the Summary of Manual.
213. Mr Malone was unable to recall ever receiving any comments on the document. He explained that this was not a cause of concern to him as he understood that Mr Tibaldi would take up the document and re-edit before it was circulated, possibly without coming back to Mr Malone.²²⁶ Mr Malone said he had no further contact with the document and did not know whether it had ever reached Mr Borrows.²²⁷ He accepted that it was possible the document might have been passed on to Mr Allen.²²⁸
214. None of the other engineers could recall providing any comment on the document.
- a. Mr Ayre had some recollection of Mr Malone having worked on a document similar to the Summary of the Manual on 15 January 2011.²²⁹

²²² Transcript, Terrence Malone, 4 February 2012, Brisbane [p5303: line 43].

²²³ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5303: line 43].

²²⁴ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5305: line 9]; 5 February 2012, Brisbane [p5381: line 26].

²²⁵ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5381: line 36].

²²⁶ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5304: line 8].

²²⁷ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5306: line 21; p5307: line 1].

²²⁸ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5319: line 1].

²²⁹ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5196: line 9].

He remembered receiving the email Mr Malone sent at 1.02 pm, but not the attached document.²³⁰

- b. Mr Ruffini said he had no ‘real’ recollection of seeing or discussing the document.²³¹
 - c. As for most of 15 January 2011, Mr Tibaldi had no recollection of the email sent by Mr Malone or the entry in the flood event log.²³² He accepted that the request by Mr Malone for ‘JT bring out the red pen’ was a reference to Mr Tibaldi’s reputation for extensively editing documents that he was invited to review²³³ and as an invitation to review the attachment to the email with his usual thoroughness.²³⁴
215. Mr Drury, who is recorded by the flood event log as having made the request for the summary to be created, and as having made a call to the flood operations centre to discuss it shortly after it was circulated, was unable to offer any explanation as to the document’s purpose or subsequent use.
216. In oral evidence Mr Drury accepted that he made the call to the flood operations centre at 11.30 am on 15 January 2011,²³⁵ but was unable to recall why he had asked for it. He suggested that, based on the timing he might have made the request so that Mr Burrows could have a short summary of the manual prior to a teleconference being held at 2.00 pm that day.²³⁶
217. Mr Drury could not remember the questions he rang to ask at 1.15 pm, although accepted he might have made the call.²³⁷ Mr Malone had no recollection of this conversation with Mr Drury.²³⁸
218. Mr Navruk was the flood officer on duty at the time Mr Malone received the request to provide the Summary of Manual, at the time Mr Malone drafted it

²³⁰ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5196: line 17].

²³¹ Transcript, John Ruffini, 6 February 2012, Brisbane [p5405: line 54; p5406: line 7].

²³² Transcript, John Tibaldi, 2 February 2012, Brisbane [p5062: line 46; p5063: line 4; p5063: line 43].

²³³ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5063: line 9].

²³⁴ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5063: line 29].

²³⁵ Transcript, Rob Drury, 6 February 2012, Brisbane [p5494: line 50].

²³⁶ Transcript, Rob Drury, 6 February 2012, Brisbane [p5495: line 2; p5495: line 56].

²³⁷ Transcript, Rob Drury, 6 February 2012, Brisbane [p5499: line 14].

²³⁸ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5319: line 22].

and at the times the follow up calls from Mr Drury and Mr Allen were received. Mr Navruk accepted he made the entries in the flood event log that recorded communications about the document,²³⁹ but had no recollection of having seen it.²⁴⁰

No further circulation

219. No record has been identified to show whether the Summary of Manual was ever put to any further use, or if it was ever passed on by Mr Drury to Mr Borrows.
220. Mr Drury was not certain, but thought that he probably had not passed the Summary of Manual on to Mr Borrows as originally intended. He implied that this was because it was superseded by other materials drafted later on 15 January 2011 for the Minister.²⁴¹ Mr Drury was unable to say whether, at the time he received Mr Malone's summary, he regarded it as consistent with his understanding of the strategies engaged during the flood event.²⁴²
221. Mr Borrows had no recollection of either having requested²⁴³ the Summary of Manual, or having ever seen it.²⁴⁴
222. Mr Allen had limited recollection of the document or the call he is recorded to have made at 1.10 pm. He suggested the purpose of his call was to ensure that a summary of the manual was available for the purpose of a review that would occur at a later date, rather than to discuss its content.²⁴⁵ He had some recollection of having seen a document similar to the Summary of Manual, but was not sure if he had actually seen the particular document.²⁴⁶

Confusion between W2 and W3

223. It may well be that the Summary of Manual was, at least at the time it was written, regarded by all four engineers as an acceptable account of the strategies that were used. Its language is clear and, despite having been

²³⁹ Transcript, Albert Navruk, 10 February 2012, Brisbane [p5971: line 7].

²⁴⁰ Transcript, Albert Navruk, 10 February 2012, Brisbane [p5970: line 24].

²⁴¹ Transcript, Rob Drury, 6 February 2012, Brisbane [p5497: line 9].

²⁴² Transcript, Rob Drury, 6 February 2012, Brisbane [p5498: line 14].

²⁴³ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5956: line 30].

²⁴⁴ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5957: line 1; p5958: line 1].

²⁴⁵ Transcript, Peter Allen, 10 February 2012, Brisbane [p5916: line 31].

²⁴⁶ Transcript, Peter Allen, 10 February 2012, Brisbane [p5917: line 16].

circulated under cover of an email expressly requesting feedback, none of the flood engineers raised any concerns about its contents and could be taken to have acquiesced to its accuracy.

224. On balance, the Summary of Manual should be seen as Mr Malone's attempt to document the strategies that were used for the purpose of informing senior management. The document is not a lengthy one, and the very fact that it purports to record the progress of strategies is noteworthy. No such effort had been made during the event itself. The title of the document suggests what must have been obvious: the actions of the engineers were going to be closely scrutinised by others, beginning with senior management. The question would be asked: Had there been compliance with the manual? And the contents of the document indicate a recognition that at least part of the answer to that question would involve an examination of which strategy was engaged, and when.
225. Mr Malone explained that he did not regard the Summary of Manual as definitive and, in particular, had little confidence in his attribution of the times at which W2 and W3 were exceeded. He explained, against interest, that at the time he prepared the Summary of Manual, none of the engineers were clear on whether or not W2 was skipped during the flood event.²⁴⁷ When asked, Mr Malone rejected the possibility that the strategy timings shown in the Summary of Manual could be correct²⁴⁸ or that he had ever considered that they might be.²⁴⁹
226. This explanation itself raises serious concerns about the choice and documentation of the strategies used at Wivenhoe dam. Not only did Mr Malone not know that W2 was skipped (as it was said to be in the 2 March 2011 report), but, seemingly, none of the engineers did. This document, and Mr Malone's associated testimony, should be added to the body of evidence which suggests that for periods the engineers operating Wivenhoe dam simply

²⁴⁷ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5306: line 9].

²⁴⁸ Transcript, Terrence Malone, 4 February 2012, Brisbane [p6092: line 42].

²⁴⁹ Transcript, Terrence Malone, 4 February 2012, Brisbane [p6092: line 51].

did not know whether they were in W2 or W3 and, accordingly, were in breach of the manual.

227. There is some significance, also, to Mr Ayre's acknowledgment that Mr Malone was working on such a document and that he received the email attaching it. Knowledge about the energy being applied to such tasks at this time is relevant to any assessment about what is said later about different accounts of strategy selection.
228. A further matter of concern is that Mr Malone took no steps to alert the other flood engineers, or any other person, to his concern that his Summary of Manual was unlikely to be correct.²⁵⁰ It seems unlikely that Mr Malone believed that the other engineers would be able to recall the strategies that were used – if so, he could simply have asked them and his work would have been unnecessary. If, as he acknowledges, he thought that others might be also be confused, then he must have known his account was speculative. The most likely explanation may be that Mr Malone knew that none of the engineers knew which strategies had been used and that an exercise to reconstruct what had occurred would have to be undertaken. He therefore saw his Summary of Manual as similar to an early draft of that exercise. Such an approach raises fewer concerns about the potential for the Summary of Manual to confuse, but means at least that Mr Malone knew from an early stage that no account of strategy choices made existed or was easily discoverable. His subsequent statements and actions must be seen against that background.

The strategy summary log

229. A document that has been the subject of considerable interest is the Excel spreadsheet entitled Strategy Summary Log.²⁵¹ The provenance of this document is controversial, but its contents are striking.
230. Strategy Summary Log records that changes in W strategies occurred at the following times:

²⁵⁰ Transcript, Terrence Malone, 4 February 2012, Brisbane [p6093: line 1].

²⁵¹ Exhibit 1051, Email from Duty Engineer (Rob) to John Tibaldi, 15 January 2011, Attachment.

- a. Strategy W1 was engaged at or around 7:00 am on 6 January 2011²⁵²
 - b. Strategy W2 was engaged at or around 3:30 pm on 9 January 2011²⁵³
 - c. Strategy W3 was transitioned to at or around 7:15 pm and was engaged by 9:04 pm on 9 January 2011²⁵⁴
 - d. Strategy W4 was engaged between 6:12 am and 12:00 pm on 11 January 2011.
231. The times of the changes in operating strategies indicated in this document differ from all other accounts (or reconstructions) of when the transitions occurred.

The documentary record

232. It seems that Strategy Summary Log was created by ‘saving as’ a version of the flood event log on the evening of 15 January 2011. It was saved onto the shared network space for the flood operations centre in the same electronic folder as the flood event log.
233. On the face of the document it is a record of the times at which different operational strategies were engaged at Wivenhoe Dam. The points of transition are unmistakably highlighted in bright yellow. Entries that were contained in the flood event log, but which did not relate to choice of strategies, were deleted. The name given to the file, the choice of rows to delete and the insertion of the bright yellow rows make it clear that the primary purpose of this document was as a record of the strategies that were used.
234. Four emails have been identified that attached Strategy Summary Log. The copies of Strategy Summary Log attached to the emails are identical.

²⁵² Exhibit 1051, Email from Duty Engineer (Rob) to John Tibaldi, 15 January 2011 [p2].

²⁵³ Exhibit 1051, Email from Duty Engineer (Rob) to John Tibaldi, 15 January 2011 [p7].

²⁵⁴ Exhibit 1051, Email from Duty Engineer (Rob) to John Tibaldi, 15 January 2011 [p8].

- a. At 6.57 pm on 15 January 2011, perhaps soon after the creation of the spreadsheet, it was emailed from the Duty Engineer address to Mr Tibaldi by a person who signed off as 'Rob'.²⁵⁵
- b. At 7.51 pm on 15 January 2011, Mr Tibaldi emailed the document to the Duty Engineer email address.²⁵⁶
- c. At 1.03 pm on 17 January 2011, Strategy Summary Log was emailed from the Duty Engineer address to Mr Allen and Mr Drury.²⁵⁷
- d. At 6.06 pm on 17 January 2011, the email sent to Mr Allen and Mr Drury, including attachments, was forwarded from the Duty Engineer address to Mr Ruffini's email address.

235. If this document was prepared, or closely reviewed, by a flood engineer then it is significant as a record of that engineer's recollection (or perhaps reconstruction) of the strategies that were used. It might be of lesser significance if it is the creation of a flood officer, although, as discussed further below, the fact that it was brought into existence at all has freestanding relevance.

The creation and circulation of Strategy Summary Log

236. With the exceptions of Mr Ayre and Mr Allen, the evidence of those involved, or potentially involved, in the creation and circulation of Strategy Summary Log was characterised by a total lack of recollection.

Mr Tibaldi

237. Mr Tibaldi said he had no recollection of the document or the emails sent to and from him on 15 January 2011. He accepted that the 6.57 pm email appeared to have been sent to him and assumed that he would have opened the email and looked at the attachment at the time.²⁵⁸ He also accepted that it

²⁵⁵ Exhibit 1051, Email from Duty Engineer (Rob) to John Tibaldi, 15 January 2011, 6:57pm.

²⁵⁶ Exhibit 1052, Email from John Tibaldi to Duty Engineer with attachment, 15 January 2011, 7:51pm.

²⁵⁷ Exhibit 1076, Email from Duty Engineer to Rob Drury and Peter Allen, 17 January 2011, 1:03pm.

²⁵⁸ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5065: line 12].

appeared that he had sent an email that attached Strategy Summary Log at 7.51 pm that evening to then Duty Engineer, Mr Ruffini.²⁵⁹

238. Mr Tibaldi acknowledged that on the same evening, 15 January 2011, he was working on preparing part of a report for the Minister.²⁶⁰ This timing could suggest that Strategy Summary Log was drafted to assist in preparing that report, which did include a summary of the strategies used and the times at which they were employed. (It is noted however, that those times as recorded in the report to the Minister differed from those in Strategy Summary Log.)

Mr Ruffini

239. Mr Ruffini accepted that an email attaching the strategy summary was sent to him.²⁶¹ He could not recall viewing the document or discussing it, but assumed that he would have opened the email.²⁶² Mr Ruffini disclaimed any involvement in the preparation or review of the document.²⁶³
240. Mr Ruffini accepted that the email attaching the Strategy Summary Log was sent from the duty engineer account to Mr Drury and Mr Allen at the time that Mr Ruffini was on duty, but had no recollection of sending the document himself.²⁶⁴ He thought it unlikely that he would have sent the document to Mr Drury or Mr Allen unless one of them had requested it.²⁶⁵

Mr Ayre

241. Mr Ayre was the only witness able to recall anything about the creation of Strategy Summary Log, although his evidence was variable and in parts speculative. Mr Ayre assumed that the document was created in the time between 5.30 pm and 7.00 pm on 15 January 2011.²⁶⁶ He said that he believed he had not created the document and he was unable to recall who had.²⁶⁷ He

²⁵⁹ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5065: line 25-33].

²⁶⁰ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5066: line 40].

²⁶¹ Transcript, John Ruffini, 6 February 2012, Brisbane [p5408: line 1].

²⁶² Transcript, John Ruffini, 6 February 2012, Brisbane [p5408: line 10].

²⁶³ Transcript, John Ruffini, 6 February 2012, Brisbane [p5410: line 53].

²⁶⁴ Transcript, John Ruffini, 6 February 2012, Brisbane [p5408: line 55].

²⁶⁵ Transcript, John Ruffini, 6 February 2012, Brisbane [p5409: line 1].

²⁶⁶ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5294: line 21].

²⁶⁷ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5287: line 35]; Exhibit 1048, Statement of Rob Ayre, 30 January 2012 [p9: line 53].

accepted it was possible he might have worked on it in collaboration with others.²⁶⁸

242. Mr Ayre's best explanation of the origin of the document was that one of the flood officers was told to do a high level filter of the flood event log on 15 January 2011. Mr Ayre suggested that in order to complete that task, the flood officer created the separate spreadsheet Strategy Summary Log, stripped out the information that did not relate to strategy and made an assessment of the strategies used based on the remaining information, but in ignorance of release rates, lake levels and naturally occurring flows.²⁶⁹ Mr Ayre suggested that:²⁷⁰

At the time we simply said, 'Here's a copy of the manual. Have a go at allocating what your interpretation is of the strategy at that given time'

When asked, Mr Ayre accepted that this was a reconstruction of events rather than an actual recollection.²⁷¹ If so, it is a reasonably detailed reconstruction.

243. Mr Ayre rejected the suggestion that he might have been the person who inserted the strategies after a flood officer had done an initial edit of the document.²⁷² He pointed to the inclusion of strategy W4B in the spreadsheet, which he said all duty engineers knew had never been engaged.²⁷³ However, Mr Ayre did not rule out the possibility that he created the document in the first instance and then made suggestions as to how someone else might complete the task.²⁷⁴
244. Mr Ayre suggested that Mr Navruk or Mr Pokarier was probably the author of the Strategy Summary Log.²⁷⁵ At one point Mr Ayre suggested that he delegated the task of creating the Strategy Summary Log to one of Mr Navruk, Mr Pokarier, or possibly Mr Drury.²⁷⁶ When questioned further on this point

²⁶⁸ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5293: line 18].

²⁶⁹ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5242: line 38]; [p5244: line 41]; [p5246: line 9].

²⁷⁰ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5246: line 9].

²⁷¹ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5293: line 55].

²⁷² Exhibit 1049, Statement of Rob Ayre, 1 February 2012 [p9: para 67].

²⁷³ Transcript, Robert Ayre, 11 February 2012, Brisbane [p6110: line 23]; Exhibit 1049, Statement of Rob Ayre, 1 February 2012 [p10: para 76].

²⁷⁴ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5201: line 9; p5293: line 19].

²⁷⁵ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5243: line 19].

²⁷⁶ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5293: line 39].

Mr Ayre was unsure as to whether it was himself, Mr Tibaldi or Mr Drury who had given the instruction to the flood officer,²⁷⁷ but was relatively confident that it was one of the three.²⁷⁸ The document was then sent to Mr Tibaldi to assist him with preparing the briefing for the Minister.²⁷⁹ Mr Ayre's understanding was that Mr Tibaldi would review the document.²⁸⁰

245. Mr Ayre explained that the Minister's office had requested that the briefing for the Minister focus on what had occurred on 11 January 2011 and that, accordingly, this was the focus of the engineers' work.²⁸¹ For this reason, apparently, the work of considering the timing of strategies other than W4 was delegated to a flood officer or Mr Drury. Mr Ayre accepted that this process was flawed, but said that at the time there were not enough resources or time to do a comprehensive report and that it would have been grossly unfair to make the already exhausted flood engineers work through the night to verify all aspects of the work that was done.²⁸²

246. Mr Ayre gave inconsistent accounts about whether the 'Rob' who sent the 6.57 pm email attaching Strategy Summary was himself or Mr Drury. On 30 January 2012 Mr Ayre provided a statement to the Commission saying that he sent the email,²⁸³ but then provided a second statement on 1 February 2012 stating that he no longer believed this to be true.²⁸⁴ He acknowledged that he had seen media coverage on 31 January 2012 that referred to Strategy Summary Log and the 6.57 pm email.²⁸⁵ In oral evidence Mr Ayre said that he had no specific recollection²⁸⁶ and simply did not know whether or not he had sent the email.²⁸⁷

247. Mr Ayre had some recollection that 'a document like' Strategy Summary Log was discussed amongst the engineers, looking at it on a computer screen, and

²⁷⁷ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5293: line 39].

²⁷⁸ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5293: line 51].

²⁷⁹ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5243: line 23].

²⁸⁰ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5245: line 39].

²⁸¹ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5247: line 8].

²⁸² Transcript, Robert Ayre, 4 February 2012, Brisbane [p5247: line 43]. In saying so Mr Ayre appears to have assumed that Strategy Summary Log was created for the purpose of the Minister's brief.

²⁸³ Exhibit 1048, Statement of Rob Ayre, 30 January 2012 [p9: para 53].

²⁸⁴ Exhibit 1049, Statement of Rob Ayre, 1 February 2012 [p9: para 66].

²⁸⁵ Transcript, Robert Ayre, 11 February 2012 [p6109: line 26].

²⁸⁶ Transcript, Robert Ayre, 4 February 2012, Brisbane [p5245: line 30].

²⁸⁷ Transcript, Robert Ayre, 11 February 2012, Brisbane [p6109: line 45].

that they reached the conclusion that it contained errors. Mr Ayre was unsure if the document discussed was in fact Strategy Summary Log.²⁸⁸

248. Although some parts of his evidence were qualified, Mr Ayre's ability to give this much of an account of how Strategy Summary Log was prepared shows he had at least some involvement with the document.

Mr Malone

249. Mr Malone had no recollection of seeing Strategy Summary Log and was unable to explain its purpose.²⁸⁹

250. The only assistance Mr Malone could provide the Commission was to comment that he had seen Mr Drury working on a computer in the flood operations centre at the time Strategy Summary Log was probably written.²⁹⁰ It struck Mr Malone as unlike Mr Ayre to have written a document like Strategy Summary Log or to have sent the email to Mr Tibaldi signed Rob, as Mr Malone believed Mr Ayre's practice was to write his name and position on all emails and to send documents to all of the flood engineers when he circulated them.²⁹¹

Mr Drury

251. Mr Drury denied having any recollection of being involved in the creation of Strategy Summary Log, although accepted he was in the flood operations centre at around the time it was probably created.²⁹² He said he had no recollection of the document, would not have known how to create it and would not know where to find the flood event log that likely formed the base of the document.²⁹³ He said that he had no recollection of sending the email signed 'Rob' that attached Strategy Summary Log and pointed to the fact he had sent an email from another email account around the time that email was sent.²⁹⁴

²⁸⁸ Exhibit 1048, Statement of Rob Ayre, 30 January 2012 [p9: line 53].

²⁸⁹ Transcript, Terrance Malone, 4 February 2012, Brisbane [p5307: line 4].

²⁹⁰ Transcript, Terrance Malone, 4 February 2012, Brisbane [p5307: line 41].

²⁹¹ Transcript, Terrance Malone, 4 February 2012, Brisbane [p5307: line 46].

²⁹² Transcript, Robert Drury, 7 February 2012, Brisbane [p5605: line 13].

²⁹³ Transcript, Robert Drury, 6 February 2012, Brisbane [p5504: line 54].

²⁹⁴ Transcript, Robert Drury, 7 February 2012, Brisbane [p5505: line 20; p5603: line 24].

Mr Allen

252. The emails indicate that Mr Allen's involvement with Strategy Summary Log was as the recipient of an email on 17 January 2011. Mr Allen gave evidence that he recalled having seen the document and the yellow lines that referred to W strategies²⁹⁵ sometime in the period 15 to 17 January 2011.²⁹⁶

Mr Borrows

253. Mr Borrows had no recollection of ever seeing Strategy Summary Log.²⁹⁷

Mr Navruk

254. Mr Navruk was the flood officer on duty at the time Strategy Summary Log was probably created on 15 January 2011. He finished his shift at 7.00pm,²⁹⁸ a few minutes after the first email circulating Strategy Summary Log was sent.

255. Mr Navruk said that he believed he had not created the document, but could not rule out having assisted in its creation.²⁹⁹ He did not recall having worked on the document, but thought that creating a copy of the flood event log and removing some of the rows was the type of task a flood engineer might have asked him to do.³⁰⁰ He would not have entered the strategies into the document, but might have provided the modified document to someone else to do so.³⁰¹ Mr Navruk commented that if he had been asked to perform the task of assigning strategies, he would have done it by reference to lake levels to determine when W1 was exceeded.³⁰² (An approach apparently not adopted by the author of Strategy Summary Log).

256. Mr Navruk's view was that if he did assist in the creation of the document, he must have done so at the request of one of the three duty engineers who was at the flood operations centre at that time or Mr Drury.³⁰³

²⁹⁵ Transcript, Peter Allen, 10 February 2012, Brisbane [5918: line 31].

²⁹⁶ Transcript, Peter Allen, 10 February 2012, Brisbane [p5919: line 24].

²⁹⁷ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5958: line 4].

²⁹⁸ Transcript, Albert Navruk, 10 February 2012, Brisbane [p5966: line 15].

²⁹⁹ Transcript, Albert Navruk, 10 February 2012, Brisbane [p5975: line 37].

³⁰⁰ Transcript, Albert Navruk, 10 February 2012, Brisbane [p5976: line 18, 27; p5977: line 37].

³⁰¹ Transcript, Albert Navruk, 10 February 2012, Brisbane [p5976: line 27; p5977: line 37].

³⁰² Transcript, Albert Navruk, 10 February 2012, Brisbane [p5983: line 2].

³⁰³ Transcript, Albert Navruk, 10 February 2012, Brisbane [p5976: line 48].

Mr Van Blerk

257. Mr Van Blerk was the flood officer on duty at the times of the 1.03 pm and 6.06 pm emails that circulated Strategy Summary Log on 17 January 2011.³⁰⁴ Mr Van Blerk had no recollection of having seen Strategy Summary Log³⁰⁵ and said that he did not send either of the emails.³⁰⁶

The other flood officers

258. None of the other flood officers recalled having seen Strategy Summary Log or having sent an email that attached it.³⁰⁷

Conclusions on the strategy summary log

259. Mr Ayre was the only witness before the Commission who was able to provide some explanation for the likely origin and use of Strategy Summary Log. He was clear that he was not the sole author of the document, and indeed it may be unlikely that he was. However, he was tentative and variable in his account as to whether he was responsible for the initial circulation of it on the evening of 15 January 2011. That email was signed ‘Rob’ and was presumably sent by either Mr Drury or Mr Ayre, the only two ‘Rob’s’ with access to the email account from which the email was sent at that time. Mr Drury’s firm denial and seemingly valid explanation must be contrasted with Mr Ayre’s account, which betrays at least some knowledge about the document and is relevantly inconsistent. General conclusions about Mr Ayre’s credibility will also be relevant to the resolution of this issue. It seems probable that Mr Ayre was the author of the email. The suggestion that Mr Ayre customarily signs off using his full name rather than just ‘Rob’³⁰⁸ does not advance the analysis. It is clear that on occasions Mr Ayre does use the sign off ‘Rob’³⁰⁹ and no attempt was made to isolate the context in which ‘Rob’ sent the email to Mr Tibaldi on 15 January 2011 as being one in which he would certainly not have signed off in this fashion.

³⁰⁴ Exhibit 1139, Statement of Petrus Gerhardus Louw Van Blerk, 30 January 2012 [p2: para 6(c)].

³⁰⁵ Transcript, Petrus Gerhardus Louw Van Blerk, Brisbane, 11 February 2012 [p6030: line 53].

³⁰⁶ Transcript, Petrus Gerhardus Louw Van Blerk, Brisbane, 11 February 2012 [p6031: line 26].

³⁰⁷ Transcript, David Pokarier, 10 February 2012, Brisbane [p5987: line 37]; Transcript, Kim Hang, 10 February 2012, Brisbane [p6002: line 2]; Transcript, Richard Stephens, 10 February 2012, Brisbane [p5999: line 20]; Transcript, John West, 10 February 2012, Brisbane [p6007: line 23]; Transcript, Neville Ablitt, 9 February 2012 Brisbane [p5861: line 57]; Transcript, Mark Tan, Brisbane 11 February 2012 [p6037: line 37].

³⁰⁸ Transcript, Rob Ayre, Brisbane, 11 February 2012 [p6116: line 27].

³⁰⁹ Transcript, Rob Ayre, Brisbane, 11 February 2012 [p6121: line 21].

260. The question as to who actually authored Strategy Summary Log is more difficult to resolve. Mr Ayre was the only person who professed any recollection as to the origin of the document, but he attributed authorship to either a flood officer or Mr Drury, acting under Mr Ayre's instructions. Mr Drury was firm in saying that he had no recollection of having been involved. None of the flood officers could recall having created it, although Mr Navruk was open to the possibility that he might have assisted in creating the document and removing the rows unrelated to strategy choices.
261. Mr Ayre and Mr Malone both thought that the document was unlikely to have been authored by a flood engineer and a contrary finding cannot be made with certainty. However, at a minimum, it seems clear that Strategy Summary Log was prepared with the involvement of Mr Ayre. The degree to which he was involved does not matter – even his being aware of the document gives rise to further questions.
262. It is striking that the exercise of preparing Strategy Summary Log was undertaken at all, given that the relevant strategy decisions were made only a few days earlier. If conscious choices as to strategies had been made by the engineers there would have been no need to undertake a textual analysis of the flood event log to identify which strategies had been used. For the period under investigation, there really were only two transitions of relevance, and one of those – to W4 – was, as Mr Ayre explained, being dealt with elsewhere to the Strategy Summary Log exercise. On this version of events, the author of Strategy Summary Log was left only the need to establish what happened, and when, at the point W1 was exceeded. Determining the point at which that occurred ought to have been simplicity itself; one glance at the lake level information would have established when W1 was left behind. Mr Ayre was on duty when W1 was exceeded. It is interesting, to the point of concern, that Mr Ayre did not volunteer that he had the answer to the principal question he had apparently asked to be investigated. One word from Mr Ayre could have resolved the entire issue, at least for the decisions made on his shift on 8 January 2012. Given that Strategy Summary Log was prepared during a flood

event at a time that resources were already heavily strained, it is very difficult to accept that it was created out of interest or as a checking exercise.

263. Even if it is accepted that the decision was made to commit considerable amounts of what was, by then, scarce energy to resolving a question Mr Ayre could have answered in a few words, it is strange that Mr Ayre apparently then sent, or at allowed to be sent, the spreadsheet to Mr Tibaldi without first reviewing it. If Mr Ayre had made a conscious decision to bypass W2 a week earlier, then with even a cursory scan of Strategy Summary Log he would have identified the errors shown in bright yellow highlighting.
264. As for the other documents being prepared at this time, the energy applied to preparing Strategy Summary Log on 15 January 2011 contrasts starkly with the lack of concern for recording strategies prior to this date. It demonstrates knowledge of the importance of presenting a record of strategy choices for review by senior management and external parties.
265. It is significant that someone, probably Mr Ayre, thought the document sufficiently useful to send it to Mr Tibaldi on the evening of 15 January 2011, while Mr Tibaldi was drafting the Minister's report. It is also significant that Mr Tibaldi then recirculated it to Mr Ruffini later that night and that someone, probably Mr Ruffini, then sent it to Mr Drury and Mr Allen on 17 January and subsequently forwarded the email to Mr Ruffini's personal address. The inference is open that all of the recipients of Strategy Summary Log read it, particularly those who recirculated it. A number of points follow from this.
266. These multiple circulations suggest that it was a document that was regarded as more useful than, as Mr Ayre suggested, simply an uninformed person's best attempt at extrapolating the strategies used based solely on the flood event log. Something immediately recognisable by a flood engineer as nonsensical would not be circulated in that fashion. The fact that it was distributed by at least one and perhaps three of the flood engineers suggests it had more currency than that.

267. It is also relevant that there appears to have been no contemporaneous rejection of Strategy Summary Log, aside from the fact its contents were not reflected in the brief to the Minister. There are no reply emails dismissing its worth, nor amended drafts correcting errors. Mr Ayre claims that there was an oral discussion amongst the engineers about a document that may have been Strategy Summary Log in which they concluded that it should be rejected. None of the other engineers profess to having any recollection of the document at all, let alone a considered discussion of its contents. If Mr Ayre's account of this conversation is truthful, it is remarkable that no one else remembers it. If Mr Ayre's account is not true, that conclusion should also be added to the material relevant to his credibility.
268. At the very least, this document, and the existence of other different accounts of the strategies used in Mr Malone's Summary of Manual and the Minister's brief, point clearly towards a finding that there was no shared understanding amongst the engineers as to the time at which strategies had been implemented during the January 2011 flood event. In particular, there was probably no understanding, and certainly no common understanding, of whether anything and if so what, had occurred when strategy W1 was 'exceeded'. All this supports the proposition that for some periods the engineers operating Wivenhoe dam simply did not know whether they were in W2 or W3 and, accordingly, were in breach of the Manual.
269. A further conclusion follows. Mr Ayre's decision to commit limited resources towards identifying which strategies had been in use, either by drafting Strategy Summary Log himself or delegating it to Mr Drury or a flood officer, shows that Mr Ayre was aware that there was a need to have such a record, that one did not already exist and that a record could not be created simply by asking the other engineers what they had done. A version of events would have to be reconstructed.

The briefing note to the Minister

270. The Minister for Natural Resources, Mines and Energy and Minister for Trade, Mr Stephen Robertson, requested a briefing note about the January

2011 flood event and Wivenhoe dam operations prior to the Emergency Cabinet Meeting on 17 January 2011.

271. That briefing note was provided to the Minister by the chief executive of the SEQ Water Grid Manager, Mr Barry Dennien, through the Director-General of DERM, Mr John Bradley on 17 January 2011.³¹⁰ The briefing note had five attachments. Relevantly for the Commission’s purposes, Attachment A was a ministerial briefing note from Seqwater; Attachment D was the Flood Mitigation Manual compliance review by Mr Brian Cooper, and Mr Cooper’s curriculum vitae.³¹¹
272. Attachment A, Seqwater’s ministerial briefing note provides information to the Minister about 4 topics: background information on Wivenhoe dam, flood operations, the flood mitigation manual, the regulatory context and the flood event report. The last section sets out Seqwater’s intention to produce a comprehensive flood event report in accordance with its obligation under the Wivenhoe manual, and attaches a report titled ‘January 2011 Flood Event Report’ which it recommends should be utilised ‘...in the short term...as the basis for communications and discussion.’³¹²
273. The genesis of this ‘January 2011 Flood Event Report’, and others’ awareness of its content, is relevant to the matters currently under consideration by the Commission because it contains an account of when the strategies under the manual were used during the event. That account is contained in a table under the heading ‘Event Decision Making’, an extract of which appears below:³¹³

DATE AND TIME	FLOOD EVENT MILESTONE
15:00 07/01/2011 (Friday)	Wivenhoe releases commence, with operational strategy W1 in use. Rainfall for the next four days is estimated to be between 140mm and 300mm, with a forecast for rain easing on Tuesday 11 January 2011. All bridges downstream of the dam with the exception of Fernvale Bridge and Mt Crosby Weir Bridge are expected to be inundated for a

³¹⁰ Exhibit 11, Statement of Stephen Robertson, 1 April 2011, Annexure SR-12 [p1].

³¹¹ Exhibit 11, Statement of Stephen Robertson, 1 April 2011, Annexure SR-12 [p2].

³¹² Exhibit 11, Statement of Stephen Robertson, 1 April 2011, Annexure SR-12, Attachment A [p12].

³¹³ Exhibit 11, Statement of Stephen Robertson, 1 April 2011, Annexure SR-12, Attachment A, ‘January 2011 Flood Event Report’ [p7-9]. Rows prior to 7 January and after 11.00 am on 11 January have been removed.

	number of days.
06:00 09/01/2011 (Sunday)	Moderate to heavy rain periods forecast until Tuesday, but both Wivenhoe and Somerset dam levels were falling slowly, with Somerset at 1.27 m AHD above FSL and Wivenhoe 1.58 m AHD above FSL.
15:30 09/01/2011 (Sunday)	Following significant rain during the day a meeting of Duty Engineers is held. The QPF issued at 16:00 indicates 50mm to 80mm over the next 24 hours. Based on this forecast, it is anticipated that dam levels can be held to a maximum of 3.50 m AHD above FSL in Somerset and 5.5 m AHD above FSL in Wivenhoe. However, by 19:00 it was apparent that both Fernvale Bridge and Mt Crosby Weir Bridge would be inundated by the combined dam releases and Lockyer Creek flows and that the operational strategy had progressed to W2.
06:30 10/01/2011 (Monday)	Rainfall continued during the night and based on rainfall on the ground it was apparent the operational strategy had progressed to W3.
06:30 10/01/2011 (Monday)	Rainfall continued during the day but based on rainfall on the ground, operational strategy W3 remained in use. However it was apparent that any further heavy rain would result in progression of the operational strategy to W4.
08:00 11/01/2011 (Tuesday)	Rainfall continued during the night with isolated heavy falls in the Wivenhoe Dam catchment area and based on rainfall on the ground it was apparent the operational strategy would soon progress to W4 with Wivenhoe Dam exceeding 8.00 m AHD above FSL. The objective now was to limit outflows and subsequent flood damage to urban areas, while ensuring the structural safety of the dam.
11:00 11/01/2011 (Tuesday)	Rapid inflows were experienced in Wivenhoe Dam, with the dam rising almost a metre in eight hours. Releases were increased until the dam level stabilised in accordance with Strategy W4. Computer models were not reflecting actual dam inflows due to intense point rainfalls in the immediate catchment around the dam. Falls are estimated to be similar to those experienced at both Toowoomba and Upper Lockyer the previous day and are falling outside and between existing rain gauges.

274. The table clearly suggests that the strategies were actually employed at the times indicated.

Production of the briefing note

275. The flood event log records a teleconference between Mr Malone (then the duty engineer), Mr Ayre, Mr Tibaldi, Mr Drury, Mr Allen, Mr Borrows, Mr Bradley and Mr Robert Reilly (General Manager of the Office of the Water Supply Regulator, DERM) at 2.00 pm on 15 January 2011. The flood event log records that the teleconference was to discuss a report for the Minister by close of business on Sunday 16 January 2011.³¹⁴

276. Mr Drury gave evidence that it was left to the flood operations centre and him to put the report to the Minister together.³¹⁵ The flood event log records Mr Drury arriving at the flood operations centre at 5.00 pm.³¹⁶ Mr Malone and Mr Ayre had been there since the 2.00 pm teleconference.³¹⁷ (Mr Malone was the duty engineer on shift.³¹⁸) Mr Ruffini was on shift from 7.00 pm that evening until 7.00 am on 16 January.

277. Mr Drury, Mr Ayre, Mr Tibaldi and Mr Malone had a discussion about what each of them would do to prepare the briefing note.³¹⁹ None of those persons could recall exactly what each of them did. Some of them may have been involved in the production of the Strategy Summary Log, which is discussed above. The evidence suggests that:

- a. Mr Tibaldi wrote the text of the ‘January 2011 Flood Event Report’,³²⁰ including the table extracted in part above. It appears he completed the table between 6.34 pm on 15 January when he sent a version to Rob Drury that did not include the table,³²¹ and 9.10 pm on 15 January when he sent a draft to, Mr Borrows, Mr Drury, Mr Ruffini, Mr Malone, his

³¹⁴ Exhibit 23, Unredacted flood event log, entry for 2.00pm, 15 January 2011.

³¹⁵ Transcript, Robert Drury, 6 February 2012, Brisbane [p5499: line 30].

³¹⁶ Exhibit 23, Unredacted flood event log, entry for 5.00pm, 15 January 2011.

³¹⁷ Transcript, Albert Navruk, 10 February 2012, Brisbane [p5972: line 55].

³¹⁸ Exhibit 24, Seqwater, January 2011 Flood Event, Report on the Operation of Somerset Dam and Wivenhoe Dam, 2 March 2011 [p35].

³¹⁹ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5198: line 30].

³²⁰ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5067: line 10].

³²¹ Exhibit 1095, Email, John Tibaldi to Rob Drury titled ‘Full document - JT Draft – 02’, 6.34pm, 15 January 2011.

own Seqwater email account and the Duty Engineer email account.³²²

As Mr Tibaldi has no memory of 15 January,³²³ there is no evidence of how he went about creating this document.

- b. Mr Drury stated that he was involved in pulling together parts of the ‘front of the briefing note’.³²⁴ He says he did not discuss the use of strategies with any of the flood engineers during the production of the briefing note.³²⁵
- c. Mr Malone did some modelling work to produce the graphs on page 4.³²⁶
- d. Mr Ayre spent time gathering background documents³²⁷ and adding comments and annotations of gate directives to a gate operations spreadsheet relevant to the morning of 11 January 2011.³²⁸

278. Mr Ruffini was not involved in preparing the briefing note during the evening of 15 January because he was the duty engineer.³²⁹

Awareness of the briefing note – flood engineers

279. Mr Tibaldi provided a draft version of the ‘January 2011 Flood Event Report’ section of the briefing note by email to the other flood engineers and the Duty Engineer email account at 9.10 pm, 15 January 2011.³³⁰ A further draft was sent to the Duty Engineer account and Mr Ayre and Mr Ruffini’s work accounts at 6.42 am on 16 January 2011.³³¹ A further draft was then sent to the same recipients at 8.17 am on 16 January 2011.³³² Those emails included a table identical to that which appeared in the final briefing note. The Duty Engineer email account was also sent copies of later versions of the whole

³²² Exhibit 1053, Email, John Tibaldi to Peter Borrows, Rob Drury, John Ruffini, John Tibaldi, Terry Malone, Rob Drury, Duty Seq, 9:10pm, 15 January 2011.

³²³ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5064: line 17]; [p5066: line 40].

³²⁴ Transcript, Robert Drury, 6 February 2012, Brisbane [p5500: line 1-39].

³²⁵ Transcript, Robert Drury, 6 February 2012, Brisbane [p5504: line 7-30].

³²⁶ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5324: line 15].

³²⁷ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5199: line 20-50].

³²⁸ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5200: line 23].

³²⁹ Transcript, John Ruffini, 6 February 2012, Brisbane [p5407: line 20-50].

³³⁰ Exhibit 1053, Email, John Tibaldi to Peter Borrows, Rob Drury, John Ruffini, John Tibaldi, Terry Malone, Rob Drury, Duty Seq, 9:10pm, 15 January 2011.

³³¹ Email, John Tibaldi to Duty Engineer, John Ruffini, Rob Ayre, 6.42am, 16 January 2011.

³³² Email, John Tibaldi to Duty Engineer, John Ruffini, Rob Ayre, 8.17am, 16 January 2011.

briefing note, by Peter Allen at 11.58 am on 16 January,³³³ and by Peter Borrows at 3.59 pm³³⁴ and 4.28 pm³³⁵ on 16 January 2011.

280. Mr Ayre said he could not recall reading the version of the Ministerial briefing note which was sent to him at 9.10 pm.³³⁶ John Tibaldi had sent it to the Duty Engineer account but Mr Ayre was not on shift until 7.00 am this next morning (16 January).³³⁷ Mr Ayre was sent that and other drafts to his SunWater email account and the Duty Engineer account during 16 January. Mr Ayre said he was concentrating on operating the dams during his shift.³³⁸ He later said that he focussed on the Tuesday morning section of the report and was unlikely to have read the rest.³³⁹ He agreed it was not a lengthy document.³⁴⁰
281. The inference is open that Mr Ayre did in fact read the brief on 15 or 16 January 2011. He ought to have had access to it in more than one email account; it was an important document to go to the responsible Minister; he was a senior flood operations engineer and involved in directing the strategy for the event; and he was specifically requested to be at the teleconference.³⁴¹
282. Mr Malone says that he had a minor role in the production of the material for the Minister.³⁴² He said he was concentrating on operating the dam, as he was on shift until 7.00 pm on 15 January.³⁴³ He said he could not recall seeing a copy of the brief at the time.³⁴⁴ He recalled meeting with Mr Borrows, Mr Tibaldi and Mr Ayre on 16 January 2011 about the briefing note, but said that even at that stage he did not familiarise himself with the briefing note.³⁴⁵ He

³³³ Exhibit 1065, Email, Peter Allen to Sent to Rob Drury, Peter Borrows, Duty Seq, John Bradley, Barry Dennien, Daniel Spiller, Micahel Lyons, Elaina Smouha, Peter Allen, Mike Foster, Bob Reilly, 11.58am, 16 January 2011.

³³⁴ Exhibit 1067, Email, Peter Borrows to recipients, including Bob Reilly, Rob Drury, Duty Seq, John Bradley, Barry Dennien, Dan Spiller, Peter Allen, 3.59pm, 16 January 2011.

³³⁵ Exhibit 1069, Email, Peter Borrows to recipients, including Bob Reilly, Rob Drury, Duty Seq, John Bradley, Barry Dennien, Dan Spiller, Peter Allen, 4.28pm, 16 January 2011.

³³⁶ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5203: line 20].

³³⁷ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5203: line 20].

³³⁸ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5203: line 52] - [p5204: line 39]; Exhibit 1049, Seventh Statement of Robert Ayre, 1 February 2012 [p9: para 64].

³³⁹ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5204: line 36].

³⁴⁰ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5204: line 50].

³⁴¹ Exhibit 23, unredacted event log, entry for 12.12pm, 15 January 2011.

³⁴² Transcript, Terrence Malone, 5 February 2012, Brisbane [p5321: line 22].

³⁴³ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5320: line 30-58].

³⁴⁴ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5308: line 43].

³⁴⁵ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5321: line 50].

accepted that he ‘could have’ read it.³⁴⁶ The inference is open, for the reasons expressed above in respect of Mr Ayre, and the added reason of his meeting with Mr Borrowes, that Mr Malone did read the brief on 15 or 16 January 2011.

283. Mr Ruffini said that he never saw a draft of the briefing note.³⁴⁷ He said he was not involved in discussions with Mr Tibaldi, Mr Malone or Mr Ayre about it.³⁴⁸ He said he was exhausted and had many other pressing concerns including from his full time role at DERM.³⁴⁹ He accepts that he was sent the document four times, but says he never opened it.³⁵⁰ This is in stark contrast with his evidence about the strategy summary log, where he stated that although he does not recall it, he ‘can’t imagine [he] wouldn’t have opened it up and at least glanced at it’ because it was in his email inbox.³⁵¹ The inference is clearly open that Mr Ruffini looked at the ministerial briefing note before it was finalised.

Awareness of the briefing note – others

284. Numerous drafts of the report were circulated to many persons involved in the agencies relevant to the operation of Wivenhoe dam: Seqwater, SEQ Water Grid Manager, DERM and the Minister’s office. In evidence, some claimed they had not opened or read the document. The state of the evidence for each person is as follows:

- a. Mr Robertson said he read the ‘January 2011 Flood Event Report’ section of the briefing note.³⁵²
- b. Mr Smith had no recollection of ever receiving the briefing note.³⁵³
- c. Mr Dennien said he read the Seqwater section of the briefing note, but did not read the table of event decision making in any detail³⁵⁴ (of which part is extracted above)

³⁴⁶ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5322: line 20].

³⁴⁷ Transcript, John Ruffini, 6 February 2012, Brisbane [p5411: line 55].

³⁴⁸ Transcript, John Ruffini, 6 February 2012, Brisbane [p5412: line 5].

³⁴⁹ Transcript, John Ruffini, 6 February 2012, Brisbane [p5412: line 20].

³⁵⁰ Transcript, John Ruffini, 6 February 2012, Brisbane [p5412-5413].

³⁵¹ Transcript, John Ruffini, 6 February 2012, Brisbane [p5408: line 10].

³⁵² Transcript, Stephen Robertson, 9 February 2012, Brisbane [p5788: line 29-45].

³⁵³ Transcript, Ken Smith, 10 February 2012, Brisbane [p6025: line 2].

- d. Mr Spiller said he would have read through the entire document when he received it by email from Mr Borrows at 4.28pm on 16 January 2011.³⁵⁵
- e. Mr Borrows said he read the Seqwater contribution to the briefing note in its entirety.³⁵⁶
- f. Mr Pruss said he read the briefing note and glanced through the attachments. He recalled the fact that there was a table which detailed when each strategy had been used.³⁵⁷
- g. Mr Drury said he glanced through the final briefing note, but would not have gone through the details or questioned any of the data or information inserted by the flood engineers.³⁵⁸
- h. Mr Bradley, then Director-General of DERM received several versions of the Ministerial Briefing note, and was involved in its preparation.³⁵⁹ He forwarded the preliminary draft of the briefing note to the Minister's office at 10.33pm on Sunday 16 January 2011, and met with the Minister the following morning when the report was tabled.³⁶⁰

Conclusions on Ministerial briefing note

285. The times recorded for the use of particular strategies under the manual in the briefing note are inconsistent with the Summary of the Manual document, the Strategy Summary Log and, as will be explored in the next section, the flood event report dated 2 March 2011.³⁶¹
286. Mr Tibaldi gave evidence that it was not surprising that the table was 'wrong' in the briefing note, given the circumstances in which it was created; it was written in 'two hours' and he hadn't slept for a long time.³⁶² He gave evidence

³⁵⁴ Transcript, Barry Dennien, 8 February 2012, Brisbane [p5671: line 40-50].

³⁵⁵ Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5630: line 32].

³⁵⁶ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5959: line 5].

³⁵⁷ Transcript, James Pruss, 11 February 2012, Brisbane [p6050: line 50] – [p6051: line 20].

³⁵⁸ Transcript, Robert Drury, 6 February 2012, Brisbane [p5504: line 39]; [p5509: line 32].

³⁵⁹ Exhibit 390, Statement of John Bradley, 4 April 2011, Annexure JNB-30; Exhibit 1150, Statement of John Bradley, 1 February 2012 [p4: para 21]

³⁶⁰ Exhibit 1150, Statement of John Bradley, 1 February 2012 [p4: para 22].

³⁶¹ Exhibit 24.

³⁶² Transcript, John Tibaldi, 2 February 2012, Brisbane [p5067: line 32].

that to reflect accurately when strategies had been employed, he would have to complete the exercise he did to create the March report (a thorough consideration of all the objective evidence), which he did not do to produce this document.³⁶³

287. Mr Robertson gave evidence that he assumed the briefing note to be correct, but wouldn't have been surprised if the account of the event changed between his briefing note and the formal flood event report.³⁶⁴ He recognised the short timeframe in which the briefing note was required to be completed and the fact that the flood engineers had completed it during a stressful, difficult time, while they were still managing a flood event.³⁶⁵ He gave evidence that quite regularly, initial information given in a briefing note might change upon a more detailed review.³⁶⁶
288. There was some evidence before the Commission that some of the flood engineers were in a fragile state, physically and emotionally, at the time they were required to produce the briefing note.³⁶⁷ Mr Tibaldi became emotional in the witness box when asked to recall the events of 15 January 2011.³⁶⁸ He said 'there was to be a press conference and they wanted one of the flood engineers to go and I just couldn't go, I just couldn't. Sorry. I just can't remember that day.'³⁶⁹ He said that he was not operating at a level where he could write something of the nature of a briefing note for a Minister.³⁷⁰ Mr Drury gave evidence that he knew the engineers were 'pretty tired'.³⁷¹
289. While those matters might go some way to explaining errors on behalf of the original author of the document, they do not explain why those errors were allowed to remain until the finished brief was presented to the Minister. All four flood engineers were sent numerous drafts of the briefing note. The briefing note was destined for the Minister; it was an important document. The

³⁶³ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5067: line 41].

³⁶⁴ Transcript, Stephen Robertson, 9 February 2012, Brisbane [p5790: line 2-50].

³⁶⁵ Transcript, Stephen Robertson, 9 February 2012, Brisbane [p5790: line 4-48]; [p5792: line 5-30].

³⁶⁶ Transcript, Stephen Robertson, 9 February 2012, Brisbane [p5790: line 4-48].

³⁶⁷ See, for example, Transcript, John Tibaldi, 3 February 2012, Brisbane [p5161: line 14].

³⁶⁸ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5064: line 17].

³⁶⁹ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5064: line 17].

³⁷⁰ Transcript, John Tibaldi, 3 February 2012, Brisbane [p5160: line 18].

³⁷¹ Transcript, Robert Drury, 6 February 2012, Brisbane [p5580: line 9].

flood engineers were, by now, keenly aware that their conduct would be judged – this was the first formal account of how they used the strategies during the event. All of them must have recognised that it was important that this document be accurate.

290. As for the other documents being prepared at this time, the energy applied to preparing the brief for the Minister on contrasts starkly with the lack of concern for recording strategies prior to this date. It demonstrates knowledge of the importance of presenting a record of strategy choices for review by senior management and external parties.
291. Against this background, it is difficult to accept the oral testimony of Mr Malone, Mr Ayre and Mr Ruffini that they did not open the documents emailed to them. As stated above, it is open to infer, in the face of this testimony that they did read versions of this document. All versions they received included the ‘erroneous’ references to strategy W2 being invoked at 7.00pm on 9 January and W3 being implemented at 6.30am on 10 January. If they had read that section, and knew it to be incorrect, they would surely have raised it with the other flood engineers or with Mr Drury or Mr Borrows. Their failure to comment on the brief must therefore indicate that they thought that the attribution of strategies to times was correct (or at least it was not so plainly wrong as to warrant comment). This supports the inference that none of them knew which strategies had been used during the event, at least until the implementation of W4 on Tuesday 11 January.
292. A further matter arises from this Ministerial briefing note. If the flood engineers did, honestly, consider that the March flood event report was accurate and that this briefing note was produced in error, it is surprising that they did not take steps to identify those errors to the Minister, the SEQ Water Grid Manager and Seqwater management. It is not enough to produce a report which contradicts the briefing note and present it to those persons – efforts should have been made to correct the record as soon as it was found to be false: in this case, if the flood engineers are to be believed, when Mr Tibaldi discovered that W2 was not used during the flood event.

Conclusions from Summary of Manual, Strategy Summary Log and the brief for the Minister

293. Mr Malone's Summary of Manual, the Strategy Summary Log and Mr Tibaldi's brief for the Minister were all written and reviewed over the three days from 15 January 2011 to 17 January 2011. All three exercises came to different conclusions about the times at which the different strategies were engaged. There is no evidence on their face to suggest that they are iterations of a single draft. Although several individuals had the opportunity to review all three documents, no one has professed a recollection of having done so. Collectively, these documents point towards a number of findings:

- a. All of the flood engineers were aware of the need to present a record of the strategies used in the January 2011 flood event. They were prepared to dedicate scarce resources to compiling that record.
- b. None of the flood engineers felt able to rely on their own, or each others', recollections of the strategies that were used to prepare the record. The events were then very recent and memories were yet to fade. This strongly suggests they accepted that none of them knew which strategy they were in during the flood event, at least until they reached W4.
- c. Despite knowing that they were preparing a reconstruction of events, they framed the language of their drafts as if it was a record of what had actually occurred. This was done to give the impression to senior management and external reviewers that clear conscious choices had been made about the strategies used during the flood event.

6. The creation and approval of the March report

Evidence as to states of mind – 24 January to 1 February 2011

Responsibility for the report

294. After the flood event concluded on 20 January 2011, Seqwater turned attention to the need for a flood event report as required by section 2.9 of the Wivenhoe manual. Mr Tibaldi was the primary author of most of the report; in particular he wrote sections 2 (Flood Event Summary) and 10 (Manual Compliance),³⁷² which contain the information about the use of each of the strategies under the manual. Mr Malone said he wrote parts 5, 6, 8 and 9 of the report.³⁷³ Mr Ayre said that he wrote parts 5 and 7.³⁷⁴
295. Mr Tibaldi and Mr Malone were in the flood operations centre full time during the period of the production of the report.³⁷⁵ Mr Tibaldi gave evidence that he started work on the report on 24 January 2011³⁷⁶ and was working on it up until the end of February 2011.³⁷⁷ He was drafting sections of the report.³⁷⁸ Mr Malone provided data to Mr Tibaldi to use for his parts of the report,³⁷⁹ and gave advice to him as to the analysis of that data.³⁸⁰
296. Mr Ruffini was not often in the flood operations centre while the report was being written; he had responsibilities to fulfil within his full time role with DERM.³⁸¹ There are different accounts of Mr Ayre's presence in the flood operations centre. Mr Tibaldi gave evidence that Mr Ayre was in the flood

³⁷² Exhibit 1036, Eleventh Statement of John Tibaldi, 1 February 2012 [p1: para 4]; Exhibit 55, Transcript of Interview of John Tibaldi with Commission Staff, 29 March 2011 [p6: line 10]; Exhibit 1075, Statement of Terrence Malone, 1 February 2012 [p1: para 3]; [p2: para 4]; Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p4: para 22].

³⁷³ Exhibit 1075, Statement of Terrence Malone, 1 February 2012 [p2: para 4].

³⁷⁴ Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p10: para 64, 71].

³⁷⁵ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5023: line 40].

³⁷⁶ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5023: line 32].

³⁷⁷ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5023: line 20].

³⁷⁸ Transcript [p5023: line 10].

³⁷⁹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p3: para 15]; Exhibit 1075, Statement of Terrence Malone, 1 February 2012 [p3: para 8(a), 9].

³⁸⁰ Exhibit 1075, Statement of Terrence Malone, 1 February 2012 [p3: para 8(b)]; [p4: para 12], Annexure TAM-1 and TAM-2.

³⁸¹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p2: para 8]; Exhibit 43, Transcript of Interview with Commission Staff, 29 March 2011 [p44: line 44]; Transcript, John Tibaldi, 2 February 2012, Brisbane [p5023: line 52].

operations centre only occasionally, and that he was busy with work for SunWater.³⁸² Mr Ayre gave evidence that he was offline from his usual job at SunWater and was tasked, full time, to the production of the flood event report;³⁸³ he still had some responsibilities to SunWater but was operating out of the flood operations centre for a large portion of his time.³⁸⁴ Mr Malone said that Mr Ayre was in the flood operations centre ‘on and off’.³⁸⁵

297. Mr Tibaldi said that he did not give drafts of the reports to the other flood engineers until he thought it was in a state suitable to distribute.³⁸⁶ Between 24 January and 1 February, he created that draft.

Mr Tibaldi’s production of a draft for circulation

298. The methodology adopted by Mr Tibaldi for the production of his parts of the report was the subject of much evidence. In his statement to the Commission, Mr Tibaldi stated that he looked at source data available to him in the flood operations centre to prepare drafts of the report.³⁸⁷ Mr Tibaldi said in evidence that the data he would have used included the situation reports,³⁸⁸ lake levels, release rates,³⁸⁹ technical situations report, directives and the flood event log.³⁹⁰ He said he completed the draft for distribution primarily using that data, although he opines that he would have had conversations with the other flood engineers about it.³⁹¹ He thought that starting with the facts was the best process.³⁹²
299. It cannot be suggested that Mr Tibaldi should have written the report entirely from his own personal recollections of what occurred: he was on duty for only 96 of the 324 hours in the flood event, and had only two shifts prior to the time

³⁸² Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p2: para 8]; Transcript, John Tibaldi, 2 February 2012, Brisbane [p5023: line 52].

³⁸³ Transcript, Rob Ayre, 4 February 2012, Brisbane [p5283: line 27].

³⁸⁴ Transcript, Rob Ayre, 4 February 2012, Brisbane [p5283: line 27].

³⁸⁵ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5326: line 26].

³⁸⁶ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p2: para 7; p7: para 38].

³⁸⁷ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p3: para 12].

³⁸⁸ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5036: line 40].

³⁸⁹ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5082: line 33].

³⁹⁰ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5083: line 3].

³⁹¹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p3: para 17].

³⁹² Transcript, John Tibaldi, 2 February 2012, Brisbane [p5076: line 35].

at which strategy W4 was applied.³⁹³ He also said that when he started to prepare the report, he did not have a clear recollection of events that occurred during the flood event.³⁹⁴

300. He agreed that he did not ask for, nor have reference to, the personal recollections of the other flood engineers during his production of the draft report to be circulated to the others.³⁹⁵ When asked why it was that he did not ask the other flood engineers what strategy they were using, he said he did not think that was a good process. He said that he did not think it was a good process for the flood engineers to be ‘sitting around sort of throwing in ideas’ for him to draft into the report.³⁹⁶ He gave evidence that the flood event was an emotional time and that all the flood engineers had suffered from lack of sleep. He asked, rhetorically, how they would remember what happened?³⁹⁷ How good would their recollection of events be?³⁹⁸ He said that a draft report would allow the other flood engineers to test themselves against the data.³⁹⁹ Specifically, he agreed that he did not ask Mr Ayre, who was the flood engineer on shift at 8.00 am on 8 January whether he transitioned to W3 at that time.⁴⁰⁰

301. It is clear that Mr Tibaldi was writing his parts of the report by reference to the data only, and not the personal recollections of those who were on shift at key times. He described what he was doing in many different ways:

- a. reconstructing the transitions between strategies W1, W2, W3 and W4 with the benefit of the data⁴⁰¹
- b. ‘attributing strategy labels’⁴⁰²

³⁹³ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p3: para 16].

³⁹⁴ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p1: para 5].

³⁹⁵ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5025: line 28-50]; [p5076: line 30-42]

³⁹⁶ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5076: line 42].

³⁹⁷ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5076: line 49].

³⁹⁸ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5083: line 30].

³⁹⁹ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5077: line 1].

⁴⁰⁰ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5084: line 11]; [p5085: line 34].

⁴⁰¹ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5037: line 25-47].

⁴⁰² Transcript, John Tibaldi, 2 February 2012, Brisbane [p5037: line 19].

- c. drawing an inference as to which strategy applies from the objective circumstances⁴⁰³
- d. ‘tr[ying] to match the strategy transitions against the data’⁴⁰⁴
- e. finding out which strategies were ‘applicable’ at each stage of the flood event by reference to the data, including lake level and release rates⁴⁰⁵
- f. writing down, based on the facts, what he believed to have occurred⁴⁰⁶
- g. trying to write down what actually occurred.⁴⁰⁷

302. The application of this methodology is demonstrated in the drafts of the flood event summary (which was to become section 2 of the report) produced by Mr Tibaldi between 24 January and 1 February 2011. Those drafts show, and Mr Tibaldi confirmed in evidence,⁴⁰⁸ that as he looked at more data, his understanding of when each strategy was used in the flood event changed. He said he wrote down initial thoughts and considerations to test against the available information.⁴⁰⁹ He frequently emailed drafts from the email account at the flood operations centre to his Seqwater email account. The drafts show the progression of his understanding of when the transitions between strategies were made.

303. A draft sent by Mr Tibaldi at 4:35pm on 24 January 2011 shows:⁴¹⁰

- a. transition to W2 occurred at some time between 3.00 pm on 7 January 2011 and 2.00 pm on 8 January 2011⁴¹¹

⁴⁰³ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5119: line 12].

⁴⁰⁴ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5026: line 30].

⁴⁰⁵ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5035: line 22].

⁴⁰⁶ Transcript, John Tibaldi, 3 February 2012, Brisbane [p5159: line 26].

⁴⁰⁷ Transcript, John Tibaldi, 3 February 2012, Brisbane [p5159: line 46].

⁴⁰⁸ Transcript [p5031: line 19-50].

⁴⁰⁹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p3: para 19].

⁴¹⁰ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item B.

⁴¹¹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item B [p5].

- b. transition to W3 occurred at some time between 7.00 pm on 9 January 2011 and 1.00 am on 10 January 2011⁴¹²
 - c. transition to W4 occurred at some time between 4.00 am on 11 January 2011 and 10.00 am on 11 January 2011.⁴¹³
304. In a draft sent by Mr Tibaldi at 4.37 pm on 25 January 2011, the transition between W2 and W3 was amended to occur between 2.00 pm on 9 January 2011 and 7.00 pm on 9 January 2011,⁴¹⁴ an earlier time than that recorded in the 24 January 2011 draft.
305. A draft sent by Mr Tibaldi at 3.41pm on 28 January 2011 was the first draft that connected the transition from W1 to W2 with the lake level exceeding 68.5 metres. It identified the time period during which the transition occurred as between 9.00 am on 7 January 2011 and 3.00 pm on 7 January 2011, but included the words “Transition from Strategy W1 to W2 once it becomes apparent that the Wivenhoe Dam level is likely to exceed 68.5 metres”.⁴¹⁵
306. A draft sent at 4.22 pm on 31 January 2011 is the first which indicates that W2 is bypassed.⁴¹⁶ It indicates a transition from W1 to W3 at some time between 3.00 pm on 7 January 2011 and 2.00 pm on 8 January 2011.⁴¹⁷ Mr Tibaldi must have, between this draft and earlier drafts, determined from the data that the conditions of W2 were never satisfied during the event (see section 7.2, below). He agreed that his understanding would have changed between drafts because he accumulated more data about the situation.⁴¹⁸ While Mr Tibaldi changed that part of the draft to indicate that W2 was bypassed, this draft was sent before the whole document had been amended to take into account the discovery: on later pages, it indicates that W2 was in force at 1.00 am 9

⁴¹² Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item B [p10].

⁴¹³ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item B [p15].

⁴¹⁴ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item E [p9].

⁴¹⁵ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item M [p5].

⁴¹⁶ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item P.

⁴¹⁷ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item P [p5].

⁴¹⁸ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5031: line 19-50].

January 2011,⁴¹⁹ and then states that the transition from W2 to W3 occurred at 7.00 pm on 9 January 2011.⁴²⁰

307. Mr Tibaldi's statement also includes one draft of the section that became section 10 in the March report (Flood Management Strategies and Manual Compliance). It was sent at 4.21 pm on 31 January 2011, one minute before the draft of the flood event summary indicated above. It states that it was not possible to meet the intent of W2 and so W3 adopted for use at 8.00 am on 8 January 2011.⁴²¹ That document appears to be the first draft of section 10 of the report.⁴²²

Concern about transition to strategy W2

308. The progression of the drafts above indicate that, in particular, Mr Tibaldi changed his view about when the change was made from strategy W1, and what happened when it did.
309. Mr Tibaldi said that he believes that he recorded W2 as being used in early drafts because the strategy selection flowchart in the manual requires the transition from W1 to W2 when the maximum flow at Lowood is expected to be below 3500 m³/s and the maximum flow at Moggill is expected to be below 4000 m³/s.⁴²³ Both those conditions were met when the lake level exceeded 68.5 metres, the trigger for a transition from W1 to W2 or W3. He considered that the flowchart does not allow a transition to W3 in those circumstances.⁴²⁴ On the other hand, the amount of water being released from the dam at the time the lake level exceeded 68.5 metres was too high for W2 to be in use.⁴²⁵
310. Strategy W2 requires the maximum flow in the Brisbane River at Lowood to be the lesser of the natural peak flow (excluding Wivenhoe Dam releases) or 3500 m³/s and the maximum flow in the Brisbane River at Moggill to be the lesser of the natural peak flow (exceeding Wivenhoe Dam releases) or 4000

⁴¹⁹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item P [p7].

⁴²⁰ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item P [p9].

⁴²¹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012, Annexure JT-1, Item O [p12].

⁴²² It is named 'Flood MGt Strategies and Manual Compliance – 01. doc', and there are no other drafts attached before it.

⁴²³ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p4: para 25-26].

⁴²⁴ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p4: para 25-26].

⁴²⁵ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p4: para 26].

m³/s.⁴²⁶ To keep the flow at Moggill and Lowood within those limits at 8.00 am on 8 January 2011 would have required a significant reduction of releases from Wivenhoe Dam. The release at that time was 927 m³/s.⁴²⁷ The predicted peak natural flow at Lowood and Moggill at 7.00am on 8 January 2011 was 530 m³/s and 690 m³/s, respectively.⁴²⁸ To stay within the confines of strategy W2 would involve releases from Wivenhoe Dam, added to the expected flow at Moggill at the time the dam releases reached Moggill being below 690 m³/s. That would clearly involve a significant reduction in the release rates judged appropriate at that time by the flood engineers.⁴²⁹

311. From this analysis, Mr Tibaldi believed the dam was not being operated under strategy W2 at 8.00 am on 8 January 2011.⁴³⁰ Since the lake level had exceeded 68.5 metres, he concluded that the dam must have been operating in W3.⁴³¹
312. Having come to the conclusion that the releases from the dam indicated it was being operated in W3 from 8.00 am on 8 January, Mr Tibaldi was faced with a dilemma. He was concerned that the flowchart had not been followed.⁴³² In the end, he decided that there was no non-compliance with the intent of the manual because reducing releases from Wivenhoe to the amount allowed by W2 would not have been sensible at that time.⁴³³
313. In his eleventh statement on 1 February 2012, Mr Tibaldi said that he had discussed this issue with Mr Allen.⁴³⁴ In oral evidence, he also said he was fairly certain he would have raised it with Mr Ayre when discussing an advanced draft with him.⁴³⁵ Mr Tibaldi said that he would not have raised it

⁴²⁶ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, 2009 [p27].

⁴²⁷ Exhibit 24, Seqwater, January 2011 Flood Event, Report on the Operation of Somerset Dam and Wivenhoe Dam, 2 March 2011 [p155].

⁴²⁸ Exhibit 22, Model Runs, Appendix A1 [p2, row: Sat 08/01/2011 07:00].

⁴²⁹ Mr Tibaldi produced a table of the range of estimated allowable releases under strategy W2 in his statement: Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p5-6].

⁴³⁰ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p6: para 29]; [p7: para 36].

⁴³¹ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5035: line 29]; [p5058: line 20].

⁴³² Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p6: para 31].

⁴³³ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p7: para 31].

⁴³⁴ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p7: para 33].

⁴³⁵ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5035: line 45].

early in the drafting process because he was concerned that the error (being the inconsistency between the flowchart and the conditions of W2 in the manual) was his error.⁴³⁶

314. Mr Ayre, in his statement dated 30 January 2012, recalled that whilst in the flood operations centre and working on the report, Mr Tibaldi had said to him, that he had realised from the data that the ‘criteria of W2 could not technically have been achieved’.⁴³⁷ Mr Ayre said that he agreed with Mr Tibaldi.⁴³⁸ Mr Ayre could not recall whether other flood engineers were involved in that discussion.⁴³⁹
315. In oral evidence, Mr Ayre expanded upon this account. He said he was in the flood operations centre with Mr Tibaldi and Mr Malone; that Mr Tibaldi was looking at something on his computer screen and said words to the effect ‘we didn’t implement strategy W2’.⁴⁴⁰ Mr Ayre looked at what Mr Tibaldi was looking at and agreed with him.⁴⁴¹ Mr Ayre agreed in oral evidence that he had worked out that they had not been in W2 from the flow rates; he had recognised that the release at that time was in excess of the naturally occurring flow at Lowood.⁴⁴²
316. When it was suggested to him that he surely did not need to look at data to know that he had not implemented W2, Mr Ayre said that it was a couple of weeks after the event and he didn’t necessarily recall what happened with clarity.⁴⁴³ He said his agreement indicated that Mr Tibaldi had just discovered what actually happened as he, Mr Tibaldi, was not on shift at the time of the transition from W1 to W3.⁴⁴⁴ He denied that they were trying to make the data fit to how it ought to have been.⁴⁴⁵

⁴³⁶ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5035: line 5-34].

⁴³⁷ Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p8: para 52].

⁴³⁸ Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p8: para 52].

⁴³⁹ Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p8: para 52].

⁴⁴⁰ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5207: line 40].

⁴⁴¹ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5207: line 48].

⁴⁴² Transcript, Rob Ayre, 3 February 2012, Brisbane [p5207: line 55].

⁴⁴³ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5208: line 3].

⁴⁴⁴ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5208: line 52] – [p5209: line 1].

⁴⁴⁵ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5208: line 47].

317. Mr Ayre's claim to not recall with clarity what happened during the flood event is to be contrasted with his purported recall of events evinced in statements submitted to the Commission, and his evidence in public hearings of the Commission in April 2011. He said then that he was in strategy W3 at 8.00 am on 8 January 2011.⁴⁴⁶ (This statement is referred to above in Part 3 evidence of strategy choice.)
318. Mr Malone said that he was not aware of any difficulties encountered by Mr Tibaldi in respect of W2, but thought he might have discussed it with Mr Ayre.⁴⁴⁷ Mr Ruffini recalled that there was some conversation about an inconsistency in the transition to W2 but could recall no details; he thought Mr Tibaldi had discussed it with Mr Ayre.⁴⁴⁸
319. Mr Tibaldi also said that he raised the issue with Mr Allen. He agreed that he must have explained, in general terms, how he was writing the report; that he was trying to work out which strategy had been applicable.⁴⁴⁹ He said he did not go into detail because Mr Allen would be one of the people judging the report.⁴⁵⁰ He recalled in his statement that Mr Allen said words to the effect 'just give us the facts John, and this is what you will be judged on'.⁴⁵¹
320. Mr Allen could not recall a conversation with Mr Tibaldi about the transition to W2 when he gave oral evidence to the Commission,⁴⁵² but did not rule it out.⁴⁵³ He could remember Mr Tibaldi asking him what he should put in the report, to which he said he replied 'everything'.⁴⁵⁴ He could also remember a conversation with Mr Tibaldi about the flowchart in the manual, but thought that might have been during the revision of the manual in 2011.⁴⁵⁵ He said that there would be no basis for Mr Tibaldi to discuss W2 with him;⁴⁵⁶ the part he

⁴⁴⁶ Transcript, Rob Ayre, 12 April 2011, Brisbane [p156: line 15].

⁴⁴⁷ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5328: line 10].

⁴⁴⁸ Transcript, John Ruffini, 6 February 2012, Brisbane [p5416: line 54].

⁴⁴⁹ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5034: line 45]-[p5035: line 26].

⁴⁵⁰ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5035: line 6].

⁴⁵¹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p7: para 33].

⁴⁵² Transcript, Peter Allen, 10 February 2012, Brisbane [p5920: line 36]; [5939: line 26].

⁴⁵³ Transcript, Peter Allen, 10 February 2012, Brisbane [p5920: line 54].

⁴⁵⁴ Transcript, Peter Allen, 10 February 2012, Brisbane [p5920: line 16].

⁴⁵⁵ Transcript, Peter Allen, 10 February 2012, Brisbane [p5935: line 44] – [p5936: line 22].

⁴⁵⁶ Transcript, Peter Allen, 10 February 2012, Brisbane [p5921: line 1].

was most interested in was the transition to W4.⁴⁵⁷ When it was put to him that a conversation occurred about the transition to W2 and that he had said ‘just give us the facts John, and this is what you will be judged on’, Mr Allen gave evidence that he would have said ‘just give us the facts’, but said he would not have said ‘that is what you will be judged on’.⁴⁵⁸ The latter phrase, he said, was not something he would tend to say.⁴⁵⁹

States of mind of flood engineers regarding the flood event report

What the report is

321. Mr Tibaldi said in his first statement to the Commission that the report provided a ‘fair and accurate account of the events’ of the January 2011 flood event.⁴⁶⁰ In oral evidence, he confirmed he still held the view that the report accurately reflected the events that happened.⁴⁶¹
322. If the report did reflect accurately the selection of strategies during the January 2011 flood event, it would only be by a coincidence. Mr Tibaldi’s methodology for the creation of the report, with its focus on lake levels and release rates, was a perfect way to go about creating a blueprint for what should have occurred had the engineers complied with the manual. However, strategies under the manual involve, importantly, a state of mind. The data is incapable of establishing what in fact an engineer’s primary consideration was at any point in time. The only way to so determine whether a strategy was selected, and therefore what primary consideration was engaged, is by reference to evidence which establishes the state of mind of the engineer on shift. As noted above, in part such evidence might be direct, in the form of a statement from that engineer, or indirect, and involve inferences drawn from the fact of practices in place, or from things said and done at the time. Mr Tibaldi did not have regard to any such evidence. If he had, it ought to have

⁴⁵⁷ Transcript, Peter Allen, 10 February 2012, Brisbane [p5920: line 36]; [p5921: line 1].

⁴⁵⁸ Transcript, Peter Allen, 10 February 2012, Brisbane [p5936: line 30 – 40]; [p5939: line 34 – 41].

⁴⁵⁹ Transcript, Peter Allen, 10 February 2012, Brisbane [p5936: line 36].

⁴⁶⁰ Exhibit 51, Statement of John Tibaldi, 25 March 2011 [p5: para 21].

⁴⁶¹ Transcript, John Tibaldi, 3 February 2012, Brisbane [p5134: line 49].

been unnecessary for him to engage in reasoning to conclude that strategy W2 was not used during the event.

323. Another reason that any reconstruction such as that undertaken by Mr Tibaldi must be unreliable is because it takes no account of the discretion able to be exercised by the flood engineers under the manual. Mr Tibaldi acknowledged that his approach assumed there had been no prediction as to lake level.⁴⁶² The manual allows for strategy W2 or strategy W3 to be implemented when the predicted lake level is between 68.5 metres and 74.0 metres.⁴⁶³ If any engineer chose to exercise this discretion, it would be impossible to discern that from lake levels and releases retrospectively.
324. This method of reconstruction also carries with it the risk of displacing each engineer's actual recollection of what occurred, as was noted above in part 3.
325. To the extent that it purports to record the adoption or implementation of strategies pursuant to the manual, the report is fundamentally misleading.

Mr Tibaldi's state of mind

326. The conversation with Mr Ayre about his 'discovery' that W2 was not implemented sheds light on Mr Tibaldi's state of mind, and the collective state of knowledge about strategies. Mr Tibaldi must have known that Mr Ayre would not be able to tell him when the transition was made out of W1, nor to which strategy he had transitioned. If he had thought Mr Ayre had a recollection, he would have asked. Instead, the process followed is consistent with Mr Ayre's most recent oral evidence that there was no reason for him, on Saturday 8 January 2011, to distinguish between W2 and W3.
327. When Mr Tibaldi told Mr Ayre what he had worked out, Mr Ayre had to look at the data to confirm Mr Tibaldi's view. If Mr Ayre had known, as he subsequently represented, that he had transitioned to W3 from W1 at 8.00 am on 8 January, his response to Mr Tibaldi's discovery would surely have been as simple as 'yes, I did'. The need for any conversation on the topic must have

⁴⁶² Transcript, John Tibaldi, 2 February 2012, Brisbane [p5119: line 30].

⁴⁶³ Exhibit 21, Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Revision 7, November 2009 [p27-28].

made it clear to Mr Tibaldi that Mr Ayre did not know when he had transitioned out of W1, if at all, and if he did, whether he had transitioned to W2 or W3.

328. Knowing that, Mr Tibaldi must have been cognisant that a statement in the flood event report that a transition was made from W1 to W3 at 8.00 am on 8 January was not an accurate record of that which was done by the engineer on duty at that time.
329. It follows that he must have known the March Report was misleading. To assert that W3 was “adopted for use” at 8.00 am on 8 January flies in the face of all Mr Tibaldi must have known by then about the absence of any evidence to suggest that Mr Ayre did any such thing. The “adoption” was a concept arrived at by Mr Tibaldi, and even then only after many drafts. Further, and irrespective of whether he was physically in possession of the ministerial briefing note when he was writing the March report, the inference that he knew the two were contradictory is inevitable – he wrote both of them.

Knowledge and involvement of the other flood engineers

330. Mr Tibaldi was only in the flood operations centre for 24 hours of the 120 hour period from the start of the flood event to when strategy W4 was implemented.⁴⁶⁴ Mr Tibaldi agreed that given that he wasn’t there for many of the decisions about which he would be writing; the other three flood engineers must have understood he was going to write it by reference to records and data.⁴⁶⁵
331. Although Mr Tibaldi was the primary author of the parts of the report that described in detail when strategies were implemented, all of the flood engineers were involved in the creation of the report. Mr Malone agreed that the exercise was collective: all were contributing.⁴⁶⁶ Mr Ayre described it, in his evidence in April 2011, as a team effort.⁴⁶⁷

⁴⁶⁴ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p3: para 16].

⁴⁶⁵ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5025: line 22].

⁴⁶⁶ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5326: line 32].

⁴⁶⁷ Transcript, Rob Ayre, 12 April 2011, Brisbane [p106: line 54].

Opportunity to raise concerns with the content of the drafts

332. When drafts of any part of the report were completed, the author would make it available to the other flood engineers for review and comment.⁴⁶⁸ This was usually done in hard copy. When Mr Ayre and Mr Ruffini visited the flood operations centre, he would show them drafts.⁴⁶⁹ The flood engineers would review the drafts and make comments – sometimes they would all meet and other times they would discuss their comments with Mr Tibaldi alone.⁴⁷⁰
333. Mr Tibaldi said that he did not give drafts of the reports to the other flood engineers until he thought it was in a state suitable to distribute.⁴⁷¹ Mr Tibaldi said that he thought all drafts distributed would have shown the transition from strategy W1 to strategy W3 at 8.00 am on 8 January 2011;⁴⁷² they did not see the early drafts which included the use of W2. Certainly, all of the drafts attached to the statements of the other three flood engineers on this topic did not indicate that W2 had been engaged.
334. Mr Tibaldi has no recollection of any of the other three engineers disagreeing with the version of events that a transition was made from W1 to W3, bypassing W2, at 8.00 am on 8 January 2011.⁴⁷³

Endorsing the report

335. Toward the end of the process, all of the flood engineers were given the option to sign a document stating that they agreed with the contents of the report. Mr Ruffini signed it,⁴⁷⁴ while Mr Ayre⁴⁷⁵ and Mr Malone⁴⁷⁶ did not. Mr Ayre said he did not agree with some parts of the report, giving the full supply level section as an example.⁴⁷⁷ Mr Malone said that he did not sign because he did

⁴⁶⁸ Transcript, John Tibaldi, 3 February 2012, Brisbane [p5138: line 8].

⁴⁶⁹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p2: para 8].

⁴⁷⁰ Transcript, John Tibaldi, 3 February 2012, Brisbane [p5205: line 39].

⁴⁷¹ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p2: para 7; p7: para 38].

⁴⁷² Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p7: para 38].

⁴⁷³ Exhibit 1036, Statement of John Tibaldi, 1 February 2012 [p7: para 39]; [p8: para 42]; Transcript, John Tibaldi, 2 February 2012, Brisbane [p5075: line 25]; Transcript, John Tibaldi, 3 February 2012, Brisbane [p5159: line 57] – [p5160: line 9].

⁴⁷⁴ Transcript, John Ruffini, 11 February 2012, Brisbane [p6073: line 2].

⁴⁷⁵ Transcript, Rob Ayre, 11 February 2012, Brisbane [p6104: line 53].

⁴⁷⁶ Transcript, Terrence Malone, 11 February 2012, Brisbane [p6093: line 52].

⁴⁷⁷ Transcript, Rob Ayre, 11 February 2012, Brisbane [p6105: line 1].

not feel he had enough time to vet the report.⁴⁷⁸ Both Mr Malone and Mr Ayre said they felt no difficulty in reporting any concerns they had with the content of the report.⁴⁷⁹ In any case, both Mr Malone and Mr Ayre warranted the accuracy of the report to this Commission.⁴⁸⁰

Rob Ayre

336. Mr Tibaldi said that he would have discussed with Mr Ayre the process by which he was producing the report because Mr Ayre was a senior flood operations engineer.⁴⁸¹
337. Mr Ayre gave oral evidence that he was aware of the way in which Mr Tibaldi was describing which strategies were applicable in the event.⁴⁸² Mr Ayre stated in his seventh statement that the strategy labels are ‘generally only attributed after the event as part of the reporting process’.⁴⁸³ In respect of the March flood event report, he states:⁴⁸⁴

92. The statements made in Section 10 of the Flood Event Report were made on the basis of a rigorous assessment of all available and necessary information that is relevant to make such a judgment.

93. The attribution of times at which the various strategies were applied was based upon a comprehensive set of modelling [sic] information which had been compiled for the report with corroboration of the Flood Engineer or Engineers involved.

94. It became apparent during that assessment that earlier interpretations of the attributions of the times that various strategies were applied were in error.

338. In respect of drafts of the report, Mr Ayre said that his practice was to make handwritten notes on hard copy drafts provided to him for review and then

⁴⁷⁸ Transcript, Terrence Malone, 11 February 2012, Brisbane [p6093: line 52].

⁴⁷⁹ Transcript, Terrence Malone, 11 February 2012, Brisbane [p6094: line 28]; Transcript, Rob Ayre, 11 February 2012, Brisbane [p6105: line 15].

⁴⁸⁰ Exhibit 17, Statement of Rob Ayre, 23 March 2011 [p31: para 154]; Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p5: para 29]; Exhibit 1049, Seventh Statement of Rob Ayre, 1 February 2012 [p18: para 95]; Exhibit 45, Statement of Terrence Malone, 25 March 2011 [p7: para 25].

⁴⁸¹ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5024: line 41].

⁴⁸² Transcript, John Tibaldi, 3 February 2012, Brisbane [p5209: line 13].

⁴⁸³ Exhibit 1049, Seventh Statement of Rob Ayre, 1 February 2012 [p5: para 28].

⁴⁸⁴ Exhibit 1049, Seventh Statement of Rob Ayre, 1 February 2012 [p17-18].

meet with the author of the section to discuss his comments.⁴⁸⁵ He received an early draft of section 2 of the report; it did not cover the whole of the flood event and indicated no transition out of W1.⁴⁸⁶ The last time period covered by this draft was 3.00 pm on 7 January to 2.00 pm on 8 January, but there is no transition included in that time period.⁴⁸⁷ The next draft he received, and to which he made handwritten notes on 2 February, indicated a transition from W1 to W3, bypassing W2, at 8.00 am on 8 January 2011.⁴⁸⁸ Mr Ayre was able to identify and provide two drafts of the Executive Summary, four drafts of section 2 that he had received and recalled reviewing sections 10 and 19.⁴⁸⁹

339. Mr Ayre agreed that he did not dissent from the proposition put in draft reports given to him by Mr Tibaldi that the transition from W1 to W3 had taken place at 8.00 am on 8 January 2011.⁴⁹⁰
340. Mr Ayre stated in his first statement to the Commission,⁴⁹¹ and confirmed in his sixth⁴⁹² and seventh⁴⁹³ statements, that he considered the report to be an ‘accurate record’ of the January 2011 flood event. He confirmed that again in oral evidence.⁴⁹⁴ In evidence, Mr Ayre said that the process of writing reports in the past was a retrospective exercise.⁴⁹⁵ However, he disagreed with the proposition that the March report was, in effect, a labelling exercise and not a reflection of the flood engineers’ state of mind.⁴⁹⁶
341. That position cannot be reconciled with the fact that he knew that Mr Tibaldi was reconstructing the event from the data, and so could not be determining the state of mind of the engineer on duty. Given that the key moment in time, 8.00 am on 8 January 2011, was a time that Mr Ayre was on shift, and that he

⁴⁸⁵ Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p2: para 5-6].

⁴⁸⁶ Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012, Exhibit 6.

⁴⁸⁷ Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012, Exhibit 6 [p4].

⁴⁸⁸ Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p7: para 43]; Exhibit 7 [p5].

⁴⁸⁹ Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p6: para 32-33]; [p7: para 42-45]; [p8: para 49]; [p9: para 55-56].

⁴⁹⁰ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5220: line 11].

⁴⁹¹ Exhibit 17, Statement of Rob Ayre, 23 March 2011 [p31: para 154].

⁴⁹² Exhibit 1048, Sixth Statement of Rob Ayre, 30 January 2012 [p5: para 29].

⁴⁹³ Exhibit 1049, Seventh Statement of Rob Ayre, 1 February 2012 [p18: para 95].

⁴⁹⁴ Transcript, Rob Ayre, 4 February 2012, Brisbane [p5292: line 49].

⁴⁹⁵ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5215: line 14].

⁴⁹⁶ Transcript, Rob Ayre, 3 February 2012, Brisbane [p5213: line 34].

knew he had not consciously been in W3 or W2 at that time, he must have been aware that the definitive ascription of W3 to that time was false.

342. In sum, Mr Ayre was complicit in Mr Tibaldi's presentation of the March flood event report as a purported account of the strategies actually used during the event because he:
- a. believed, as evidenced by his actions from 15-17 January 2011 and discussed above in section 5 that there was a need to present a record of the strategies used in the flood event
 - b. knew how Mr Tibaldi was going about creating the report, in that he was reconstructing what would have happened had the flood engineers complied with the manual
 - c. knew that Mr Tibaldi's method would satisfy the need for a record of strategies used and prove the flood engineers to be in compliance with the manual
 - d. must have known, from his involvement in preparing accounts between 15 and 17 January 2011, that none of the engineers had an actual recollection of the strategies that had been used, and when they were used. In particular, he must have known that he did not bypass W2 and adopt W3 at 8.00 am on 8 January 2011
 - e. knew that Mr Tibaldi's conclusions about the adoption of strategy W3 at 8.00 am on 8 January 2011 were false
 - f. did not indicate, to anyone, at any stage, when he had an obligation to do so, that the draft report was false in what it recorded about the move from W1, and misleading in what it purported to be
 - g. endorsed the report, and the effect of it in his statements to and evidence before the Commission.

Terry Malone

343. Mr Malone was in the flood operations centre for the period during which Mr Tibaldi wrote sections 2 and 10 of the report. Mr Tibaldi said that, naturally, he would have had some conversations with Mr Malone about the parts Mr Tibaldi was writing, although he could not recall any specific conversations.⁴⁹⁷
344. When asked whether he knew what Mr Tibaldi's approach to the creation of the report was, the following exchange ensued:

You knew how he was going about the report? You knew what his methodology was, to go back and look at all the data and make sure that strategies, changes of strategies were entered at the times when the data suggested that they should have been? You knew that was his methodology?-- He was going through the logs and everything, like trying to make sure it was all - he gleaned that was - that's what happened.

Well, it's what should have happened, isn't it?-- No.

He was going back and making sure that the log read the way it should have happened?-- No. No, the log wasn't changed.

No. Well, he was writing the report to indicate that strategies were changed at a time when the manual suggested they should have been changed?-- No, I don't see it that way.

You don't see it that way?-- I see it as that's the times they were implemented.

That's the times that they should have been implemented?-- No, that's the times they were implemented.

Okay. Didn't you just tell me a little while ago that you weren't even sure at the time, no-one was really sure about when W2 or W3 was in play?-- That's true.

There's absolutely no doubt in the March report, is there, that W2 was bypassed?-- That's what it says.

Yes. That's what the March report records very clearly, but that's not the state of mind of anyone at the time, was it?-- Not directly, no.⁴⁹⁸

345. Mr Tibaldi said that Mr Malone may have seen some of his early drafts in the flood operations centre, but could not recall sharing them with him.⁴⁹⁹ Mr

⁴⁹⁷ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5024: line 30].

⁴⁹⁸ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5309: line 31].[p5310: line 6]

⁴⁹⁹ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5024: line 38].

Malone said that toward the completion of the report, he took home a hard copy of the whole report to read. He identified a number of duplications or inconsistencies within the report which he discussed with Mr Tibaldi.⁵⁰⁰ There is no suggestion that he indicated any concern with the accuracy of those parts of the report that indicate a transition from W1 to W3 at 8.00 am on 8 January 2011. Mr Malone stated in his first statement to the Commission that he considered the report a ‘fair and reasonable reflection’ of the January 2011 flood event.⁵⁰¹

346. As stated above, it is clear from his actions between 15 and 17 January that Mr Malone was necessarily aware of the need to create a record of the strategies that were used.
347. Mr Malone rejected the proposition that the report did not record conscious engagement of strategies.⁵⁰² Later in cross examination, though, Mr Malone admitted that the March report does not reflect the state of mind of anyone at the time decisions were allegedly made.⁵⁰³ It should be inferred from that, his presence in the flood operations centre while Mr Tibaldi was writing the report, and his understanding that Mr Tibaldi was looking through the log and other evidence that he knew how Mr Tibaldi was reconstructing the use of strategies. He must have realised that Mr Tibaldi completing the report in this way would result in a record of strategies actually used which would indicate that the flood engineers complied with the manual.
348. He did not raise any concerns with any draft of the report, even though those draft reports indicated that he was in strategy W3 during his shift between 7.00 am and 7.00 pm on 9 January 2011. Mr Malone’s admitted uncertainty about whether W2 or W3 was in place has already been noted.⁵⁰⁴ He did not suggest changes or make comments on this part of the report, which he knew could not be true. He did not make comment that other parts of the report in respect of the strategy in place during the shifts of other engineers must also not be true,

⁵⁰⁰ Exhibit 1075, Statement of Terrence Malone, 1 February 2012 [p5-6: para 14(b)].

⁵⁰¹ Exhibit 45, Statement of Terrence Malone, 25 March 2011 [p7: para 25].

⁵⁰² Transcript, Terrence Malone, 5 February 2012, Brisbane [p5328: line 28].

⁵⁰³ Transcript, Terrence Malone, 4 February 2012, Brisbane [p5310: line 4].

⁵⁰⁴ Transcript, Terrence Malone, 2 February 2012, Brisbane [p5300: line 20-40]; Part 3, para 38

as none of them had a clear recollection of when strategies were used. He endorsed the final report in his evidence before the Commission.

349. By his actions, Mr Malone was involved, with the other three flood engineers, in the presentation of a false account of the flood event. The successful presentation and acceptance of this report as an accurate representation of that which actually occurred could not have been achieved without Mr Malone's endorsement. Had he expressed any reservation to anyone, about the lack of knowledge as to whether W2 or W3 had been applicable, then the report could not successfully have been presented in the form that it was.

John Ruffini

350. Mr Tibaldi said that he imagined he would have discussed the process of producing the report with Mr Ruffini when he dropped into the flood operations centre, but he could not recall specific conversations.⁵⁰⁵ He agreed that as a matter of logic, he would have told Mr Ruffini how he was writing the report.⁵⁰⁶
351. Mr Ruffini said that he understood that Mr Tibaldi was looking at the information available to work out what strategy they were in. Then Mr Tibaldi asked the other flood engineers to confirm that it matched up with their recollection.⁵⁰⁷ Mr Ruffini told Mr Tibaldi that it did match up with his recollection,⁵⁰⁸ but also gave this evidence:

Is that Mr Tibaldi asked you whether this matched your recollection and--- --?-- Words to that effect, yeah. He just asked us to confirm the accuracy of what he had written and as I said, I looked at the material, I looked at, you know, the spreadsheets that I had been using and things like that and said, "Yeah, that matches my" - you know, jogging my memory.⁵⁰⁹

352. Mr Ruffini gave evidence that he read drafts of sections 1, 2, 10 and 19 of the March report in the flood operations centre.⁵¹⁰ He said he also sometimes took

⁵⁰⁵ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5024: line 48].

⁵⁰⁶ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5205: line 4].

⁵⁰⁷ Transcript, John Ruffini, 6 February 2012, Brisbane [p5414: line 6].

⁵⁰⁸ Transcript, John Ruffini, 6 February 2012, Brisbane [p5414: line 29-41].

⁵⁰⁹ Transcript, John Ruffini, 6 February 2012, Brisbane [p5414: line 53]. [p5415: line 1]

⁵¹⁰ Exhibit 1078, Statement of John Ruffini, 30 January 2012 [p2: para 7]; [p2: para 13]; [p3: para 21]; [p4: para 27]

home electronic versions of the report to read. He annexed two such versions to his statement, one of which included track changes. He said that although he could not be sure, the track changes might have been made by him; he had saved the current version of the report from the flood operations centre computers onto a data stick to take home to review.⁵¹¹ He said he reviewed and endorsed the accuracy of sections 2, 10 and 19 of the March report.⁵¹² He identified section 2 and 10 of the report as ‘critical bits’; parts that he had gone through ‘pretty well’.⁵¹³

353. Mr Ruffini knew that Mr Tibaldi was creating the report by reference to data only and not personal recollections of the flood engineers. He was aware, because of the activities undertaken between 15 and 17 January 2011 that there was a need for a report that set out when strategies were undertaken. He must have realised that Mr Tibaldi’s method for the creation of the report would satisfy this need, while also concluding that there had been compliance with the manual. [REDACTED]

Evidence to the Commission

354. The purpose of producing a misleading flood event report must have included a desire to preclude a finding from this Commission, Mr Allen, the dam safety regulator, or others, that the flood engineers had not complied with the manual in their operation of the dam in the January 2011 flood event. To achieve that purpose required all of them to maintain the fiction that the flood event report was an accurate account of what happened. This was maintained in their statements and evidence to the Commission. Had any of them raised any

⁵¹¹ Transcript, John Ruffini, 6 February 2012, Brisbane [p5458: line 25-58].

⁵¹² Exhibit 1078, Statement of John Ruffini, 30 January 2012 [p3: para 19]; [p4: para 25]; [p4: para 29].

⁵¹³ Exhibit 43, Transcript of Interview with Commission Staff, 29 March 2011 [p45: line 11].

concern as to the accuracy of the account given, their common objective could not have been achieved. They have all then, by maintaining the accuracy of the flood event report in their statements and oral evidence to the Commission under oath or affirmation, intentionally misled the Commission. The precise identification of offences which may have been committed against Chapter 16 of the Criminal Code is a matter for another agency. It appears to the Commission that the following statements might be sufficient to warrant such an agency examining the possibility that offences under that chapter may be constituted by:

- a. in respect of Mr Ayre
 - i. any and all evidence given that the flood event report is an accurate account of events that actually occurred, for example: Exhibit 1049, Seventh Statement of Rob Ayre, 1 February 2012 [p18: para 95]; Transcript, Rob Ayre, 4 February 2012, Brisbane [p5292: line 49].
 - ii. any and all evidence given that he was in strategy W3 and had the primary consideration of protection of urban areas from inundation from 8.00 am, 8 January 2011 to the end of his shift at 7.00 pm, 8 January 2011, for example: Exhibit 17, Statement of Robert Ayre, 23 March 2011 [p84: para 384]; Exhibit 20, Statement of Rob Ayre, 11 April 2011 [p25: para 120].
- b. in respect of Mr Tibaldi
 - iii. any and all evidence given that the flood event report is an accurate account of events that actually occurred, for example: Exhibit 51, Statement of John Tibaldi, 25 March 2011 [p : para 34].
 - iv. any and all evidence given that he was in strategy W3 and had the primary consideration of protection of urban areas from inundation during his shift from 7.00 pm on 8 January 2011 to 7.00 am on 9 January 2011, for example:

c. in respect of Mr Malone

- v. any and all evidence given that the flood event report is an accurate account of events that actually occurred, for example: Exhibit 45, Statement of Terrence Malone, 25 March 2011 [p7: para 25]

[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

Mr Borrows and Mr Pruss: Seqwater's oversight and governance

355. In the course of the Commission's investigation a number of issues were identified with the systems and processes used in the creation of the March 2011 report during and following the January 2011 flood event. Responsibility for systems, processes and governance arrangements rests with Seqwater's management.⁵¹⁴
356. Mr Borrows, Seqwater's chief executive officer, has ultimate responsibility for the management of Seqwater's operations,⁵¹⁵ a role that includes risk management.⁵¹⁶ Mr Pruss, who in January 2011 was Seqwater's Executive General Manager – Water Delivery, had overall management responsibility for the operation of Wivenhoe and Somerset dams.⁵¹⁷

Identification of different accounts

357. Mr Borrows and Mr Pruss both received copies of conflicting accounts of the strategies used in the January 2011 flood event. They each received⁵¹⁸ and read⁵¹⁹ copies of the brief to the Minister on 16 January 2011; Mr Borrows

⁵¹⁴ *South East Queensland Water (Restructuring) Act 2007* [s15, s31].

⁵¹⁵ Exhibit 393, Statement of Peter Borrows, 1 April 2011 [p1: para 3].

⁵¹⁶ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5944: line 29].

⁵¹⁷ Exhibit 427, Statement of Jim Pruss, 4 April 2011 [p2: para 19].

⁵¹⁸ Exhibit 393, Statement of Peter Borrows, 1 April 2011 [p6: para 46-47].

⁵¹⁹ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5958: line 27]; [p5959: line 4]; Transcript, Jim Pruss, 11 February 2012, Brisbane [p6050: line 31].

attended the meeting with the Minister to discuss the brief.⁵²⁰ Neither identified the discrepancies between the account of strategies used in the Minister's brief and the March 2011 flood event report, or with any other account they had been provided with.

358. It is unfortunate that neither identified these discrepancies. Both had a sufficient level of knowledge and closeness to the operations such that it is reasonable to think they might have noticed them. Mr Borrows was generally familiar with the W strategies and had read the manual prior to the January 2011 flood event.⁵²¹ Mr Pruss was responsible for overseeing the drafting of the March 2011 report; the account of the strategies used and how they complied with the manual must have been regarded as a critical part of that report.
359. On balance, their failure to identify the differences should not be characterised as anything more than unfortunate. Neither Mr Pruss nor Mr Borrows was a technical expert,⁵²² nor did they profess to be closely involved with the substance of the March 2011 report. To the extent they bear any responsibility for the different accounts not being identified, it is because of the weaknesses in the processes for which they were responsible, rather than the adequacy of their personal reviews of the documents.

Communications between the Flood Operations Centre and Seqwater management

360. The lack of any formal protocol governing communications between the flood operations centre and Seqwater management during the January 2011 flood event is a matter of concern. Mr Pruss said he had no communications with the flood operations centre during the January 2011 flood event⁵²³ as all communications were handled by Mr Borrows and Mr Drury.⁵²⁴ By contrast, Mr Borrows said that he had relatively frequent contact with the flood

⁵²⁰ Exhibit 393, Statement of Peter Borrows, 1 April 2011 [p6: para 47].

⁵²¹ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5947: line 33].

⁵²² Mr Borrows trained as a civil engineer. Exhibit 393, Statement of Peter Borrows, 1 April 2011 [p1: para 8]. Mr Pruss holds a Bachelor of Science: Exhibit 427, Statement of Jim Pruss, 4 April 2011 [p2: para 9].

⁵²³ Exhibit 427, Statement of Jim Pruss, 4 April 2011 [p5: para 43].

⁵²⁴ Exhibit 427, Statement of Jim Pruss, 4 April 2011 [p5: para 43].

operations centre;⁵²⁵ the flood event log records that Mr Burrows was involved in 11 calls on 11 January 2011 alone.⁵²⁶ The strain caused by the number of calls (which were not solely from Mr Borrows) to the flood operations centre on this day was considered by the Commission in its Interim Report.⁵²⁷

361. When questioned, Mr Borrows explained that there are no systems or protocols in place which dictate when it is appropriate for the Seqwater chief executive officer to contact the flood operations centre.⁵²⁸ Similarly, there is no system to determine when information on the work of the flood operations centre should be provided by the chief executive officer to the board of Seqwater. Mr Borrows was able to point to a general Seqwater protocol about communications during emergencies,⁵²⁹ but it is not specific to flood events, and is framed in terms of actual, rather than potential, dangers.⁵³⁰ The primary mechanisms for information to be given to the board in January 2011 were ad hoc arrangements, such as special briefings or phone calls, rather than formal systems.⁵³¹

362. There are obvious advantages to a formal protocol being put in place. It would ensure that sufficient information is available to senior management to allow them to take relevant decisions and inform interested parties, and also ensure that the engineers in the flood operations centre are not overwhelmed by constant requests for updates.

Procedures for the creation of the flood event report

363. Particular issues arising with the production of the March 2011 flood event report are discussed in Part 7.

⁵²⁵ Exhibit 393, Statement of Peter Borrows, 1 April 2011 [p5: para 39-40]; Transcript, Peter Borrows, 10 February 2012 [p5944: line 51].

⁵²⁶ Exhibit 23, Flood event log [p19-25]; Transcript, Peter Borrows, 10 February 2012, Brisbane [p5945: line 5].

⁵²⁷ Queensland Floods Commission of Inquiry, Interim Report, 1 August 2011 [p69-70].

⁵²⁸ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5944: line 51].

⁵²⁹ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5945: line 10].

⁵³⁰ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5946: line 8].

⁵³¹ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5947: line 15].

364. The obligation to create a flood event report is imposed by the manual.⁵³² In revision 7, the version of the manual in force at the time of the January 2011 flood event, that responsibility is imposed on Seqwater.⁵³³ (In previous versions the responsibility was on the Senior Flood Operations Engineers.⁵³⁴) The report must be submitted to the “Chief Executive”, who is defined as the Director-General of the Department of Environment and Resource Management.⁵³⁵ Because the obligation is imposed on Seqwater as a corporate entity, it is the responsibility of Seqwater management to ensure that a full, complete and accurate report is prepared.
365. Mr Borrows acknowledged that at the time of the January 2011 flood event there was no system in place for the creation of flood event reports.⁵³⁶ Similarly, as far as Mr Borrows was aware, there was no process for formal or informal debriefs of staff following flood events to capture their observations and lessons learned.⁵³⁷
366. Following the January 2011 flood event Seqwater management recognised that a process would have to be designed to ensure that the flood event report was produced within the time allowed.⁵³⁸ In the past, Seqwater had contracted the preparation of flood event reports to Sunwater.⁵³⁹ Mr Borrows noted that the report “took on a different form and function to...the previous ones”. Mr Pruss commented that compared to previous reports, the January 2011 flood event report “was a wholly different beast; so we had to really develop a process on the go.”⁵⁴⁰ This recognition was appropriate and important.

⁵³² Exhibit 21, Manual of Operational Procedures at Wivenhoe and Somerset Dams, Version 7, November 2009 [section 2.9].

⁵³³ Exhibit 21, Manual of Operational Procedures at Wivenhoe and Somerset Dams, Version 7, November 2009 [p8: section 2.9].

⁵³⁴ Exhibit 34, Manual of Operational Procedures for Flood Mitigation at Wivenhoe and Somerset Dams, Version 6, December 2004 [p13: section 2.9].

⁵³⁵ Exhibit 21, Manual of Operational Procedures at Wivenhoe and Somerset Dams, Version 7, November 2009 [p2: section 1.2].

⁵³⁶ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5951: line 9].

⁵³⁷ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5949: line 56].

⁵³⁸ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5951: line 9].

⁵³⁹ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5950: line 28].

⁵⁴⁰ Transcript, James Pruss, 11 February 2012, Brisbane [p6052: line 5].

367. The main step taken by the board and Mr Borrowes to impose structure on the report's preparation⁵⁴¹ was to remove Mr Pruss from his usual duties and dedicate him to developing a governance structure and process for the writing of the report.⁵⁴² In Mr Borrowes's view, Mr Pruss's role involved, perhaps among other things:
- a. ensuring that the report was delivered by the mandated deadline⁵⁴³
 - b. ensuring that a rigorous analysis was done of the contents⁵⁴⁴
 - c. leading a working group with internal and external participants to develop the governance structure for the report.⁵⁴⁵
368. Mr Pruss explained that he volunteered for the process of organising the flood event report.⁵⁴⁶ Mr Pruss understood his role as building a governance process around the writing of the flood event report. It was intended to be a facilitative and supportive role directed to ensuring that approvals were given at the right time and that interested parties could become involved.⁵⁴⁷ It included managing the timetable for scoping, drafting, reviewing and editing the report.⁵⁴⁸ Somewhat surprisingly, none of the processes that were devised were recorded in writing.⁵⁴⁹
369. Considerable resources were dedicated to Mr Pruss's efforts. The overall team involved in the production of the report seems to have been sizeable: Mr Pruss was dedicated to assisting in governance processes for the report and he was assisted by a "small administrative and advisory team".⁵⁵⁰ Mr Pruss also involved technical experts, a legal team and a communications team.⁵⁵¹

⁵⁴¹ Transcript, Peter Borrowes, 10 February 2012, Brisbane [p5951: line 9].

⁵⁴² Transcript, Peter Borrowes, 10 February 2012, Brisbane [p5947: line 15]; [p5951: line 35].

⁵⁴³ Transcript, Peter Borrowes, 10 February 2012, Brisbane [p5947: line 15].

⁵⁴⁴ Transcript, Peter Borrowes, 10 February 2012, Brisbane [p5951: line 41].

⁵⁴⁵ Transcript, Peter Borrowes, 10 February 2012, Brisbane [p5952: line 9].

⁵⁴⁶ Transcript, James Pruss, 11 February 2012, Brisbane [p6051: line 48].

⁵⁴⁷ Transcript, James Pruss, 11 February 2012, Brisbane [p6053: line 1].

⁵⁴⁸ Transcript, James Pruss, 11 February 2012, Brisbane [p6053: line 14].

⁵⁴⁹ Transcript, James Pruss, 11 February 2012, Brisbane [p6053: line 30].

⁵⁵⁰ Transcript, James Pruss, 11 February 2012, Brisbane [p6055: line 55].

⁵⁵¹ Transcript, James Pruss, 11 February 2012, Brisbane [p6055: line 55].

370. However, it is a matter of some concern that, while resources were dedicated to ensuring that the report would be delivered in a timely manner, relatively little support was given to the flood engineers. Their role was, plainly, the most significant part of the report writing. Mr Pruss appears to have recognised this; he explained that he understood that:⁵⁵²

what the engineers were doing was collating the information, producing the report, doing the quality check, doing the data checks on the information and getting it to us in a form that we could then start to put some shape around.

371. Little or no thought seems to have been given to whether the engineers needed assistance with their function. When asked, Mr Pruss said he gave no thought to allocating a person to assist the flood engineers in their task.⁵⁵³ No consideration was given to the risk of self-bias by the engineers in their reporting – the peer reviewers were seen as a sufficient check against this possibility.⁵⁵⁴

372. A greater concern is that Mr Pruss did not make any enquiries about the methodology being used by the engineers in preparing the report. Mr Borrows said that he was not aware that Mr Tibaldi's methodology for preparing the report was to assess the data and work out the strategies to be used in the report by reference to that data.⁵⁵⁵ Mr Pruss said that he did not ask any questions of Mr Tibaldi about how he was going about recording the strategies shown in the report and whether they were by reference to actual recollections or a reconstruction from the data.⁵⁵⁶ It is surprising that the flood event report did not include an explanation of the methodology used in compiling its key sections; it is alarming that methodology was not discussed at all by Seqwater management.

⁵⁵² Transcript, James Pruss, 11 February 2012, Brisbane [p6056: line 23].

⁵⁵³ Transcript, James Pruss, 11 February 2012, Brisbane [p6056: line 29].

⁵⁵⁴ Transcript, James Pruss, 11 February 2012, Brisbane [p6056: line 48].

⁵⁵⁵ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5955: line 54].

⁵⁵⁶ Transcript, James Pruss, 11 February 2012, Brisbane [p6057: line 7].

373. Measures should be put in place to ensure that proper support and oversight mechanisms are put in place around both the substantive and procedural aspects of drafting large flood event reports. Seqwater was right to recognise that the January 2011 flood event report was a different “beast” from any previously tackled; it should have understood that this meant careful thought would need to be given not only as to how the process should be managed, but also as to how the substance of the report was going to be compiled.
374. The Commission may not be well placed to make recommendations about precisely which mechanisms should be put in place; this is principally a matter for Seqwater management. Seqwater should consider engaging consultants with expertise in the production of large reports following significant events. Measures that might be considered for similar future reports might include:
- a. ensuring appropriate systems are in place to ensure the recollections of flood engineers and other parties are recorded immediately after the event, perhaps by engaging an external party to interview the flood engineers and other parties
 - b. ensuring that a methodology for writing the report is set out clearly in advance, in writing, and that the final report includes a statement of that methodology
 - c. putting in place systems to ensure that senior management have sufficient understanding of both the methodology and process by which the report is prepared to allow themselves to be satisfied that these are appropriate.

The peer review process

375. The failings in the peer review process are discussed in Part 9.
376. Mr Borrows did not know whether Seqwater had a formal process for obtaining peer reviews.⁵⁵⁷ All evidence points towards the approach having been ad hoc.
377. Mr Borrows appears to have regarded the peer reviewers as one of the external resources that were made available to assist in drafting the flood event

⁵⁵⁷ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5959: line 43].

report.⁵⁵⁸ This perception is reflective of the way that the peer reviewers were asked to work. For example, some of the peer reviewers attended meetings to discuss the writing of the report.⁵⁵⁹ Mr Pruss said that he saw the meetings as a useful opportunity for the peer reviewers to meet the parties while allowing them to provide challenge to the flood engineers.⁵⁶⁰

378. Involving external experts in the drafting of the report was useful step. However, the value of an independent expert as a peer reviewer is compromised if that expert also participates in the drafting of the document that they are asked to review. This might be an acceptable trade off if there is a shortage of suitable experts or if time or resources are constrained, but it is troubling that in this instance there seems to have been no conscious evaluation of whether this was the right approach.
379. A further matter of concern is that the peer reviewers, in both their advisory and review capacities, were not provided with complete copies of all material that was intended to go into the report. Mr Pruss appeared to accept that he was responsible for this aspect of the process, saying that was responsible for the peer reviewers in an “administration, escalation-type role”, for “logistics and...documentary” matters⁵⁶¹ and for “the administrative side” of providing documents to the peer reviewers.⁵⁶² (He was not, however, personally in control of the documents.⁵⁶³)
380. The failure to provide all relevant documents to the peer reviewers suggests systemic weaknesses. Mr Pruss disagreed with this contention when it was put to him, arguing that in a report in excess of 1300 pages a few missing documents was not an issue of systemic concern.⁵⁶⁴ This may be true on most occasions. However, the fact that documents omitted in this instance include two of the very few that made specific reference to W strategies amply

⁵⁵⁸ Transcript, Peter Borrows, 10 February 2012, Brisbane [p5959: line 39]; [p5953: line 1].

⁵⁵⁹ Exhibit 1085, Meeting invite, organised by Brooke Foxover with attendees, 8 February 2011; Exhibit 1087, Meeting invite, organised by Jim Pruss with attendees, 18 February 2011.

⁵⁶⁰ Transcript, James Pruss, 11 February 2012, Brisbane [p6055: line 7]; [p6055: line 24].

⁵⁶¹ Transcript, James Pruss, 11 February 2012, Brisbane [p6061: line 35].

⁵⁶² Transcript, James Pruss, 11 February 2012, Brisbane [p6062: line 22].

⁵⁶³ Transcript, James Pruss, 11 February 2012, Brisbane [p6063: line 26].

⁵⁶⁴ Transcript, James Pruss, 11 February 2012, Brisbane [p6063: line 51].

demonstrates the potential for a few missing documents to compromise the integrity of the process as a whole.

381. The Commission should recommend that Seqwater consider putting in place a formal procedure for ensuring that, insofar as it is possible, when peer reviews are obtained they are sought from appropriately qualified experts who have no involvement in the drafting of the document to be reviewed, access to all relevant materials, and sufficient time to consider those materials. These potential recommendations are discussed further in Part 9.

States of mind of government officials

Peter Allen

382. Mr Allen is the person who reviews a flood event report when it is submitted to DERM under the Wivenhoe Manual. There is no legal requirement for a review, but Mr Allen considers it part of his duties.⁵⁶⁵
383. Prior to the production of the flood event report from 24 January to 2 March 2011, Mr Allen:
- a. had a personal understanding of the strategies which had been employed during the event – this came from his contact with the flood operations centre
 - b. knew that an account of the strategies used during the flood event had been given to the Minister
 - c. knew that there was, in the Strategy Summary Log, an account of the strategies used during the flood event
 - d. knew that there was, in the Summary of Manual document prepared by Mr Malone, an account given of the strategies used.

Awareness of the methodology for the March flood event report

384. Mr Allen did not see a copy of the draft reports; he first saw the report when it was provided to DERM on 2 March 2011.⁵⁶⁶ He was not involved in drafting

⁵⁶⁵ Transcript, Peter Allen, 10 February 2012, Brisbane [p5904: line 5].

any part of the report. He gave evidence that he might have visited the flood operations centre ‘on the odd occasion’ while Mr Tibaldi was writing the report.⁵⁶⁷

385. When asked whether he was aware that Mr Tibaldi was looking back at the data to work out which strategies had been used, Mr Allen said he ‘expected’ him to do that to write the report, as there was no time to record strategies during the event.⁵⁶⁸ When asked the same question later on in his evidence he responded ‘No, I couldn’t – I couldn’t say that. I don’t believe I was ever told that by Mr Tibaldi.’⁵⁶⁹ Further on again in his testimony, this exchange occurs:

Mr Allen, I just wanted to make a few things - make a few things clear. You were aware, of course, that the March report was going to be relied upon as a record of what actually happened during the flood event?-- Yeah, most certainly. I mean, that's what you would have to rely on.

Are you aware that the suggestion will be made that the net effect of the March report is misleading. For example – I mean, you look askance, but, for example, to the extent it records that W2 was bypassed and W3 was definitively adopted at 8 a.m. on the 8th of January?-- I am aware that there is some controversy over that, yes.

All right. And the suggestion will be made that it reads the way it does and is misleading because of the method adopted in writing it?-- Apparently so.

Right. And the suggestion will be made that you were clearly aware of the method which was being adopted for the writing of the report?-- Yes, yeah.

386. It is likely that Mr Allen had a conversation with Mr Tibaldi about Mr Tibaldi’s dilemma regarding the transition out of W1. Mr Tibaldi said that he must have described, in general terms, that he was trying to work out which strategy had been applicable.⁵⁷⁰ Mr Allen could not recall what was said in this conversation.
387. Mr Allen was aware of the practice of retrospectively putting strategy labels onto an account of a flood event; that is the process that had been followed in

⁵⁶⁶ Transcript, Peter Allen, 10 February 2012, Brisbane [p5919: line 56].

⁵⁶⁷ Transcript, Peter Allen, 10 February 2012, Brisbane [p5920: line 10].

⁵⁶⁸ Transcript, Peter Allen, 10 February 2012, Brisbane [p5921: line 12].

⁵⁶⁹ Transcript, Peter Allen, 10 February 2012, Brisbane [p5923: line 43].

⁵⁷⁰ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5034: line 45 – p5035: line 26].

the past.⁵⁷¹ He said that he had ‘no issue’ with that process because ‘the data is there on record’.⁵⁷² He agreed that the process of the retrospective application of strategy labels meant that the report would be an account of what the primary consideration of the engineer ‘ought to have been’ rather than what it was.⁵⁷³ Mr Allen said that it was inevitable that a report would be that, unless the flood engineers wrote down their primary consideration at the time.⁵⁷⁴

388. The overall effect of this evidence is that Mr Allen was aware, at the time he received the March report, that it was a reconstruction – from data – of the strategies that ought to have been engaged, and not an account of the strategies actually engaged, nor of primary considerations actually held.

Review of the March flood event report

389. The report was delivered to DERM on 2 March 2011. Mr Allen had not, by the time he gave evidence on 10 February 2012, read the report in full, but he had read the bulk of it.⁵⁷⁵ He agreed that soon after seeing the report, he would have been aware that the account of strategies used during the event included a transition from W1 to W3, bypassing W2, at 8.00 am on 8 January 2011.⁵⁷⁶
390. Given his knowledge of how the report was created, Mr Allen must have realised that the March flood event report was misleading to the extent that it purported to be an account of the strategies that were actually put in place.
391. Mr Allen agreed that the way the manual is written requires the adoption of a single strategy at one time.⁵⁷⁷ He agreed that the adoption of the strategy by a flood engineer must be conscious.⁵⁷⁸ Therefore, he must also have been aware of the fact that the report, as constructed, did not establish that the flood engineers had not breached the manual.

⁵⁷¹ Transcript, Peter Allen, 10 February 2012, Brisbane [p5923: line 54; p5928: line 55].

⁵⁷² Transcript, Peter Allen, 10 February 2012, Brisbane [p5924: line 1].

⁵⁷³ Transcript, Peter Allen, 10 February 2012, Brisbane [p5924: line 10].

⁵⁷⁴ Transcript, Peter Allen, 10 February 2012, Brisbane [p5924: line 14].

⁵⁷⁵ Transcript, Peter Allen, 10 February 2012, Brisbane [p5924: line 19].

⁵⁷⁶ Transcript, Peter Allen, 10 February 2012, Brisbane [p5924: line 32].

⁵⁷⁷ Transcript, Peter Allen, 10 February 2012, Brisbane [p5904: line 56].

⁵⁷⁸ Transcript, Peter Allen, 10 February 2012, Brisbane [p5905: line 31].

392. Mr Allen has not completed his review of the flood event report. He said in his statements to the Commission that he expected the review to be finalised by June 2012;⁵⁷⁹ that he had not had sufficient time to devote to a detailed review of the report as a result of his ongoing dealings with this Commission and implementing the recommendations contained in this Commission's interim report.⁵⁸⁰ When it was put to him that the Commission had not required anything of him between 17 May and 1 August 2011, he said that he was doing modelling to try and understand the event.⁵⁸¹ When asked about his time between September and November, he said he had been busy with the Wivenhoe Dam and Somerset Dam Optimisation Study.⁵⁸² He denied the suggestion that he was reluctant to perform the review because he knew the process adopted for its creation was inappropriate.⁵⁸³
393. The failure of Mr Allen to complete the review in a timely manner is unfortunate. It has meant, as he accepted in cross-examination, that any dam safety issues which arise from the review will not be dealt with before the end of the 2011/2012 wet season.⁵⁸⁴

Reconciliation of inconsistent accounts

394. When asked how he reconciled what was in the report with his prior knowledge of the strategies they used as communicated by him to Mr Cooper, Mr Allen said he didn't do a comparison.⁵⁸⁵ He gave evidence that he didn't cross-check the report against the Ministerial briefing note, the Strategy Summary Log or the Summary of Manual document, but considered he would have to when he was making an assessment of them.⁵⁸⁶ He said he would reconcile the differences by going through the documents in detail and

⁵⁷⁹ Exhibit 1099, Statement of Peter Allen, 3 February 2012 [p3: para 12].

⁵⁸⁰ Exhibit 1128, Statement of Peter Allen, 12 September 2012 [p5: para 12(g)].

⁵⁸¹ Transcript, Peter Allen, 10 February 2012, Brisbane [p5928: line 20-34].

⁵⁸² Transcript, Peter Allen, 10 February 2012, Brisbane [p5928: line 36].

⁵⁸³ Transcript, Peter Allen, 10 February 2012, Brisbane [p5928: line 49].

⁵⁸⁴ Transcript, Peter Allen, 10 February 2012, Brisbane [p5928: line 1].

⁵⁸⁵ Transcript, Peter Allen, 10 February 2012, Brisbane [p5924: line 39].

⁵⁸⁶ Transcript, Peter Allen, 10 February 2012, Brisbane [p5927: line 10].

discussing them with others,⁵⁸⁷ and would raise them in his report and to his Director-General now that the issue had been raised with him.⁵⁸⁸

395. Mr Allen's evidence that he did not realise the discrepancies between the March report, the earlier accounts of the strategies used and his own understanding as communicated to Mr Cooper is difficult to accept. He has significant experience with the operation of Wivenhoe Dam and the manual; the January 2011 flood event was the biggest event in the dam's history. It defies logic that after expressing a belief that W2 was used during the event, and seeing three earlier accounts that said the same, he would not have been greatly intrigued by a report which indicated that it was bypassed.

Independence

396. In his evidence in May 2011 and in February 2012, Mr Allen said that he felt he was able to independently review the flood event report.⁵⁸⁹ Against Mr Allen's contention is the evidence that:

- a. he knows all of the flood engineers fairly well;⁵⁹⁰ in fact he considers them all friends or acquaintances⁵⁹¹
- b. he operated the dam with some of them in flood events in the 1990s⁵⁹²
- c. he had personal knowledge of what was occurring during the flood event (see Contemporaneous evidence: Allen's email)
- d. he has acquiesced over many years to the production of flood event reports which retrospectively apply strategy labels to events that occurred
- e. he has done nothing to act upon the inconsistency between the March Report and other accounts of which he is aware.

⁵⁸⁷ Transcript, Peter Allen, 10 February 2012, Brisbane [p5927: line 18].

⁵⁸⁸ Transcript, Peter Allen, 10 February 2012, Brisbane [p5927: line 28-38].

⁵⁸⁹ Transcript, Peter Allen, 16 May 2011, Brisbane [p2090: line 11].

⁵⁹⁰ Transcript, Peter Allen, 17 May 2011, Brisbane [p2131: line 37].

⁵⁹¹ Transcript, Peter Allen, 10 February 2012, Brisbane [p5929: line 33].

⁵⁹² Transcript, Peter Allen, 10 February 2012, Brisbane [p5905: line 54].

397. Mr Allen's assertion that he can remain independent is unacceptable. He should have nothing to do with the review of this, or any other flood event report produced by the engineers who were involved in the production of the March report. Mr Allen states that DERM had engaged an independent engineer, from engineering company SMEC, to participate in and observe the review and if needed, provide an independent assessment.⁵⁹³ That person, or any other independent and appropriately qualified person, could start this task immediately to ensure it is completed before the 2012/2013 wet season.

Other individuals

The Premier, the Minister and Directors-General

398. The Premier, the Honourable Anna Bligh MP, has provided a statement in response to a requirement of the Commission.⁵⁹⁴ She has attached to that statement more than 300 pages of contemporaneous documents. Nothing in those documents, or any of the other evidence before the Commission, suggests that the Premier knew about the discrepancies between the accounts given by the flood engineers.
399. As noted above, Mr Robertson received the briefing note. His evidence was that he received and read the March report.⁵⁹⁵ He did not notice the differences between the March report and the ministerial briefing note.⁵⁹⁶ That evidence should be accepted.
400. As also noted above, Mr Smith did not recall having received the briefing note.⁵⁹⁷ Mr Smith did not believe he knew at the time that the manual referred to operational strategies W1 to W4.⁵⁹⁸ His evidence was that he did not read the March report in great detail and would not have paid any attention to when the strategies were said to be triggered in that report.⁵⁹⁹

⁵⁹³ Exhibit 1128, Statement of Peter Allen, 12 September 2012 [p5: para 12(d)].

⁵⁹⁴ Exhibit 1150, Statement of Anna Bligh, 6 February 2012.

⁵⁹⁵ Transcript, Stephen Robertson, 9 February 2012, Brisbane [p5791: line 20].

⁵⁹⁶ Transcript, Stephen Robertson, 9 February 2012, Brisbane [p5791: line 29].

⁵⁹⁷ Transcript, Ken Smith, 10 February 2012, Brisbane [p5463: line 16].

⁵⁹⁸ Transcript, Ken Smith, 10 February 2012, Brisbane [p5449: line 43].

⁵⁹⁹ Transcript, Ken Smith, 10 February 2012, Brisbane [p5461: line 24].

401. The Commission has obtained statements from four people who filled the role of Director-General of DERM. As noted above, Mr Bradley, while in the position of Director-General of DERM, was involved in the preparation of the Minister's briefing note.⁶⁰⁰ James Reeves is the current Director-General.⁶⁰¹ Terry Wall acted as Director-General for one day from 10 January 2011 to 11 January 2011.⁶⁰² Ms Best acted as Director-General during the January 2011 floods until Mr Wall took over on 10 January 2011.⁶⁰³ None of these four was aware of discrepancies in the accounts of when different strategies were engaged until the reporting in *The Australian* on 23 January 2012.⁶⁰⁴
402. Ms Bligh, Mr Robertson, Mr Smith, Mr Bradley, Mr Reeves, Mr Wall and Ms Best were not in positions that would necessitate a sophisticated level of knowledge of the manual, such that it could be expected that discrepancies between the flood engineers' accounts would be apparent to them. They were necessarily dependent upon receiving accurate information from others.
403. Seqwater did not have in place a system that would bring to the attention of people in positions with supervisory responsibility the emergence of significant discrepancies between the initial and subsequent accounts of the flood engineers as to which manual strategies they were operating under. There are potentially far-reaching consequences for the State of a failure to comply with the manual. Seqwater should have had in place adequate systems for monitoring compliance with the manual and alerting those with responsibility to the possibility of non-compliance.

SEQ Water Grid Manager

404. Mr Dennien said that he "skimmed" the table of event decision making in the Seqwater section of the briefing note but did not read it in any detail.⁶⁰⁵ His evidence on 8 February 2012 was that he had only read the March report "a

⁶⁰⁰ Exhibit 390, Statement of John Bradley, 4 April 2011, Annexure JNB-30; Exhibit 1150, Statement of John Bradley, 1 February 2012 [p4: para 21].

⁶⁰¹ Exhibit 1150, Statement of James Reeves, 1 February 2012 [p1: para 2].

⁶⁰² Exhibit 1150, Statement of Terry Wall, 2 February 2012 [p1: para 2-3].

⁶⁰³ Exhibit 1150, Statement of Debbie Best, 1 February 2012 [p2: para 9].

⁶⁰⁴ Exhibit 1150, Statement of Debbie Best, 1 February 2012 [p4: para 23]; Exhibit 1150, Statement of Terry Wall, 2 February 2012 [p2: para 9-10]; Exhibit 1150, Statement of John Bradley, 1 February 2012 [p3: para 15-16]; Exhibit 1150, Statement of James Reeves, 1 February 2012 [p2: para 8-10].

⁶⁰⁵ Transcript, Barry Dennien, 8 February 2012, Brisbane [p5671: line 40-50].

couple of weeks ago”.⁶⁰⁶ He had read the Commission’s interim report but did not look in detail at the sequence of events in relation to strategy adoption set out in that report.⁶⁰⁷

405. Mr Spiller said that he was confident that he would have read the entire briefing note.⁶⁰⁸ He did not notice the discrepancy between the strategy changes recorded in the briefing note and his understanding at the time as to which strategies were in operation.⁶⁰⁹ His evidence was that he “had a very cursory view of the March report”.⁶¹⁰ He could not specifically recall having read the part of the March report that recorded a change to W3 at 8.00 am on 8 January 2011.⁶¹¹ His evidence seemed to suggest that he had noticed some inconsistency between the findings in the Commission’s interim report and his understanding as to strategy changes.⁶¹² However, he had attributed this inconsistency to his lack of specific knowledge and the ambiguity as to events noted in the interim report.⁶¹³
406. It is unfortunate that Mr Dennien and Mr Spiller did not identify and report to anyone the discrepancy between the information they received from Seqwater as to strategy and the strategy decisions ultimately reported by Seqwater. However, their role is not to supervise Seqwater. No criticism is made of them for failing to vet more carefully the relevant reports and bring the inconsistencies to the attention of others.

⁶⁰⁶ Transcript, Barry Dennien, 8 February 2012, Brisbane [p5672: line 10].

⁶⁰⁷ Transcript, Barry Dennien, 8 February 2012, Brisbane [p5672: line 32].

⁶⁰⁸ Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5630: line 32].

⁶⁰⁹ Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5632: line 28].

⁶¹⁰ Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5631: line 38].

⁶¹¹ Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5635: line 20].

⁶¹² Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5637: line 28].

⁶¹³ Transcript, Daniel Spiller, 8 February 2012, Brisbane [p5637: line 48].

7 Peer reviews of the March report

407. Term of reference paragraph 2(f) encompassed ‘an assessment of compliance [of the operation of Wivenhoe Dam] with the operational procedures relating to flood mitigation and dam safety’.
408. In its first submission to the Commission, Seqwater asserted that it had managed the flood event in accordance with the Wivenhoe manual.⁶¹⁴ In particular, Seqwater represented that:
- a. in releasing water from the dam, Seqwater had ‘acted carefully and in compliance with the terms of the approved flood mitigation manuals which outline the operational procedures to be followed during flood events’⁶¹⁵
 - b. the contents of the March report, on which Seqwater relied for the purposes of the submission, showed that ‘operational decisions were carefully considered and made in accordance with the manual’.⁶¹⁶ The submission referred explicitly to section 2 and section 10 of the March report.
409. In the submission, Seqwater informed the Commission that it had commissioned independent peer reviews of the operational decisions made during the flood event⁶¹⁷ and provided reports prepared by Emeritus Professor Colin Apelt, Mr Greg Roads and Mr Leonard McDonald.⁶¹⁸ Seqwater provided a report by Mr Brian Shannon with a supplementary submission to the Commission on 4 April 2011.⁶¹⁹
410. The reports of the peer reviewers addressed the question of compliance with the Wivenhoe manual. The reviews were based on the information contained in the March report.
411. The peer reviewers’ reports addressed two questions:
- a. Was the release of water from Wivenhoe Dam and Somerset Dam during the January 2011 Flood Event in accordance with the Wivenhoe manual?

⁶¹⁴ Opening submission by Queensland Bulk Water Supply Authority trading as Seqwater [para 28].

⁶¹⁵ Opening submission by Queensland Bulk Water Supply Authority trading as Seqwater [para 34].

⁶¹⁶ Opening submission by Queensland Bulk Water Supply Authority trading as Seqwater [para 187].

⁶¹⁷ Opening submission by Queensland Bulk Water Supply Authority trading as Seqwater [para 188].

⁶¹⁸ Opening submission by Queensland Bulk Water Supply Authority trading as Seqwater, Attachment 29.

⁶¹⁹ Supplementary submission by Seqwater, Attachment 27.

- b. Based on the information contained in the March report, were there any aspects relating to the operation of Wivenhoe Dam and the operation of Somerset Dam during the January 2011 Flood Event not in accordance with the manual?
412. When more is understood about the way the report was written, and the nature of the information omitted from it, the qualification that the opinion be ‘based on the information contained’ in that report assumes some significance.
413. Seqwater’s supplementary submission discussed the conclusions of the peer reviewers.⁶²⁰ The submission noted that:
- a. Professor Apelt concluded that the release of water from Wivenhoe and Somerset dams was in accordance with the Wivenhoe manual.⁶²¹
 - b. Mr McDonald concluded that the release of water from Wivenhoe and Somerset dams was in accordance with the Wivenhoe manual with one possible exception, which related to the decision to bypass strategy W2.⁶²²
 - c. Mr Roads concluded that the Wivenhoe and Somerset dams were operated in accordance with the Wivenhoe manual but identified two possible minor deviations from the manual, which, Mr Roads said, ‘may [have been] due to a lack of clarity in the manual rather than non-compliance’.⁶²³
 - d. Mr Shannon concluded that ‘Overall, the manual was followed closely during the whole flood event’.⁶²⁴
414. Seqwater, in the supplementary submission, sought to refute each of the suggestions of non-compliance.
415. The Commission asked Mr Babister to review Seqwater’s March report and the reports of the peer reviewers other than Mr Shannon’s report and to answer the following question: Were the releases from the Somerset and Wivenhoe dams in accordance with the flood manual?⁶²⁵ In answering that question, Mr

⁶²⁰ Supplementary submission by Seqwater [p43-45: para 175-193].

⁶²¹ Supplementary submission by Seqwater, Attachment 24; Exhibit 410, Review of Seqwater Document ‘January 2011 Flood Event’ by Colin Apelt, 9 March 2011.

⁶²² Supplementary submission by Seqwater, Attachment 25; Exhibit 412, Report of Leonard McDonald, ‘Flood event of January 2011 – Wivenhoe Dam water releases – compliance with manual’, 10 March 2011.

⁶²³ Supplementary submission by Seqwater, Attachment 26; Exhibit 413, Report of Greg Roads, ‘Review of the operation of Wivenhoe and Somerset Dams during the Jan 2011 Flood Event’, 9 March 2011.

⁶²⁴ Supplementary submission by Seqwater, Attachment 27; Exhibit 411, Report of Brian Shannon, ‘Review of Dam Operations Brisbane River Floods – January 2011’.

⁶²⁵ Exhibit 407, WMA Water, Report to the Queensland Flood Commission of Inquiry, Final Report, May 2011 [p1].

Babister relied upon the three independent reports he had reviewed. His response to the question was:

Three independent reviews found that the dam releases were in accordance with The Manual. Minor deviations were observed that were attributed to ambiguity within The Manual.⁶²⁶

416. Mr Babister referred to the ‘consensus finding of the three assessments of compliance’. Each of the ‘possible non-compliance issues’, he noted, ‘were attributed to ambiguity or inconsistency within The Manual’.⁶²⁷ Mr Babister did not depart from, or take issue with, the opinions expressed in the three reports he had reviewed.
417. On this basis, the Commission accepted the opinions of the four peer reviewers. Their reports were tendered into evidence. The Commission thought it sensible at that time not to focus resources on investigating further the question of compliance beyond the points dealt with in the interim report.
418. In this third hearing, however, the Commission had cause to examine the process by which the peer reviewers had formed their opinions. That examination has found a number of flaws in the review process.
419. The reviews were completed in a short period of time. Professor Apelt, Mr Roads and Mr Shannon had about a month to do their reviews. They did the bulk of their work on draft versions of the March report.⁶²⁸ Mr Shannon submitted his report on the same day the March report was published. Mr McDonald only received a copy of the final report on 4 March 2011. He submitted his report on 10 March 2011.
420. As a result of the short timeframes, the peer reviewers focussed on particular sections of the report:

⁶²⁶ Exhibit 407, WMA Water, Report to the Queensland Flood Commission of Inquiry, Final Report, May 2011 [p48: para 167].

⁶²⁷ Exhibit 407, WMA Water, Report to the Queensland Flood Commission of Inquiry, Final Report, May 2011 [p24: para 88].

⁶²⁸ Transcript, Greg Roads, 9 February 2012, Brisbane [p5764: line 35]; Transcript, Colin Apelt, 8 February 2012, Brisbane [p5722: line 14, 35]; Transcript, Brian Shannon, 9 February 2012, Brisbane [p5816: line 57 – p5817: line 8].

- a. Mr Roads had particular reference to sections 2, 9 and 10 and also to the modelling results in Appendix A.⁶²⁹
 - b. Professor Apelt gave particular attention to the executive summary and sections 2, 9, 10 and 19.⁶³⁰
 - c. Mr McDonald read and studied the executive summary and sections 1 to 5, 9, 10 and 11.⁶³¹
 - d. Mr Shannon based his ‘assessments on the summary reports’.⁶³² He did not look at the appendices in any detail.⁶³³
421. Mr Roads indicated that Mr Tibaldi had said in a teleconference on 9 February 2011 that it would not be possible to review the entire report in the time available and that he should review sections 9 and 10 of the draft report.⁶³⁴
422. Each of the peer reviewers had accepted there was a transition to strategy W3 at 8.00 am on 8 January 2011.⁶³⁵ That information was contained in sections 2 and 10 of the March report. Mr McDonald said that he assumed the statements in the March report – section 2 in particular – were accurate and matched the content in the appendices.⁶³⁶ He did not undertake any comparison of the information in the body of the report with the source material in the appendices.⁶³⁷
423. The methodology by which Mr Tibaldi prepared the Seqwater report – and concluded that the transition to W3 occurred at 8.00 am on 8 January 2011 –

⁶²⁹ Exhibit 413, Report of Greg Roads, ‘Review of the operation of Wivenhoe and Somerset Dams during the Jan 2011 Flood Event’, 9 March 2011 [p2]; Transcript, Greg Roads, 9 February 2012, Brisbane [p5761: line 1; p5762: line 8; p5767: line 37-p5768: line 8].

⁶³⁰ Transcript, Colin Apelt, 8 February 2012, Brisbane [p5727: line 12]; Exhibit 410, Review of Seqwater Document ‘January 2011 Flood Event’ by Colin Apelt, 9 March 2011 [p3].

⁶³¹ Exhibit 412, Report of Leonard McDonald, ‘Flood event of January 2011 – Wivenhoe Dam water releases – compliance with manual’, 10 March 2011 [p2]. See also Transcript, Leonard McDonald, 7 February 2012, Brisbane [p5562: line 8-18; p5571: line 12].

⁶³² Transcript, Brian Shannon, 9 February 2012, Brisbane [p5823: line 22].

⁶³³ Transcript, Brian Shannon, 9 February 2012, Brisbane [p5817: line 19-28; p5822: line 4].

⁶³⁴ Transcript, Greg Roads, 8 February 2012, Brisbane [p5753: line 53; p5754: line 28; p5755: line 25]; Exhibit 1110, Greg Roads – teleconference notes, 9 February 2011.

⁶³⁵ Transcript, Leonard McDonald, 7 February 2012, Brisbane [p5560: line 5]; Transcript, Colin Apelt, 8 February 2012, Brisbane [p5727: line 57 – p5728: line 10]. Transcript, Brian Shannon, 9 February 2012, Brisbane [p5819: line 34]. Mr Roads said he accepted ‘that as the water level fell over the line [the flood operations engineers] were automatically in W3, whether they liked it or not’ (Transcript, Greg Roads, 9 February 2012, Brisbane [p5768: line 43]). In his report, Table 3.1 sets out ‘the date and time when Seqwater transitioned into each strategy’. It shows that strategy W3 was engaged at 8.00 am on 8 January 2011 (Exhibit 413, Report of Greg Roads, ‘Review of the operation of Wivenhoe and Somerset Dams during the Jan 2011 Flood Event’, 9 March 2011 [p2-3]).

⁶³⁶ Transcript, Leonard McDonald, 7 February 2012, Brisbane [p5560: line 5; p5562: line 9; p5568: line 51]; Exhibit 412, Report of Leonard McDonald, ‘Flood event of January 2011 – Wivenhoe Dam water releases – compliance with manual’, 10 March 2011 [p2].

⁶³⁷ Transcript, Leonard McDonald, 7 February 2012, Brisbane [p5560: line 22-48].

was not explained to the peer reviewers.⁶³⁸ They ought to have been made aware of it. Mr Tibaldi's methodology ensured that the relevant sections of the report (on which the reviewers focussed) showed that strategies were adopted in accordance with the Wivenhoe manual. (The possible issues of non-compliance that Mr Roads and Mr McDonald identified resulted from particular interpretations of the manual.) So the question of compliance with which the Commission is now concerned simply was not considered by the peer reviewers.

424. Had Mr McDonald been aware of the process by which Mr Tibaldi determined when W3 was engaged, it might have made a difference to his approach to his review.⁶³⁹
425. The peer reviewers were not given the situation report sent on 8 January 2011 at 5.53 pm – it was omitted from the March report. Professor Apelt and Mr Roads received draft versions of the report which did not contain the flood event log entry on 9 January 2011 at 3.30 pm; the entry does appear in Appendix M of the March report. It is not known whether the draft Mr Shannon received also omitted the log entry – he disposed of the draft when he received the final report. It is likely, though, that Mr Shannon received the same draft material as Professor Apelt and Mr Roads. In any event, Mr Shannon had not seen the entry before it was shown to him when he gave his evidence. The omissions of such important documents, although curious, may have been the result of inadvertence. Even so, it reveals a deficiency in the process by which Seqwater briefed the experts.
426. The final report was released on 2 March 2011. Seqwater did not bring to the attention of the experts any differences between the drafts and the final report, such as the inclusion of the log entry on 9 January 2011.⁶⁴⁰
427. Mr Shannon and Mr Roads said, however, they did not have any regard to the flood event log in Appendix M, or to the situation reports in Appendix E.⁶⁴¹

⁶³⁸ Transcript, Greg Roads, 9 February 2012, Brisbane [p5761: line 12]; Transcript, Leonard McDonald, 7 February 2012, Brisbane [p5562: line 34]; Transcript, Colin Apelt, 8 February 2012, Brisbane [p5732: line 3].

⁶³⁹ Transcript, Leonard McDonald, 7 February 2012, Brisbane [p5563: line 1-13].

⁶⁴⁰ Transcript, Brian Shannon, 9 February 2012, Brisbane [p5817: line 12].

Mr Roads focussed on the modelling in Appendix A. Mr Shannon assumed that the information in the appendices was reflected in the body of the report.⁶⁴² Professor Apelt did refer to the situation reports and flood event log, but focussed mainly on the model results.⁶⁴³

428. It is apparent that Professor Apelt had some regard to the flood event log in the draft on which he worked: he wrote in by hand dates in the log for 8 and 9 January 2011 because those dates were missing. He drew that issue to Mr Tibaldi's attention.⁶⁴⁴ That particular problem was rectified in a second draft given to Mr Roads and Professor Apelt on or about 24 February 2011. (Mr Shannon said he only received one draft report. It is not known which version he received.) The omission of the 3.30 pm log entry, however, was not rectified in the second draft report.
429. Mr McDonald only received a copy of the final report (on 4 March 2011), but, because of the limited time he had to complete his review (by 10 March 2011), he did not closely examine the appendices. He did not notice the 3.30 pm entry in the flood event log in Appendix M.
430. Each of the peer reviewers considered the information contained in either or both of the situation report and the flood event log entry as relevant. Had they seen one or both of the documents when undertaking their reviews, the apparent inconsistency with the proposition that the dam was operated in strategy W3 from 8.00 am on 8 January 2011 would have caused them to ask questions of Seqwater.⁶⁴⁵
431. Those concessions mean that some qualifications now apply to the peer reviewers' opinions as to compliance.

⁶⁴¹ Transcript, Greg Roads, 9 February 2012, Brisbane [p5767: line 37-p5768: line 8; p5772: line 43, line 55]; Transcript, Brian Shannon, 9 February 2012, Brisbane [p5819: line 45; p5823: line 16].

⁶⁴² Transcript, Brian Shannon, 9 February 2012, Brisbane [p5823: line 20].

⁶⁴³ Transcript, Colin Apelt, 8 February 2012, Brisbane [p5721: line 40 – p5722: line 5].

⁶⁴⁴ Transcript, Colin Apelt, 8 February 2012, Brisbane [p5730: line 25].

⁶⁴⁵ Transcript, Leonard McDonald, 7 February 2012, Brisbane [p5561: line 51-55; p5562: line 19-31]; Transcript, Colin Apelt, 8 February 2012, Brisbane [p5729: line 27-41; p5731: line 36-56]; Transcript, Greg Roads, 9 February 2012, Brisbane [p5771: line 50-57]; Transcript, Brian Shannon, 9 February 2012, Brisbane [p5824: line 1-13].

432. It should be acknowledged, though, that each of the peer reviewers has maintained his view that the releases made from the dam were appropriate. That is not to the point now under consideration. The releases,⁶⁴⁶ even if appropriate, do not of themselves determine the strategy under which the dam was being operated. They certainly do not confirm whether a transition was made to W3 at 8.00 am on 8 January 2011.
433. There are some other unsatisfactory – and concerning – aspects of the peer review process. In some instances, there appears to have been no clear division between the preparation of the report and the review of it. Two of the peer reviewers attended meetings about the production of the report. Professor Apelt attended the first meeting that was held about the preparation of the report (on 3 February 2011).⁶⁴⁷ Issues relating to the content of the report were certainly discussed at a second meeting he attended (on 8 February 2011).⁶⁴⁸ A note Mr Ayre took at that meeting indicates that there was some discussion about the flood event summary in section 2 of the report, and the need to show that the flood engineers had satisfied the Wivenhoe manual.⁶⁴⁹
434. Mr Shannon attended a meeting about the report on 18 February 2011, at which he raised an issue about the exercise of discretion and compliance with the manual.⁶⁵⁰ A note of the meeting indicates that Mr Shannon made a suggestion to the effect of ‘if you did step outside [the] manual, show you did what was necessary’.⁶⁵¹ Mr Pruss – who had responsibility for preparation of the report and the peer review process – said he was ‘comfortable’ that Mr Shannon was ‘challenging’ the flood engineers in this way.⁶⁵² Mr Pruss failed to recognise the problems associated with the merging of the process of

⁶⁴⁶ Other than those associated with W4.

⁶⁴⁷ Exhibit 1084, Meeting invite, organised by Jim Pruss, with attendees, and agenda attached – Technical Report Discussion, 3 February 2011; Transcript, Colin Apelt, 8 February 2012, Brisbane [p5716: line 11-42]; Transcript, James Pruss, 11 February 2012, Brisbane [p6053: line 1-43]; Transcript, Robert Ayre, 11 February 2012, Brisbane [p6113: line 20].

⁶⁴⁸ Exhibit 1085, Meeting invite, organised by Brooke Foxover with attendees, and agenda attached – Technical Report Discussion, 8 February 2011; Transcript, Colin Apelt, 8 February 2012, Brisbane [p5719: line 17-34]; Transcript James Pruss, 11 February 2012, Brisbane [p6054: line 25-55]. See also Transcript, Robert Ayre, 11 February 2012, Brisbane [p6113: line 34].

⁶⁴⁹ Exhibit 1147, Handwritten notes of Robert Ayre, provided to QFCI in a letter dated 9 February 2012; Transcript, Robert Ayre, 11 February 2012, Brisbane [p6110: line 48].

⁶⁵⁰ Transcript, Brian Shannon, 9 February 2012, Brisbane [p5825: line 55 – p5826: line 56].

⁶⁵¹ Exhibit 1088, Email from Chloe Cross to John Tibaldi with 18 Feb Meeting notes attached, 21 February 2011, 8:26 am; Transcript, Brian Shannon, 9 February 2012, Brisbane [p5826: line 55].

⁶⁵² Transcript, James Pruss, 11 February 2012, Brisbane [p6055: line 3-33].

production of the report and the process of reviewing it; the possibility that Mr Shannon may have been contributing – even if only indirectly – to a report he was engaged to review.

435. There was a difference in the evidence of Professor Apelt and Mr Pruss as to the scope of Professor Apelt's role. Both were asked to comment on an email Mr Pruss's assistant had sent Professor Apelt (on 7 February 2011) thanking him for his availability to 'assist Seqwater with the report and submission for the Commission of [Inquiry]'. Professor Apelt denied that he had given that assistance to Seqwater; he said 'it would be quite ridiculous for me to help construct [the report] and then review it'.⁶⁵³ Mr Pruss, on the other hand, said the email was consistent with his general understanding of Professor Apelt's engagement.⁶⁵⁴ There was, at the least, an unfortunate lack of clarity as to Professor Apelt's role (and, it seems, also that of Mr Shannon).
436. Independence is essential to a credible review process. There is insufficient evidence to conclude that, in this case, the review process lacked independence – but enough to raise questions about it. The email Mr Roads sent to Mr Malone (and the other flood engineers) on 17 January 2011, before he was engaged by Seqwater, in particular, is noted.⁶⁵⁵ In that email, Mr Roads expressed a view that the flood engineers had done 'a great job'. He also said in the email:
- 'I advised Barton yesterday that you guys will need to get on the front foot with [Hedley Thomas]. It shouldn't be me!'
437. It is not suggested that the email indicates Mr Roads was unable to, and did not, apply his mind objectively to the review he undertook. Such comments, however, have the capacity to cast doubt on the independence of the review process; as well as on the wisdom of Seqwater's engaging someone who had made such comments publicly to perform an independent review.

⁶⁵³ Transcript, Colin Apelt, 8 February 2012, Brisbane [p5717: line 39-50]. In his reply to the email, Professor Apelt did not respond to the point.

⁶⁵⁴ Transcript, James Pruss, 11 February 2012, Brisbane [p6055: line 50].

⁶⁵⁵ Exhibit 1071, Email from Greg Roads to Terry Malone, 17 January 2011, 9:11 am; Transcript, Greg Roads, 9 February 2011, Brisbane [p5773: line 50 – p5774: line 29].

438. Seqwater engaged peer reviewers as part of its approach to dealing with the Commission.⁶⁵⁶ The process formed part of Seqwater's presentation of information to the Commission, undoubtedly with the intention of satisfying the Commission that Wivenhoe Dam was operated in accordance with the Wivenhoe manual. That process was flawed in a way that should not be repeated. It lacked professionalism and rigour. Very little was done to ensure the review process was independent.
439. Any such process in the future should:
- a. be co-ordinated by someone independent of those who wrote the report
 - b. involve strict information management techniques
 - c. ensure sufficient time and resources are allowed for a thorough and meaningful review
 - d. document all contact between those whose actions are under review and the reviewers.

⁶⁵⁶ Exhibit 1131, Email chain, Peter Borrows to various, 18 January 2011, 9:05 am; Transcript, Peter Borrows, 10 February 2012, Brisbane [p5960: line 18 – p5961: line 17].

8 Mr Cooper's report

440. Mr Murdoch SC asked each of the flood engineers about his awareness of Mr Cooper's report. Each had received it and read it.
441. Mr Ruffini said he received a copy of Mr Cooper's report but he could not recall when he received it or any of its details (except that 'the focus was on the top end, the W4 issues'). He did not have any recollection of his disagreeing with Mr Cooper's report.⁶⁵⁷
442. Mr Malone said he read Mr Cooper's report during the flood event. He did not recall details of the report but did recall 'there were some questions' about the content of the report as to 'the application of strategies'. Nothing caused him to raise any concerns about the report; he saw 'nothing' in the report that was 'untoward' or that 'stood out' as requiring his attention. He did, however, discuss the report with Mr Tibaldi when he read it and pointed out that it seemed Mr Cooper had not interpreted the manual correctly. He said that when the report 'came in' he and Mr Tibaldi 'looked at it'.⁶⁵⁸ He thought Mr Tibaldi had taken the 'lead role' in raising issues with Mr Cooper's report; any errors, he said, were corrected by the writing of the March report.
- a. Mr Tibaldi said he received Mr Cooper's report in February 2011, when he was writing the flood event report. He read it when it was provided to him. He recalled that he did not agree with Mr Cooper's 'use of strategies' – he thought the report was incorrect in that respect – but he did not do anything to correct it, as he was in the process of writing his own report.⁶⁵⁹
- b. Mr Ayre said he saw Mr Cooper's report about a week or two after Mr Cooper delivered it (on 12 January 2011), 'when we were producing the report'. When he read it, he said, he 'recognised' that some of Mr Cooper's descriptions of the use of strategies 'perhaps' were not as he

⁶⁵⁷ Transcript, John Ruffini, 11 February 2012, Brisbane [p6075: line 45 – p6077: line 11].

⁶⁵⁸ Transcript, Terry Malone, 11 February 2012, Brisbane [p6095: line 5 – p 6096: line 35].

⁶⁵⁹ Transcript, John Tibaldi, 11 February 2012, Brisbane [p6127: line 53 – p6128: line 37].

‘recollected the event’.⁶⁶⁰ He did not express that view, however, because he considered it would be addressed in the flood event report.⁶⁶¹

- c. The significance of Mr Cooper’s report is that it contains the following statement:

‘...for the last day or so before yesterday’s big rise, Strategy W2 would be in place...’

- d. Mr Cooper’s report is also significant because it formed part of the briefing given to the Minister on 16 January 2011. Specifically, nobody involved in the preparation of the briefing had any issue with giving Mr Cooper’s report to the Minister; quite the opposite.
- e. As already noted, a teleconference about the briefing to the Minister occurred at 2.00 pm on 15 January 2011, in which Mr Ayre, Mr Tibaldi, Mr Drury, Mr Allen, Mr Borrows and Mr Reilly participated.
- f. Mr Cooper’s report may have been discussed at this early stage. There is a reference to Mr Cooper in ‘discussion points’ for the 2.00 pm teleconference, which Mr Spiller sent to the Duty Engineer email address on 15 January 2011 at 2.21 pm.⁶⁶² The reference is ‘Get more comprehensive report from Brian Cooper?’.
- g. Mr Malone was the duty engineer at the time. At 1.31 pm that day, Mr Allen sent Mr Cooper’s report to Duty Engineer email address.⁶⁶³ The email was addressed to ‘Terry’. It said, ‘Terry... This should be what you want’, indicating that the email followed some discussion about Mr Cooper’s report. The email was forwarded from the Duty Engineer account to Mr Malone’s email address 10 minutes later.⁶⁶⁴

⁶⁶⁰ He also said, ‘in terms of the peak release on the Tuesday I think that was reasonable...’

⁶⁶¹ Transcript, Robert Ayre, 11 February 2012, Brisbane [p6112: line 41 – p6113: line 15].

⁶⁶² Exhibit 1061, Email, Dan Spiller to Duty Engineer, 2.21 pm, 15 January 2011.

⁶⁶³ Email, Peter Allen to Duty Engineer, 1.31 pm, 15 January 2011.

⁶⁶⁴ Email, Duty Engineer to Terry Malone, 1.41 pm, 15 January 2011.

- h. That course of events is consistent with Mr Malone's oral evidence on the topic. The inference is open that Mr Malone read Mr Cooper's report at that time – and discussed it with Mr Tibaldi, who also read it at this time. Mr Tibaldi has no memory of this period.⁶⁶⁵
- i. At 5.07 pm on 15 January 2011, Mr Drury sent an outline of the 'ministerial brief' to the Duty Engineer email address.⁶⁶⁶ The outline indicated that the brief would contain a section about Mr Cooper's 'Flood Mitigation Manual compliance review', for which SEQ Water Grid Manager was assigned responsibility. The outline also indicated that the section on Seqwater's report to the chief executive would or should 'Reflect Brian Cooper's compliance review'.
- j. At 2.03 am on 17 January 2011, Mr Borrows sent Mr Drury, Mr Pruss and the Duty Engineer email address copies of the final ministerial brief, the final draft of the Seqwater briefing note for distribution, the Seqwater flood event report and Mr Cooper's report (and other documents).⁶⁶⁷ The email was addressed to 'Jim, John & Rob' – presumably 'John' was Mr Tibaldi.
- k. The evidence establishes that all four flood engineers were aware of the content of Mr Cooper's report. Mr Malone and Mr Tibaldi had read it when the Ministerial briefing note was being prepared; Mr Ayre and Mr Ruffini probably saw it then too, but at least read it by the time they reviewed the March flood event report. It is unsurprising that they did not quibble with Mr Cooper's report at the time they were preparing the Ministerial briefing note – both reports are broadly consistent in that they include the use of W2. Their failure to object to Mr Cooper's account of events at that time adds further weight to the evidence outlined in part 5 that, as at 15 to 17 January, all four flood engineers thought that they had used strategy W2.

⁶⁶⁵ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5064: line 17; p5066: line 40].

⁶⁶⁶ Exhibit 1062, Email, Rob Drury to Duty Engineer, 5:07 pm, 15 January 2011.

⁶⁶⁷ Exhibit 393, Statement of Peter Borrows, 1 April 2011, Attachment PB-12 (Email, Peter Borrows to Rob Drury, Jim Pruss and Duty Engineer, 2.03 am, 17 January 2011).

1. It is surprising, however, that none of the flood engineers chose to correct the record, if, as they claim, the accurate version of events is that contained in the March flood event report. They were aware that at least the Minister, Seqwater's management and officers of the SEQ Water Grid Manager and DERM had the report and might rely on it. Active steps should have been taken by them to correct the impression given by Mr Cooper's report, if it was wrong.

9 Implications for the Wivenhoe manual

443. The evidence heard in the Commission's third set of hearings has some implications for the longer term review of the Wivenhoe manual.
444. First, there is some confusion as between the flood engineers as to when and how strategy W2 should be implemented and as to how the choice between strategy W2 and W3 should be made.⁶⁶⁸ Particularly, some, if not all of the flood engineers, did not appreciate at the time of the January 2011 flood that W2 was not a transition strategy between W1 and W3.⁶⁶⁹ If strategies of the form of W2 or W3 are chosen as part of the longer term review of the Wivenhoe manual, their criteria and conditions should be written so as to avoid these problems in the future.
445. Second, the term 'inundation of urban areas' poses some difficulty. Mr Malone accepted that the term could refer to wide range of circumstances.⁶⁷⁰ He said that he relied on the manual which prescribed the limit of urban damage to be a flow in the Brisbane River of 4 000 m³/s.⁶⁷¹ Mr Tibaldi said that some urban damage occurs with flows as low at 1 600 or 1 900 m³/s, including the inundation of bike paths and inundation of low lying houses.⁶⁷² Mr Ayre described the impact of a flow of 1 600 m³/s in the Brisbane River on tide heights as a consideration relevant to the protection of urban areas.⁶⁷³ What exactly constitutes urban inundation must be defined with precision given its importance in the manual; the protection of urban areas from inundation is the second-highest flood mitigation objective and is required to be the primary consideration in the mind of the flood engineer operating the

⁶⁶⁸ See for example Transcript, John Tibaldi, 2 February 2012, Brisbane [p5055: line 10-55]; Transcript, John Ruffini, 11 February 2012, Brisbane [p6073: line30]; [p6074: line 1 - p6075: line 35]; Transcript, Terrence Malone, 11 February 2012, Brisbane [p6094: line 35-55]; Transcript, Rob Ayre, 11 February 2012, Brisbane [p6105: line 21 – p6106: line 5].

⁶⁶⁹ See, for example, Mr Tibaldi's difficulty in determining whether the flood engineers had used strategy W2. See also Transcript, John Ruffini, 11 February 2012, Brisbane [p6074: line 1 – p6075: line 35]; Transcript, Rob Ayre, 11 February 2012, Brisbane [p6111: line 25 – p6112: line 32]; Transcript, John Tibaldi, 11 February 2012, Brisbane [p6126: line 45 – p6127: line 40].

⁶⁷⁰ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5316: line 38 – p5317: line 30].

⁶⁷¹ Transcript, Terrence Malone, 5 February 2012, Brisbane [p5316: line 38 – p5317: line 30].

⁶⁷² Transcript, John Tibaldi, 2 February 2012, Brisbane [p5124: line 4].

⁶⁷³ Transcript, Robert Ayre, 3 February 2012, Brisbane [p5190: line 55 – p5191: line 10].

dam in strategy W3. If this term is to be used in the manual prepared as part of the longer term review, it should be precisely defined.

446. If the definition involves diverse concepts, then some attempt must be made to relate those concepts back to the strategies, such that flood engineers can reach a clear understanding of their objectives and primary considerations.

10 Significance of failure to comply with this aspect of the manual

447. These hearings have been concerned with whether there was non-compliance with part of the Wivenhoe manual, but not any part of the manual which set gate release strategy. The part of the Wivenhoe manual with which the Commission has been concerned is that which demands the selection of an overall strategy. Each strategy contains a “primary consideration” and sets an upper limit for the amount of water that may be released while that strategy is in place. The primary consideration informs the considerable discretion which reposes in the flood engineers in choosing the amount of water to be released from the dams.¹ The exercise of that discretion will involve judgment calls.²
448. Last year, the Commission received a report from Mr Babister of WMAwater modelling the effects of a number of different gate opening scenarios to show the effect such scenarios would have on maximum river heights in the Brisbane River relative to the strategy used in January 2011.³ That July 2011 report was provided to the parties last year, and submissions were received in relation to it.
449. In February 2012, the Commission received a further report from WMAwater. This further report⁴ expands upon one of the model scenarios the subject of Mr Babister’s July 2011 report, and reports on the results of two new model scenarios. This report models the outer limit to which such scenarios can run.⁵
450. The new scenarios model increased releases from 8.00 am on 8 January 2011. The first models releases of 4 000 cubic metres per second and the second models releases increased so as to cause the flow at Moggill to be 4 000 cubic metres per second.
451. As may be expected, both of those scenarios show some decrease in flood heights downstream. However, as also may be expected with outer limit scenarios, neither scenario is realistic.⁶ The new scenarios rely on releasing water from the dam and substantially raising flood levels long before it was known that there was going to be a serious flood.⁷ Between 11.00 am on 8

January 2011 and 1.00 pm on 9 January 2011, both of these strategies would have involved dam outflows that are almost double the peak dam inflow observed until that point. That would have the effect of the dam operating as a flood amplification dam rather than a flood mitigation dam.⁸ Mr Babister concluded that these scenarios are not practical and are highly risky.⁹ If, for example, the rest of the rainfall did not eventuate, the early release of such large quantities of water would have made the flooding significantly worse.

452. In considering the significance of the failure to comply with the Wivenhoe manual, these model results must be weighed against three salient points.
453. Firstly, the model results have limitations:
- a. They are only illustrative. In his evidence Mr Babister acknowledged that “models do have some uncertainty in them”.¹⁰
 - b. They do not demonstrate the outcomes for the infinite range of possibilities that exist.¹¹
454. Secondly, while the increase of releases at 8.00 am on 8 January 2011 to the maximum permissible under strategy W3 may have been impractical, had the flood engineers appreciated, at that time, that they were in strategy W3, it is possible they may have exercised their discretion with respect to releases differently.
455. As was acknowledged by Mr Roads:
- a. when operating the dam, the flood engineer has to appreciate what strategy he is in¹²
 - b. the big difference between strategies W1 and W3 is the maximum releases – the flood engineer is capable of increasing discharges to 3500 m³/s, rather than limiting outflows to 1900 m³/s¹³
 - c. while on Sunday morning, 9 January 2011, the flood engineers were “pretty much releasing what they should have been”, by Sunday afternoon “maybe we should have taken down the bridges a bit earlier”.¹⁴

456. Mr Babister also acknowledged that it was practical to have higher releases on the afternoon of 9 January 2011 than that which occurred.¹⁵
457. Mr Tibaldi volunteered in evidence that, had greater releases been made at an earlier time, the extent of the flooding which ultimately occurred might have been reduced,¹⁶ as much was also acknowledged by Mr Babister.¹⁷
458. Regardless of whether the flood engineers would have ultimately exercised their discretion to make greater releases at an earlier time, they were not acting in accordance with the manual if they were operating under a false constraint about the maximum level of flows that could be achieved.
459. Thirdly, the non-compliance of the kind disclosed by the evidence has significance to the issue of public confidence. It is necessary, in order to maintain public confidence in the systems which operate during floods, to ensure that any report on the manner in which a dam is operated during a flood is accurate.

11 Concluding comments

460. There are no systems or protocols in place regarding when it is appropriate for the Seqwater chief executive officer to contact the flood operations centre.
461. There is no system to determine when information on the work of the flood operations centre should be provided by the chief executive officer to the board of Seqwater.
462. Mr Ayre did not, at 8.00 am on 8 January 2011, consciously engage with the requirements of the manual insofar as they related to adoption of strategies.
463. On 8 January and for at least part of 9 January 2011, there had been no conscious engagement of strategy W3.
464. To the extent that it is possible now to work out whether any, and if so which strategies were engaged, it would seem, on the evidence, that as at 5.53 pm on 8 January 2011, Mr Ayre was operating the dam in strategy W1.
465. There is nothing to suggest that any change to this strategy was made prior to 3.30 pm on Sunday 9 January.
466. A clear appreciation of the fact that W3 was applicable on 9 January may have promoted a more aggressive approach to releases that day.
467. It is not possible, now, to reach any clear and settled conclusion about the engineers' states of mind as regards strategies prior to the adoption of W4. But all indications are that the engineers were just getting on with the management of the dam, without reference to the manual and without recognising they would need to later explain their actions by reference to the manual.
468. The failure to engage strategies as required was a breach of the Manual.
469. It was apparent to all flood engineers that:
 - a. there was no record of strategies kept during the event
 - b. no coherent account of strategies existed in the period 15 – 17 January

- c. there was a need for such an account to be created in order to represent compliance with the manual and to meet the expectations of others

470. By 17 January 2011, Mr Malone understood W2 to have been engaged.

471. By 17 January, Mr Tibaldi understood W2 to have been engaged.

472. By 17 January, Mr Ayre was aware of the existence of the strategy summary log, Mr Malone's summary of the manual, and the Minister's brief. He must have been aware of the content of those documents and that they positively contradicted any move to W3 at 8.00 am on 8 January 2011. He expressed no dissent and took no steps to correct this.

[REDACTED]

474. All engineers were aware of the method adopted by Mr Tibaldi in writing the report.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

477. Mr Ayre, in particular, knew that the Report was misleading because he was present at 8 am on 8 January, and if he had any state of mind at all about Strategies, he still believed W1 was applicable at 5.53 pm that day. If that is not so then, at best, he did not appreciate whether he was applying W2 or W3, since his perception was that he had no particular reason to choose between them.

478. The presentation of the March report was, prima facie, a dishonest dealing with information. At the very least, it represented that strategy W3 had been adopted for use at 8.00 am on 8 January 2011, when it had not. It purported to be an actual and accurate record of strategy adoption; it was not. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

481. The degree of suspicion is sufficient to warrant the continued investigation of this matter by a law enforcement agency which has at its disposal investigative techniques to which the Commission does not have access. Given that the relevant parties were public officials at the time of the events, the Crime and Misconduct Commission would be the appropriate agency to which the matters should be referred. That agency should consider the matters identified in Part 6 *Evidence to the Commission*.

Suggestions for the making of recommendations by the Commission

482. Building on the Interim Report, it is essential that contemporaneous records are kept of choice of strategy. Those records should also record the reasons why a strategy is chosen.

483. The process by which flood event reports are written needs to be overhauled, so as to ensure:

- a. sufficient resources are dedicated to the task
- b. sufficient time is permitted for undertaking the task

- c. the reports are prepared by someone who played no role in the operation of the dam during the flood event
 - d. the peer review process is undertaken by ensuring:
 - i. all relevant information is provided to the peer reviewer
 - ii. sufficient time is permitted for the peer review to take place
 - iii. independence of the peer reviewers.
484. Seqwater should ensure that proper support and oversight mechanisms are put in place around both the substantive and procedural aspects of drafting flood event reports. Seqwater should consider engaging consultants with expertise in the production of reports following significant events to advise on these mechanisms. Measures to be considered should include:
- e. ensuring appropriate systems are in place to ensure the recollections of flood engineers and other parties are recorded immediately after the event, perhaps by engaging an external party to interview the flood engineers and other parties
 - f. ensuring that a methodology for writing the report is set out clearly in advance, in writing, and that the final report includes a statement of that methodology
 - g. putting in place systems to ensure that members of senior management have sufficient understanding of both the methodology and process by which the report is prepared to allow themselves to be satisfied that these are appropriate.
485. The Commission should recommend that, in the longer term review of the Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam, Seqwater should ensure that:

- a. if strategies of the form of strategy W2 and W3 in Revision 7 are included in the revised manual, when and how they should be implemented are clearly described
 - b. if the concept of 'urban inundation' is relevant to the operation of the dam, it should be defined. If the definition involves diverse concepts, then those concepts should be related back to the strategies, such that flood engineers can reach a clear understanding of their objectives and primary considerations.
486. DERM should ensure that a sufficiently independent and appropriately qualified person immediately starts the task of reviewing the March report to ensure that the review is completed before the 2012/2013 wet season.
487. The Crime and Misconduct Commission investigate whether the conduct of Mr Tibaldi, Mr Ayre, Mr Malone [REDACTED] relating to:
- a. preparation of documents surrounding the January 2011 flood event, including the 17 January 2011 report to the Minister, the 2 March 2011 flood event report, statements provided to the Commission
 - b. oral testimony given to the Commission
- evidences offence/s against Chapter 16 of the Criminal Code, and/or official misconduct under the *Crime and Misconduct Act 2001* committed by any, or all, of the named persons.
488. Seqwater should ensure that accurate information/briefings are provided to the Queensland Government. If Seqwater becomes aware that any information provided to the Queensland Government is inaccurate, it must advise the Queensland Government of the error as soon as possible and provide the corrected information in a timely and meaningful way.
489. Seqwater should establish a protocol for communications between Seqwater management and the flood operations centre during a flood event, including a

protocol which ensures that operating strategies at Wivenhoe Dam are accurately communicated to management during a flood event.

¹ Transcript, Brian Cooper, 8 February 2012, Brisbane [p5708: line 16-19]; Transcript, Colin Apelt, 8 February 2012, Brisbane [p5734: line 37-44].

² The type of judgment call that is involved is explained by Emeritus Professor Apelt. See Transcript, Colin Apelt, 8 February 2012, Brisbane [p5728: line 43-55].

³ Exhibit 1123, WMAwater, Review of Hydraulic Modelling Final Report, July 2011.

⁴ Exhibit 1127, WMAwater, Clarification of Scenario C and Additional Modelling, February 2012.

⁵ In a very late submission received from DHI Water and Environment Pty Ltd (dated 12 February 2012) it is submitted that these scenarios do not fully exploit the flood mitigation capabilities of Wivenhoe Dam. It appears from the submission, however, that a scenario involving full exploitation would involve operation of Wivenhoe Dam outside of the rules in the Wivenhoe manual.

⁶ Transcript, Mark Babister, 10 February 2012, Brisbane [p5891: line 4-6].

⁷ Transcript, Mark Babister, 10 February 2012, Brisbane [p5891: line 10-13].

⁸ Exhibit 1127, WMAwater, Clarification of Scenario C and Additional Modelling, February 2012 [p10: para 23].

⁹ Transcript, Mark Babister, 10 February 2012, Brisbane [p5891: line 27-31].

¹⁰ Transcript, Mark Babister, 10 February 2012, Brisbane [p5892: line 19-22]. The Commission has also received a very late submission (dated 12 February 2012) from DHI Water and Environment Pty Ltd. It, as developer of the MIKE11 river and flood modelling software, which submits that there are a number of issues in relation to how the model has been developed and applied that limit its predictive capabilities and add to the uncertainty associated with the model results.

¹¹ Transcript, Mark Babister, 10 February 2012, Brisbane [p5892: line 10-16].

¹² Transcript, Greg Roads, 9 February 2012, Brisbane [p5771: line 13-15].

¹³ Transcript, Greg Roads, 9 February 2012, Brisbane [p5773: line 20-24].

¹⁴ Transcript, Greg Roads, 9 February 2012, Brisbane [p5773: line 29-42].

¹⁵ Transcript, Mark Babister, 10 February 2012, Brisbane [p5891: line 44 – p5892: line 8; p5899: line 50-57]. The time at which Mr Babister says the higher releases would have commenced varies in his testimony.

¹⁶ Transcript, John Tibaldi, 2 February 2012, Brisbane [p5086: line 52-54].

¹⁷ Transcript, Mark Babister, 10 February 2012, Brisbane [p5892: line 10-43].