SCHEDULE OF RELEVANT EVENTS

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
Friday 7 January 17:57	Situation Report 6	Appendix E, Page 10 Exhibit 24	**Impacts downstream of Wivenhoe** The projected Wivenhoe release of 1,200m3/s combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Savages Crossing, Burtons Bridge, Kholo Bridge and Colleges Crossing) will be adversely impacted for several days. At this stage Fernvale and Mt Crosby Weir Bridge are not expected to be affected. Discussions were held with Brisbane City Council and BoM with all agencies agreeing that the combined flow in the lower Brisbane R will only add 50mm to an upper limit of 100mmto the recorded water levels in the City Reach of the Brisbane River. However, it is noted that tides in the lower Brisbane R will be 0.4 to 0.5 metres higher than predicted tides Somerset Regional, Ipswich City and Brisbane City Councils have been advised of the Wivenhoe operating strategy.
Saturday 8 January 4.50am	Operations Directive No. 3	Appendix L, p.4 Exhibit 24	"The following gate operations should be undertaken: …" [designed to produce releases less than 1000m^3/s – see Exhibit 4, p.155]
Saturday 8 January 6:32am	Situation Report 8 (John Ruffini)	Appendix E, page 13 Exhibit 24	**Wivenhoe (Full Supply Level 67.00 m AHD)** At 0600 Saturday, Wivenhoe Dam was 68.45 m AHD and rising steadily with all five gates open and releasing about 890 m3/s. River levels upstream of Wivenhoe Dam were rising again, generating further inflow to the dam It is intended to ramp up the release from Wivenhoe to 1,200m3/s by midday Saturday 08/01/2011. Further assessments will be undertaken to determine increases above this level. However, given the high likelihood of significant inflows in the next week, this may be increased. Since the commencement of the event on 02/01/2011, approximately 200,000ML has flowed into Wivenhoe Dam (including Somerset releases) with a further 180,000ML expected based on the recorded rainfall to date. Approximately 50,000ML has been released from Wivenhoe via the hydro and regulator at about 50m3/s.

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			Impacts downstream of Wivenhoe The projected Wivenhoe release of 1,200m3/s combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Savages Crossing, Burtons Bridge, Kholo Bridge and Colleges Crossing) will be adversely impacted for several days. At this stage Fernvale and Mt Crosby Weir Bridge are not expected to be affected but they could potentially be affected if the predicted rainfall totals eventuate. The current available assessments indicate that the combined flow in the lower Brisbane R would only add 50mm to an upper limit of 100mm to the recorded water levels in the City Reach of the Brisbane Rive. However, it is noted that tides in the lower Brisbane R will be 0.4 to 0.5 metres higher than predicted tides
Saturday 8 January 7.00am (TSR)	Technical Situation Report W31	Annexure RD5-144 to statement of Rob Drury Exhibit 430	The projected Wivenhoe release of 1*,200m3/s* combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Savages Crossing, Burtons Bridge, Kholo Bridge and Colleges Crossing) will be adversely impacted for several days. At this stage Fernvale and Mt Crosby Weir Bridge are not expected to be affected but they could potentially be affected if the predicted rainfall totals eventuate.
Saturday 8 January 7.11am		Exhibit 24, p.153	First time that Wivenhoe reaches 68.5m AHD: trigger for engaging W2/W3 strategy**.**
Saturday 8 January 8:15am	Operations Directive No. 4 (Robert Ayre)	Appendix L, p.5 Exhibit 24	The following gate operations should be undertaken commencing at 09:00 *07/01/2011* … It is noted that the hydro will continuing releasing *13 m3/s.* At the completion of these gate operations the dam will be releasing 1,247 m3/s.
Saturday 8 January 9:00am	Email from Dan Spiller	Annexure RD5-142 to the statement of Rob Drury Exhibit 430	For Wivenhoe Dam: • All five gates are now open with the release rate planned to increase to 1200 cubic metres per second by midday today. This release rate is less than peak release from October 2010. • The release strategy will continue to be reviewed based on actual rainfall. With Significant inflows, it may need to be increased.

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			• As advised yesterday, a number of local bridges have been inundated by releases and local flows. The Fernvale and Mt Crosby Weir Bridges could potentially also be affected if predicted rainfall totals eventuate. • The BoM and Seqwater concur that current releases will increase the level of the lower Brisbane River by about 50 to 100mm. There is currently a 40 to 50mm atmospheric anomaly.
Saturday 8 January 10:50am	Flood Event Log pg 7	Exhibit 23	Confirmation of conversation between Rob Drury and Rob Ayre. RA advised "current status and strategy"
Saturday 8 January 2:22pm	Situation Report 9 (Robert Ayre)	Appendix E, Page 15 Exhibit 24	**Impacts downstream of Wivenhoe** The projected Wivenhoe release of 1,250m3/s and combined with Lockyer flows and local runoff will mean that all low level crossings downstream of Wivenhoe (Twin Bridges, Savages Crossing, Burtons Bridge, Kholo Bridge and Colleges Crossing) will be adversely impacted for several days. At this stage Fernvale and Mt Crosby Weir Bridge are not expected to be affected, but they could potentially be affected if the predicted rainfall totals eventuate and higher releases from Wivenhoe Dam are considered necessary. The current available assessments indicate that the combined flow in the lower Brisbane River would only add 50mm to an upper limit of 100mm to the recorded water levels in the City Reach of the Brisbane River. However, it is noted that tides in the lower Brisbane R will be 0.4 to 0.5 metres higher than predicted tides. The tide level at the Port Office Gauge at 1200 Saturday was 1.56 m and rising.
Saturday 8 January 5:53pm	Email from Rob Ayre: Situation Report	Annexure RD5-154 to the Statement of Rob Drury Exhibit 430 (Not included in Exhibit 24)	"Assessments have been undertaken to determine possible increases to releases given the high likelihood of significant inflows in the nex1 few days. The interaction with runoff from the Bremer River and Warrill Creek catchment is an important consideration as the event magnitude <u>will require the application of Wivenhoe Dam flood operation strategy W2</u> (Transition strategy between minimizing downstream impacts and maximizing protection to urban areas)" (underlining added)

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Saturday 8 January 11:23pm	Email from Dan Spiller to CEO of BCC (and cc'd to Barry Dennien)	Pg ref D139 of Topic 8, Annexure D to the statement of Dan Spiller Exhibit 432	"To date the primary objective has been managing to prevent inundation of the Mt Crosby Weir and Fernvale Bridges." (underlining added)
Saturday 8 January 12:16pm	Email from Rob Ayre to Stakeholders: Flood Operation Centre Status Report	Annexure RD5-152 to Statement of Rob Drury Exhibit 430	"The projected Wivenhoe release of 1,250*m3/s* and combined with Lockyer flows and local runoff will mean that all low level crossings downstream of Wivenhoe (Twin Bridges, Savages Crossing, Burtons Bridge, Kholo Bridge and Colleges Crossing) will be adversely impacted for several days, At this stage Fernvale and Mt Crosby Weir Bridge are not expected to be affected, but they could potentially be affected if the predicted rainfall totals eventuate and higher releases from Wivenhoe Dam are considered necessary)"
Sunday January 9 6:15am	Situation report 10 Technical Situation report W32	Annexure RD5-164 to the Statement of Rob Drury Annexure RD5-169 to the Statement of Rob Drury Exhibit 430	**Wivenhoe Dam (Full Supply Level 67.00 m AHD)** The dam level is currently falling slowly, with the current level being 68.58m AHD. River levels upstream of the dam are receding, however further inflows will result from any additional rainfall. The current gate operation strategy will maintain flows of around1,600m3/s in the mid-Brisbane River. The current release rate from Wivenhoe Dam is116,000ML/day. Since the commencement of the event on 02/01/2011approximately150,000ML has been released from the dam, with a total of at least 450,000ML to be released based on the currently recorded rainfall. The total release for the event is likely to increase over the next few days based on the current rainfall forecasts. At this stage, releases will continue until at least Wednesday. **Impacts downstream of Wivenhoe Dam** The current Wivenhoe Dam release combined with Lockyer flows and local runoff will mean that all low level crossings downstream of Wivenhoe (Twin Bridges, Savages Crossing, Burtons Bridge, Kholo Bridge and Colleges Crossing) will be adversely impacted until at least Wednesday 12 January. At this stage Fernvale and Mt Crosby Weir Bridge are not expected to be affected, but this may be revised if the predicted rainfall totals eventuate and higher releases from

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			Wivenhoe Dam are considered necessary.
Sunday January 9 6:50am	Flood Event Log	Exhibit 23	Rob Drury Rang and spoke to John Tibaldi. Tibaldi advised Rob Drury on current release strategy based on overnight rainfall
Sunday January 9 7:26am	Email from Drury to Spiller	Annexure RD5-166 to the Statement of Rob Drury Exhibit 430	"Basically continuing releases to maintain 1600 cumecs total flow in the mid Brisbane but watching predicted rainfall as the strategy may change, Fernvale and Mt Crosby bridges still should be unaffected but does depend on what rain we get today or tomorrow."
Sunday January 9 8:14am	Email from Daniel Spiller to Minister Robertson and stakeholders	Annexure RD5-193 to the statement of Rob Drury Exhibit 430	"• Wivenhoe Dam is continuing releases at about 116,000 ML/day. Releases are expected to continue until at least Wednesday. • A severe weather warning remains current for dam catchments. There has been heavy rainfall in the Somerset Dam catchment over the past two hours. • The release strategy will continue to be reviewed based on actual rainfall. • Releases are being made so as to avoid inundating the Fernvale and Mt Crosby Weir Bridges. Other flows may impact on the bridges, should the forecast rainfall eventuate.
Sunday January 9 3:30pm	Flood Event Log Comments of John Ruffini. This confirmed a meeting of all engineers**.**	Page 2 of Annexure JLR-11 to the statement of John Ruffini See also Exhibit 23	"At this stage operating at the top end of W1, bottom end of W2"

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Sunday January 9 4:15pm	Flood Event Log Entry	Exhibit 23	"TM called Tony Jacobs (Somerset RC) advising that the current strategy was to maintain flow in the Brisbane River such that the Fernvale Bridge and Mt Crosby Bridge could be kept open. However, future rainfall could well impact on those roads remaining open. Closure next Tuesday is a real possibility at this stage"
Sunday January 9 4:19pm	Email from Dan Spiller to Rob Drury	Annexure RD5-209 to the Statement of Rob Drury Exhibit 430	"From: Dan Spiller <Daniel.Spiller@seqwgm.com.au> Sent: Sunday, January 9, 20114:19 PM To: Rob Drury <rdrury@seqwatercom.au> Re: Technical Report W31 Rob, Seems to have been a lot of rain in the catchments, and more heading for Bris Any changes to strategy? Dan"
Sunday January 9 4:29pm	Reply email from Drury to Spiller	Annexure RD5-212 to the Statement of Rob Drury Exhibit 430	From: Rob Drury <rdrury@seqwatercom> Sunday, January 9, 20114:29 PM To: 'Daniel. Spiller@seqwgmcom.au' Re: Technical Report W31 "Not yet. Duty engineers meeting this afternoon to discuss strategies. Will advise if any change but you are right, we are getting big inflows. Rob
Sunday January 9 4:20pm	Flood Event Log Entry	Exhibit 23	"TM called Tony Trace (ICC) advising that the current strategy was to maintain flow in the Brisbane River such that the Fernvale Bridge and Mt Crosby Bridge could be kept open. However, future rainfall could well impact on those roads remaining open. Closure next Tuesday is a real possibility at this stage.

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
Sunday January 9 4:27pm	Flood Event Log Entry	Exhibit 23	"Ken Morris returned phone call. Ken was advised by TM that the current strategy was to maintain flow in the Brisbane River such that the Fernvale Bridge and Mt Crosby Bridge could be kept open. However, future rainfall could well impact on those roads remaining open. Closure next Tuesday is a real possibility at this stage. Flow in the lower Brisbane potentially might reach 3,000 cumecs by next Wednesday or Thursday""
Sunday January 9 5:18pm	Flood Event Log Entry	Exhibit 23	"NA left a message with Graham Keegan (A/Co-ord) regarding the potential for Fernvale and Mount Crosby Bridge to be closed, possibly from Tuesday. This may impact on staffing issues for both Wivenhoe and Somerset Dam during this flood event. Request for Graham to contact FOC ASAP."
Sunday January 9 5:25pm	Flood Event Log Entry	Exhibit 23	"Don Carroll BCC returned call to TM. TM advised potential for releases up to 2,500 cumecs by Tuesday. With further heavy rainfall, as forecast, the flow in the lower Brisbane could increase to 3,000 cumecs with potential for closure of Fernvale Bridge and Mount Crosby Bridge by Thursday (possibly Wednesday). Releases from Wivenhoe are dependent on flows from Lockyer Creek and inflow to Wivenhoe. FOC will continue to update BCC."
Sunday January 9 5:40pm	Flood Event Log	Exhibit 23	Rob Drury phoned John Tibaldi for an update on the current situation
Sunday January 9 5:45pm	Flood Event Log Entry	Exhibit 23	Graham Keegan Returned call and NA advised that TM had requested Graham factor into his staffing roster of Wivenhoe and Somerset Dams the potential for the Fernvale and Mount Crosby Bridge to be closed mid-week sometime depending on the likelihood of further heavy rainfall.
Sunday January 9 5:51pm	Situation Report (Terry Malone)	Annexure RD5-224 to the statement of Rob Drury Exhibit 430	**Impacts downstream of Wivenhoe Dam** The current Wivenhoe Dam release combined with Lockyer flows and local runoff will mean that all low level crossings downstream of Wivenhoe (Twin Bridges, Savages Crossing, Burtons Bridge, Kholo Bridge and Colleges Crossing) will be adversely impacted until at least Saturday 15 January. At this stage Fernvale and Mt Crosby Weir Bridge will not be affected for the next 24 hours but there is a strong possibility that, if the predicted rainfall totals eventuate in the next 12 to 24 hours, higher releases from Wivenhoe Dam will be necessary. This may adversely impact upon Fernvale and Mt Crosby Weir Bridges as early as Tuesday morning.

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
Sunday January 9 5:58pm	Flood Event Log Entry	Exhibit 23	TM called Jeff Perkins (BoM) to discuss Wivenhoe Dam's release strategy i.e. Major bridge open strategy vs increased flow into Wivenhoe resulting from current heavy rainfall. Situation will become clearer in 24 hours time.
Sunday January 9 7:10pm	Flood Event Log Entry	Exhibit 23	FOC called Tony Jacobs (SRC) advising him that high releases from Wivenhoe (3,000) cumecs are expected to be necessary in view of heavy rain over the last 3 hours.
Sunday January 9 7:15pm	Flood Event Log Entry	Exhibit 23	FOC called Peter Burrows (Seqwater) advising him that high rainfall is expected overnight and releases from Wivenhoe causing damaging flooding are likely to be necessary.
Sunday January 9 7:15pm	Flood Event Log Entry	Exhibit 23	FOC called Peter Allen advising him that FOC is now looking at much larger flows and will have to ramp up releases to around 3000 cumecs as by as early as midnight which is likely to have flooding impacts on low lying areas of Brisbane.
Sunday January 9 7:20pm	Flood Event Log Entry	Exhibit 23	TM called Don Carroll (BCC) advising him of potential high releases sooner than expected.
Sunday January 9 9:04pm	Situation Report 12 (Terry Malone) Technical Situation Report W34	Annexure RD5-232 to the statement of Rob Drury Annexure RD5-236 to the statement of Rob Drury Exhibit 430	**Wivenhoe Dam (Full Supply Level 67.00 m AHD)** River levels upstream of the dam are rising quickly with significant inflow being generated from the intense heavy rainfall. Flows in the Brisbane River at Gregor's Ck have already reached *6,700m3/s* and the river is still rising. The dam level is rising again, with the current level being 69.10m AHD (1,410,000ML with about 300,00 (sic) of flood storage). Estimated peak inflow to the dam just from the Upper Brisbane R alone may reach as high as *7,500m3/s* and, at this stage, the dam will reach at least 73.0 m AHD during Tuesday morning. Given the rapid increase in inflow volumes, it will be necessary to increase the release from Wivenhoe Monday morning. The objective for dam operations <u>will be to minimise the impact of urban flooding</u> in areas downstream of the dam and, at this stage, releases will be kept below *3,500m3/s* and the combined flows is the lower Brisbane will be limited to *4,000m3/s.* This is below the limit of urban damages in the City reaches.

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
			The current release rate from Wivenhoe Dam is 1 *AOOm3/s* (120,000MUday). Gate opening will start to be increased from noon Monday and the release is expected increase to at least *2,600m3/s* during Tuesday morning. Since the commencement of the event on *02/01/2011* approximately 220,000ML has been released from the dam, with an event total approaching 1 ,OOO,OOOML without further rain and as much as 1 ,500,000ML with forecast rainfall of (both including Somerset outflow).At this stage, releases will continue until at least Sunday 16th January 2011. **Impacts downstream of Wivenhoe Dam** The projected Wivenhoe Dam releases combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Fernvale, Savages Crossing, Burtons Bridge, Kholo Bridge, Mt Crosby Weir and Colleges Crossing) will be adversely impacted until at least Saturday 15 January in varying degrees. (underlining added)
Sunday January 9 9:10pm	Flood Event Log	Exhibit 23	Rob Drury called and spoke with Robert Ayre. Robert Ayre confirmed that releases would have to be ramped up from 1400 to 2500 cumecs which will cause flooding in low lying areas of Brisbane.
Sunday January 9 10:20pm	Flood Event Log	Exhibit 23	Rob Drury called and spoke with Robert Ayre. Teleconference with DERM and Water Grid Manager. Explained 9:00pm situation report. Water Grid Manager will be distributing a media release.
Sunday January 9 10:45pm	Flood Event Log	Exhibit 23	Rob Drury called and spoke with Robert Ayre. Drury will now contact Dan Spiller to advise of closure of Mt Crosby Weir Bridge. Police are on site.
Sunday January 9 11:07pm	Email of Dan Spiller to Minister Robertson	Annexure RD5-247 to the statement of Rob Drury Exhibit 430	"At this time, including forecast rainfall, total inflows will exceed 1,000,000 ML and may approach 1,500,000 ML – in the order of the 1974 flood volume. <u>To date</u>, 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. This involves larger releases now, minimizing the risk of even larger releases later (were the flood compartment to reach high levels)." (underlining added)

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Sunday January 9 11:20pm	Flood Event Log Entry	Exhibit 23	JR called Tony Trace (ICC) and left message regarding rates of rise at Mt Crosby. Bridge will be inundated within the next couple of hours.
Sunday January 9 11:25pm	Flood Event Log Entry	Exhibit 23	JR called Ross Drabble (ICC) regarding rates of rise at Mt Crosby (approx 200mm from going over) will be inundated within the next couple of hours. Confirmed more rain is on the way and releases will need to be increased.
Monday January 10 12:55am	Flood Event Log	Exhibit 23	John Ruffini called Rob Drury to discuss Ken's view on damaging flows. Ruffini confirmed that if flows were kept below 3,500 the fuse plug would be triggered. Agreed that situation reports will not allude to damage levels – the councils can decide what to report.
Monday January 10 1:14am	FOC Situation Report (John Ruffini) Technical Situation Report W35	Annexure RD5-255 to the statement of Rob Drury Annexure RD5-309 to the statement of Rob Drury Exhibit 430	**Wivenhoe Dam (Full Supply Level 67.00 m AHD)** River levels upstream of the dam are rising quickly with significant inflow being generated from the intense heavy rainfall. Flows in the Brisbane River at Gregor's Ck have already reached *7,350m3/s* and the river has just peaked at 23:00 on Sunday 9 January. The dam level is rising quickly, with the current level being 69.60m AHD (storing 301,000 ML). Estimated peak inflow to the dam just from the Upper Brisbane R alone may reach as high as *8,800m3/s* and, at this stage, the dam will reach at least 73.3 m AHD during Tuesday morning. Given the rapid increase in inflow volumes, it will be necessary to increase the release from Wivenhoe during Monday morning. The objective for dam operations <u>will be</u> 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 in the lower Brisbane will be limited to *4,000m3/s* if possible. **Impacts downstream of Wivenhoe Dam** The projected Wivenhoe Dam releases combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges,

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			Fernvale, Savages Crossing, Burtons Bridge, Kholo Bridge, Mt Crosby Weir and Colleges Crossing) will be adversely impacted until at least Saturday 15 January in varying degrees. Water levels in the lower Brisbane R will be impacted by the combined flows of Lockyer Ck, Bremer River, local runoff and releases from Wivenhoe Dam. If the predicted rainfall eventuates in the downstream tributary catchments the resultant combined flows in the lower Brisbane may exceed the threshold of damaging discharge in the urban areas within the next 24 to 48 hours. (underlining added)
Monday January 10 1:28am	Email of Drury to Spiller and stakeholders	Annexure RD5-257 to the statement of Rob Drury Exhibit 430	From: Rob *Drury* <rdrury@seqwater.com To: 'Daniel. Spiller@seqwgm.com.au'; 'Barry.Dennien@seqwgm.com.au'; 'Michael.Lyons@seqwgm.com.au'; 'media@seqwgm.com.au'; 'debbie.best@derm.qld.gov.au'; 'Scott.Denner@seqwgm.com.au'; Paul Bird <pbird@seqwater.com.au>; Stan Stevenson <sstevenson@seqwater.com.au>; Peter Borrows <pborrows@seqwater.com.au>; 'Peter.Allen@nrw.qld.gov.au' Subject: Re: Technical Report W34 Monday, January 10,2011 1:28 AM Since earlier discussions, further rain and local flooding have closed Mt Crosby and Fernvale bridges. Releases will now be ramped up overnight rather than tomorrow since these bridges are now closed and due to increasing inflows. Councils have been notified and are on site. Media messages in morning need to be adjusted accordingly. Rob
Monday January 10 5:05am	Flood Event Log	Exhibit 23	Rob Drury called John Ruffini to get situation update

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
Monday January 10 5:31am	Email of Spiller to Minister and stakeholders	Annexure RD5-263 to the statement of Rob Drury Exhibit 430	From: Dan Spiller Sent: Sunday, January 09,201111:07 PM To: stephen.robertson@ministerial.qld.gov.au; Ken Smith (ken.smith@premiers.qld.gov.au); Lance McCallum (lance.mccallum@ministerial.qld.gov.au); Tim Watts tim.watts@ministerial.qld.gov.au); Geoff Stead (geoff.stead@ministerial.qld.gov.au); lauren.sims@ministerial.qld.gov.au; Debbie Best (debbie.best@derm.qld.gov.au); Martin.PeterJ@police.qld.gov.au; Dunn.KerryG@police.qld.gov.au Cc: 'Rob Drury'; pbird@seqwater.com.au; 'sstevenson@seqwater.com.au'; SEQWGM Media; Scott Denner; Madgwick.DarrenT@police.qld.gov.au; Damien Brown (damien.brown@derm.qld.gov.au); bob.reilly@derm.qld.gov.au Subject: Updated Wivenhoe Dam release strategy All, Latest advice from the Flood Control Centre attached. There has been 100 to 300mm of rainfall in the Wivenhoe and Somerset dam catchments over the past 24 hours. Rainfall of similar magnitudes is expected over the next 12 to 24 hours. At this time, including forecast rainfall, total inflows will exceed 1,000,000 ML and may approach 1,500,000 ML – in the order of the 1974 flood volume. To date, <u>the primary objective for this event has been managing to prevent inundation of the Mt Crosby Weir and Fernvale Bridges.</u> With the forecast volumes, <u>this primary objective is being changed</u> to minimizing the risk of urban inundation. This involves larger releases now, minimizing the risk of even larger releases later (were the flood compartment to reach high levels). (underlining added)
Monday January 10 6:23am	Email from Drury to Councils	Annexure RD5-281 to the statement of	**Wivenhoe Dam (Full Supply Level 67.00 m AHD)** …

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
		Rob Drury Exhibit 430	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 in the lower Brisbane will be limited to *4,000m3/s* if possible. Fernvale Bridge approaches and Mt Crosby Weir Bridge have been inundated and both bridges are now closed or are in the process of being closed. The current release rate from Wivenhoe Dam is 1*,400m3/s* (120,000MLlday), Gate opening will start to be increased during early Monday morning and the release is expected to increase to at least *2,600m3/s.* Since the commencement of the event on *02/01/2011* approximately 240,000ML has been released from the dam, with an event total approaching 1 ,500,000ML without further rain and as much as 2,100,000ML with forecast rainfall of (both including Somerset outflow). At this stage, releases will continue until at least Sunday 16th January 2011. **Impacts downstream of Wivenhoe Dam** The projected Wivenhoe Dam releases combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Fernvale, Savages Crossing, Burtons Bridge, Kholo Bridge, Mt Crosby Weir and Colleges Crossing) will be adversely impacted until at least Saturday 15 January in varying degrees. (underlining added)
Monday January 10 6:30a	Situation report 14 (John Ruffini) Technical Situation Report W36	Annexure RD5-291 to the statement of Rob Drury RD5-313 to the statement of Rob Drury Exhibit 430	**Wivenhoe Dam (Full Supply Level 67.00 m AHD)** … 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 in the lower Brisbane will be limited to 4,000m3/s if possible. This is Significantly less than the current estimated combined pre-dam peak inflow of 12,000 m3/s. Fernvale Bridge approaches and Mt Crosby Weir Bridge have been inundated and both bridges are now closed. … **Impacts downstream of Wivenhoe Dam** The projected Wivenhoe Dam releases combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges,

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			Fernvale, Savages Crossing, Burtons Bridge, Kholo Bridge, Mt Crosby Weir and Colleges Crossing) will be adversely impacted until at least Saturday 15 January in varying degrees. Water levels in the lower Brisbane R will be impacted by the combined flows of Lockyer Ck, Bremer River, local runoff and releases from Wivenhoe Dam. If the predicted rainfall eventuates in the downstream tributary catchments the resultant combined flows in the lower Brisbane may exceed the threshold of damaging discharge in the urban areas within the next 24 to 48 hours. Currently the estimate peak flow in the lower Brisbane River will be the highest since Wivenhoe Dam was completed in 1984 but still well below flows the 1974 levels.
Monday January 10 6:36am	Email from Rob Drury to Paul Bird and Spiller	Annexure RD5-296 to the statement of Rob Drury Exhibit 430	From: Rob Drury <rdrury@seqwater.com> To: Paul Bird <pbird@seqwater.com.au>; 'Dan Spiller' <DanieI.Spiller@seqwgm.com.au> Sent: Monday, January 10,20116:36 AM Subject: Two things • Current release rate is 1 ,753m3!s (150,000MLIday) but ramping up • Our Flood Centre has been keeping Bcc flood centre informed which Bcc mobilised. The only issue so far is that our manual has the threshold of damage to urban areas as around 4,000 cumecs in the lower Brisbane River, they advised they think it is more like 3,500 cumecs. We are aiming for the 4,000 cumecs as per the approved manual so It would be good if we could still get a consolidated message out through all parties. Maybe advising flows of 3,500 to 4/000 cumecs which may cause some minor impacts downstream, of course this also depends on further rainfall in local areas. Of course if we need to go higher then the message would change. Rob

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Monday January 10 8:00am	Teleconference regarding release strategy. Drury, Bird, Borrows, Dennien, Lyons, Denner and Stevenson in the meeting.	Annexure RD5-303 to the statement of Rob Drury Exhibit 430	The relevant part is simply that this meeting occurred.
Monday January 10 7:00am	Technical Situation Report W35 This report is based on the Ruffini FOC report	Annexure RD5-309 to the statement of Rob Drury Exhibit 430	This document is sent to Stakeholders, but then Drury advises it is based on old information and issues W36 TSR. Objective for dam operations will be to minimise the impact of urban flooding
Monday January 10 8:00am	Technical Situation Report	Annexure RD5-313 to the statement of Rob Drury Exhibit 430	**Wivenhoe Dam (Full Supply Level 67.00 m AHD)** … 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 in the lower Brisbane will be limited to *4,000 m3/s* if possible. This is significantly less than the current estimated combined pre-darn peak inflow of 12,000 *m3/s.* Fernvale Bridge approaches and Mt Crosby Weir Bridge have been inundated and both bridges are now closed. The current release rate from Wivenhoe Darn is 1, *753rn3/s* (150,000MLlday). Gate opening will continue to be increased during Monday and the release is expected to increase to at least *2,600rn3/s* in the next 12 to 24 hours. Since the commencement of the event on *02/0112011* approximately 275,000ML has been released from the dam, with an event total approaching 1 ,600,000ML without further rain and as much as 2,100,000ML with forecast rainfall of (both including Somerset outflow). At this stage, releases will continue until at least Sunday 16th January 2011.

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
			Impacts downstream of Wivenhoe Dam The projected Wivenhoe Dam releases combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Fernvale, Savages Crossing, Burtons Bridge, Kholo Bridge, Mt Crosby Weir and Colleges Crossing) will be adversely impacted until at least Saturday 15 January in varying degrees.
Monday January 10 8:13am	Email from Spiller to Drury	Annexure RD5-319 to the statement of Rob Drury Exhibit 430	From: Dan Spiller <DanieLSpiller@seqwgm.com.au> Sent: Monday, January 10,20118:13 AM To: Rob Drury <rdrury@seqwateLcol11.au> Subject: RE: Technical Report W36 Rob, Are you now operating under release strategy W2 or W3? Dan
Monday January 10 8:23am	Email from Drury to Spiller	Annexure RD5-321 to the statement of Rob Drury. NB this document also exists at D200, topic 8, Annexure D to the statement of Dan Spiller. Exhibit 430	From: Rob Drury <rdrury@seqwater.com> Sent: Monday, January 10,2011 8:23 AM To: 'Daniel.Spiller@seqwgm.com.au' Subject: Re: Technical Report W36 W2
Monday January 10 9:46am	Dan Spiller email to Minister and stakeholders	Annexure RD5-327 to the Statement of Rob Drury NB this document also exists at D202	From: Dan Spiller <Daniel. Spiller@seqwgm.com.au> Sent: Monday, January 10,20119:46 AM To: stephen.robertson@ministerial.qld.gov.au; ken.smith@premiers.qld.gov.au;

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
		Topic 8 Annexure D to the statement of Dan Spiller. Exhibit 430	lance.mccallum@ministerial.qld.gov.au; Tim.Watts@ministerial.qld.gov.au; Geoff.Stead@ministerial.qld.gov.au; Lauren.Sims@ministerial.qld.gov.au; Best Debbie <DebbieBest@derm.qld.gov.au>; 'Martin.PeterJ@police.qld.gov.au'; 'Dunn.KerryG@police.qld.gov.au' Rob Drury <rdrury@seqwatercom.au>; Paul Bird <pbird@seqwatercom.au>; SEQWGM Media <media@seqwgm.com.au>; damien.brown@derm.qld.gov.au; Reilly Bob <Bob.Reilly@derm.qld.gov.au>; Madgwick.DarrenT@police.qld.gov.au; Stan Stevenson <sstevenson@seqwatercom.au> Attach; Technical Situation Report W36.docx Subject; Water Grid operations update All, Current situation report attached. We are distributing this version of the Technical Support Report to Councils and BoM now. We are seeking their formal input and endorsement by 1pm, prior to finalising and speaking publicly to our release strategy. For dam operations, key points are: • There is continuing heavy rainfall in catchments. Total inflows will be at least 1,500,000 ML and probably above 2,100,000 ML. • As a result, Wivenhoe Dam is above 140% of capacity and Somerset is above 150%, with both rising fast. • As specified in the approved Operational Procedures, the primary objective is now to minimizing the risk of urban inundation (release strategy W2). This involves larger releases now, minimizing the risk of even larger releases later (were the flood compartment to reach high levels).

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
			▪ Consistent with this release strategy, dam releases have increased to 1,750 cubic metres per second(150,000 ML/day). It is expected to increase to 2,600 cubic metres per second by midday tomorrow. • As specified in the approved Operational Manual, we are targeting maximum flow in the Brisbane River of 3,500 cumecs at Moggill. This is the levels above which urban inundation begins. • For comparison, flows would be up to 12,000 cumecs without the dams.
Monday January 10 9:55am	Email from "Duty Engineer" to Rob Drury	Annexure RD5-333 to the statement of Rob Drury	From: Duty Engineer <dutyseq(ii)uqconnect.net> Sent: Monday, January 10,2011 9:55 AM To: Rob Drury <rdrury@seqwater.com.au> Subject: RE: Notes The current operational strategy is to aim for a flow of no greater than 3,500cumecs in the lower Brisbane River. Accordingly, the current outflow from Wivenhoe Dam will be held at its current level of 2000 cumecs for the next 12 to 24 hours to allow for potential high flows from the Lockyer, Bremer and local area catchments to pass downstream. However this strategy may need to be revised at short notice if further significant rainfall occurs. It would require in the order of 5Omm of rain across the Brisbane River Basin (this includes the Brisbane, Stanley, Lockyer and Bremer catchments) to go beyond the current operational strategy, however this depends on the spatial distribution, intensity and duration of the rainfall. This amount of rain is possible under current BOM forecasts. If there is a need to go beyond 3,500 cumecs in the lower Brisbane around 24 hours notice should be able to be provided to BOM and BCC.

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
Monday January 10 9:56am	Email from Rob Drury to Borrows, Stevenson and Bird	Annexure RD5-334 to the statement of Rob Drury Exhibit 430	From: Rob Drury <rdrury@seqwater.com> Sent: Monday, January 10,2011 9:56 AM To: Peter Borrows <pborrows@seqwater.com.au>; Stan Stevenson <sstevenson@seqwater.com.au>; Paul Bird <pbird@seqwater.com.au> Subject: Answers to questions from teleconference Peter, If you want to forward to the WGM. Apologies for delay but they were in discussions with Councils. In response to the queries raised G The current operational strategy is to aim for a flow of no greater than 3,500 cumecs in the lower Brisbane -River. Accordingly, the current outflow from Wivenhoe Dam will be held at its current level of 2000 cumecs for the next 12 to 24 hours to allow for potential high flows from the Lockyer, Bremer and local area catchments to pass downstream, However this strategy may need to be revised at short notice if further significant rainfall occurs. @ It would require in the order of 50mm of rain across the Brisbane River Basin (this includes the Brisbane, Stanley, Lockyer and Bremer catchments) to go beyond the current operational strategy, however this depends on the spatial distribution, intensity and duration of the rainfall. This amount of rain is possible under current BOM forecasts. • If there is a need to go beyond 3,500cumecs in the lower Brisbane around 24 hours notice should be able to be provided to BOM and BCC.
Monday 10 January 9:57am	Technical Situation ReportW36 **(AMENDED VERSION)**	D208-D210, Topic 8, Annexure D to the Statement of Dan Spiller	There is an amendment to the flow rate from 3,500 to 4,000 in the situation report.

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
Monday January 10 10:02am	Email from Drury to Spiller and Dennien	Annexure RD5-342 to the statement of Rob Drury Exhibit 430	From: Rob Drury <rdrury@seqwater.com> Sent: Monday, January 10,2011 10:02 AM To: Daniel.Spiller@seqwgm.com.au'; 'Barry.Dennien@seqwgm.com.au Subject:FW: Answers to questions from teleconference Peter Borrows asked me to forward these on. In response to the queries raised The current operational strategy is to aim for a flow of no greater than 3,500cumecs in the lower Brisbane River. Accordingly, the current outflow from Wivenhoe Dam will be held at its current level of 2000 cumecs for the next 12 to 24 hours to a now for potential high flows from the Lockyer, Bremer and local area catchments to pass downstream. However this strategy may need to be revised at short notice if further significant rainfall occurs. It would require in the order of 50mm of rain across the Brisbane River Basin (this includes the Brisbane, Stanley, Lockyer and Bremer catchments) to go beyond the current operational strategy, however this depends on the spatial distribution, intensity and duration of the rainfall. This amount of rain is possible under current BOM forecasts. • If there is a need to go beyond 3,500 cumecs in the lower Brisbane around 24 hours notice should be able to be provided to BoM and BCC.
Monday January 10 10:09am	Email from Dan Spiller to Barry Dennien and Peter Borrows	Pg reference D224 to the 2nd Statement of Dan Spiller, Topic 8 (annexure D). Exhibit 432	“As specified in the approved Operational Procedures, the primary objective is now to minimizing the risk of urban inundation (release strategy W2).”

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
Monday January 10 10:11am	Email from Gina O'Driscoll to ICC, BCC and Somerset CC	D301, Topic 8, Annexure D to the statement of Dan Spiller Exhibit 432	As specified in the approved Operational Procedures, the primary objective is now to minimizing the risk of urban inundation (release strategy W2)."
Monday January 10 12:16pm	Situation Report 15 (Terry Malone)	Annexure RD5-373 to the statement of Rob Drury Exhibit 430	**Wivenhoe Dam (Full Supply level 67,00 m AHD)** … The objective for dam operations is to minimise the impact of urban flooding in areas downstream of the darn and the current aim is to keep river flows in the lower Brisbane River below 3,500m3/s if possible. This is significantly less than the current estimated combined pre-dam peak inflow of *12,000m3/s.* … **Impacts downstream of Wivenhoe Dam** The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Fernvale, Savages Crossing, Burtons Bridge, Kholo Bridge, Mt Crosby Weir and Colleges Crossing) will be adversely impacted until at least Saturday 15 January in varying degrees. Water levels in the lower Brisbane River will be impacted by the combined flows of Lockyer Creek, Bremer River, local runoff and releases from Wivenhoe Dam, If the predicted rainfall eventuates in the downstream tributary catchments the resultant combined flows in the lower Brisbane may exceed the threshold of damaging discharge in the urban areas within the next 24 to 48 hours. Currently the estimate peak flow in the lower Brisbane River will be the highest Since Wivenhoe Dam was completed in 1984 but still well below flows the 1974 levels.

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
Monday 10 January 14:58pm	Email from Terry Malone - FOC Situation Report	D324, Topic 8, Annexure D to the statement of Dan Spiller Exhibit 432	"The objective for dam operations is currently to minimise the impact of urban flooding in areas downstream of the dam"
Monday January 10 6:43pm	FOC Situation Report	Appendix E, Page 30 Exhibit 24	**Wivenhoe Dam (Full Supply Level 67.00 m AHD)** The dam level is 72.92m AHD and rising quickly. Releases from the dam have been increased over the last 3 hours in accordance with Flood Mitigation procedures and to ensure that a fuse plug is not initiated. The initiation of a fuse plug will result in a rapid uncontrolled outflow from the dam of 2,000m3/s being added to the gate release outflow. Outflows into the Brisbane River from both Lockyer Creek and the Bremer River are also increasing. The flash flooding experienced in the upper areas of Lockyer Creek have been examined and are not expected to significantly increase Brisbane River flows above the current projection of 4000m3/s at Moggill. Five radial gates are currently open at the dam releasing about 2,400m3/s into the Brisbane River and this will need to be increased steadily to an outflow of 2,800m3/s. At this stage, the dam will reach about 73.8m AHD during Tuesday morning. The objective for dam operations is currently to minimise the impact of urban flooding in areas downstream of the dam and to keep river flows in the lower Brisbane River below 4,000m3/s if possible. This is significantly less than the current estimated combined predam peak inflow of 12,000m3/s. If further rainfall occurs, dam releases may need to be increased further and this may result in river flows in the lower Brisbane River approaching or exceeding 5,000m3/s. **Impacts downstream of Wivenhoe Dam** The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Fernvale, Savages Crossing, Burtons Bridge, Kholo Bridge, Mt Crosby Weir and

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
			Colleges Crossing) will be adversely impacted until at least Sunday 16 January in varying degrees. Water levels in the lower Brisbane River will be impacted by the combined flows of Lockyer Creek, Bremer River, local runoff and releases from Wivenhoe Dam.
Monday January 10 23:56	Situation Report 16 (Terry Malone)	Appendix E, Page 32 Exhibit 24	**Wivenhoe Dam (Full Supply Level 67.00 m AHD)** The dam level is 73.22m AHD and rising at about 50 mm/hour. Releases from the dam have been held at a rate of 2,750 m3/s since 19:30 hours. Outflows into the Brisbane River from both Lockyer Creek and the Bremer River are also increasing. The BoM has provided further advice about the flash flooding experienced in the upper areas of Lockyer Creek. The rainfall responsible for this event was not observed at any rainfall stations but it is considered to be very significant. Flood levels in the Lockyer Creek catchment will exceed maximum recorded levels in some stations in the upper catchment. This flow may result in increases in Brisbane River levels below the junction of Lockyer Creek. Five radial gates are currently open at the dam releasing about 2,750m3/s into the Brisbane River. At this stage, the dam will reach about 73.8m AHD during Tuesday afternoon. The objective for dam operations is currently to minimise the impact of urban flooding in areas downstream of the dam and to keep river flows in the lower Brisbane River below 4,000m3/s if possible. This is significantly less than the current estimated combined predam peak inflow of 12,000m3/s. If further rainfall occurs, dam releases may need to be increased further and this may result in river flows in the lower Brisbane River approaching or exceeding 5,000m3/s. **Impacts downstream of Wivenhoe Dam** The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges,

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
			Fernvale, Savages Crossing, Burtons Bridge, Kholo Bridge, Mt Crosby Weir and Colleges Crossing) will be adversely impacted until at least Sunday 16 January in varying degrees. Water levels in the lower Brisbane River will be impacted by the combined flows of Lockyer Creek, Bremer River, local runoff and releases from Wivenhoe Dam. The BoM will provide further information regarding the magnitude of the flash flood event occurring in Lockyer Creek early Tuesday morning. Consideration will be given to modifying the releases from Wivenhoe Dam to try to moderate the peak flows emanating from Lockyer Creek.
Tuesday 11 January 06:12am	Situation Report 17 (Robert Ayre)	Appendix E, page 34 Exhibit 24	**Wivenhoe Dam (Full Supply Level 67.00 m AHD)** The dam level is 73.51m AHD and rising at about 25 mm/hour. Releases from the dam have been held at a rate of 2,750 m3/s since 19:30 hours on Monday 10 January 2011. Outflows into the Brisbane River from both Lockyer Creek and the Bremer River are also increasing. The BoM has provided further advice about the flash flooding experienced in the upper areas of Lockyer Creek. The rainfall responsible for this event was not observed at any rainfall stations but it is considered to be extreme. Flood levels in the Lockyer Creek catchment will exceed maximum recorded levels in some stations in the upper catchment. This flow will result in increases in Brisbane River levels below the junction of Lockyer Creek. Five radial gates are currently open at the dam releasing about 2,750m3/s into the Brisbane River. At this stage, the dam will reach just over 74.0m AHD during Tuesday evening. Above EL 74.0m AHD the objective for dam operations is to maintain the security of the dam and minimise downstream flood flows if possible. If further rainfall occurs, dam releases may need to be increased further and this may result in river flows in the lower Brisbane River approaching or exceeding 5,000m3/s.

Date and Time	Name of Document	Document Ref No. and/or location	Content of document/comment
			Impacts downstream of Wivenhoe Dam The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Fernvale, Savages Crossing, Burtons Bridge, Kholo Bridge, Mt Crosby Weir and Colleges Crossing) will be adversely impacted until at least Sunday 16 January in varying degrees. Water levels in the lower Brisbane River will be impacted by the combined flows of Lockyer Creek, Bremer River, local runoff and releases from Wivenhoe Dam. The BoM will provide further information regarding the magnitude of the flash flood event occurring in Lockyer Creek early Tuesday morning. Consideration was given to modifying the releases from Wivenhoe Dam to try to moderate the peak flows emanating from Lockyer Creek but the rainfall in the past 12 hours in the catchment above the dam makes this option not possible. Therefore instead of decreasing releases to accommodate the Lockyer Creek flows, the strategy will endeavour to maintain the current releases until Lockyer Creek peaks.