

Table comparing comments made by DERM and sent to Seqwater by email 13 October 2009 (Annexure 18 and 19 to Statement of Ronald Guppy) that were not incorporated into final version of Seventh Revision of Wivenhoe Flood Mitigation Manual  
 Prepared by Queensland Floods Commission staff

No. in Annexure 19	Suggestion by DERM (Annexure 18 and 19 to Statement of Ronald Guppy)	Final version of Seventh Revision of Wivenhoe Flood Mitigation Manual (Exhibit 21)
3	<p>Section 8.4 talks about the strategy being chosen based on predictions, maximums and peaks as below:</p> <p><i>The strategy chosen at any point in time will depend on the following predictions which are to be made using the best forecast rainfall and stream flow information available at the time:</i></p> <ul style="list-style-type: none"> <li>• <i>Maximum storage levels in Wivenhoe and Somerset Dams.</i></li> <li>• <i>Peak flow rate at the Lowood Gauge (excluding Wivenhoe Dam releases).</i></li> <li>• <i>Peak flow rate at the Moggill Gauge (excluding Wivenhoe Dam releases).</i></li> </ul> <p>Our understanding is that the actual values are used to select W1 to W4 with some variations allowed for based on forecasts. e.g. You transition from W1 to W2 or W3 once the water level in Wivenhoe exceeds EL 68.5m. The choice between W2 and W3 is made on the forecast of the peaks depending on whether the Lowood or the Moggill flows control.</p>	<p>Section 8.4 states:</p> <p>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:</p> <ul style="list-style-type: none"> <li>• Maximum storage levels in Wivenhoe and Somerset Dams.</li> <li>• Peak flow rate at the Lowood Gauge (excluding Wivenhoe Dam releases).</li> <li>• Peak flow rate at the Moggill Gauge (excluding Wivenhoe Dam releases).</li> </ul>

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Exhibit Number: 399

No. in Annexure 19	Suggestion by DERM (Annexure 18 and 19 to Statement of Ronald Guppy)	Final version of Seventh Revision of Wivenhoe Flood Mitigation Manual (Exhibit 21)
4	<p>From this perspective, it may be better to change the figure on page 27 to something along the following lines.</p> <p style="text-align: center;">Wivenhoe Flood Strategy Flow Chart</p> <pre> graph TD     Start([Start]) --&gt; Q1{Is Wivenhoe level greater than EL 68.5 m?}     Q1 -- No --&gt; W1([Use Strategy W1])     Q1 -- Yes --&gt; Q2{Is Wivenhoe level greater than EL 74.0 m?}     Q2 -- Yes --&gt; W4([Use Strategy W4])     Q2 -- No --&gt; Q3{Is forecast maximum flow at Lowood likely to exceed 3,500 m³/sec?}     Q3 -- Yes --&gt; W3([Use Strategy W3])     Q3 -- No --&gt; W2([Use Strategy W2])   </pre>	<p>Flow chart on page 23:</p> <p style="text-align: center;"><b>WIVENHOE FLOOD STRATEGY FLOW CHART</b></p> <pre> graph TD     Start([START]) --&gt; Q1{Is Wivenhoe level likely to exceed EL 68.5 m?}     Q1 -- NO --&gt; W1([Use Strategy W1])     Q1 -- YES --&gt; Q2{Is Wivenhoe level likely to exceed EL 74.0 m?}     Q2 -- YES --&gt; W4([Use Strategy W4])     Q2 -- NO --&gt; Q3{Is the maximum flow at Lowood likely to be less than 3500 m³/s AND the maximum flow at Moggill likely to be less than 4000 m³/s?}     Q3 -- YES --&gt; W2([Use Strategy W2])     Q3 -- NO --&gt; W3([Use Strategy W3])   </pre>

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5	All W strategies should refer to actual levels and flows and not the predicted levels and flows. Then W4A and W4B can be differentiated based on Predicted Maximum Lake Level.	<p>Conditions for Strategy W1, p24: Wivenhoe Storage Level predicted to be less than 68.50 m AHD</p> <p>Conditions for Strategy W2, p27: Wivenhoe Storage Level predicted to be between 68.50 and 74.00 m AHD</p> <p>Conditions for Strategy W3, p28: Wivenhoe Storage Level predicted to be between 68.50 and 74.00 m AHD</p> <p>Conditions for Strategy W4, p29: Wivenhoe Storage Level predicted to exceed 74.00 m AHD</p> <p>Strategy W4A, p29: Lake Level between 74.0 and 75.5 m AHD</p> <p>Strategy W4B, p30: Lake Level greater than 75.5 m AHD</p>
5	I think there needs to be another criterion under Procedures W2 and W3 of not less than 1900 m <sup>3</sup> /s given for the target maximum flows. Otherwise if for example the natural peak flow at Lowood excluding Wivenhoe releases was only 1000 m <sup>3</sup> /s that becomes the target maximum flow there.	No minimum flow rate under Strategy W2 or Strategy W3: p27, 28.

No. in Annexure 19	Suggestion by DERM (Annexure 18 and 19 to Statement of Ronald Guppy)	Final version of Seventh Revision of Wivenhoe Flood Mitigation Manual (Exhibit 21)
5	It may also be useful to specify that the peak outflow should not exceed the peak inflow (i.e the total inflow into Wivenhoe including Somerset outflows).	Not specified in Strategy W2 or Strategy W3: p27, 28.
7	<p>The inclusion of the large Table in section 8.6 is not necessarily helpful and likely to be confusing. It is only really applicable for the loss of communications strategies. I am happy with the target of getting all the gates open before the first fuse plug triggers but while there are communications with the Flood Operations Centre, the gate opening rates are set by the Flood Operations Engineer.</p> <p>Under normal circumstances, gate operation is not dependent on storage level until EL 74 is exceeded. It is solely based on a discharge. The Table suggests otherwise.</p> <p>Even after EL 74 is reached the strategy is to open gates at minimum intervals until the water level begins to fall. That also is inconsistent with the Table.</p> <p>All that is needed in Section 8.6 is the order of gate operation.</p>	Large table still present in section 8.6, p33, 34, 35.
Two dot points from bottom of document	In the title of the figure on page 40 'Strategy S2' should be removed - it applies to S3 as well.	Title of figure on p40: Strategy S2 – Wivenhoe / Somerset Operating Target Line