

1. Section 3.2 last para: The statements for the AEP of the Somerset floods only apply for the overall Wivenhoe catchment floods. What are the AEPs for the Somerset catchment floods?
2. Section 3.3 middle para: Is the reference to Section 2.6 correct? Shouldn't it refer to Section 2.8 and the use of reasonable discretion?
3. Section 8.4 talks about the strategy being chosen based on predictions, maximums and peaks as below:

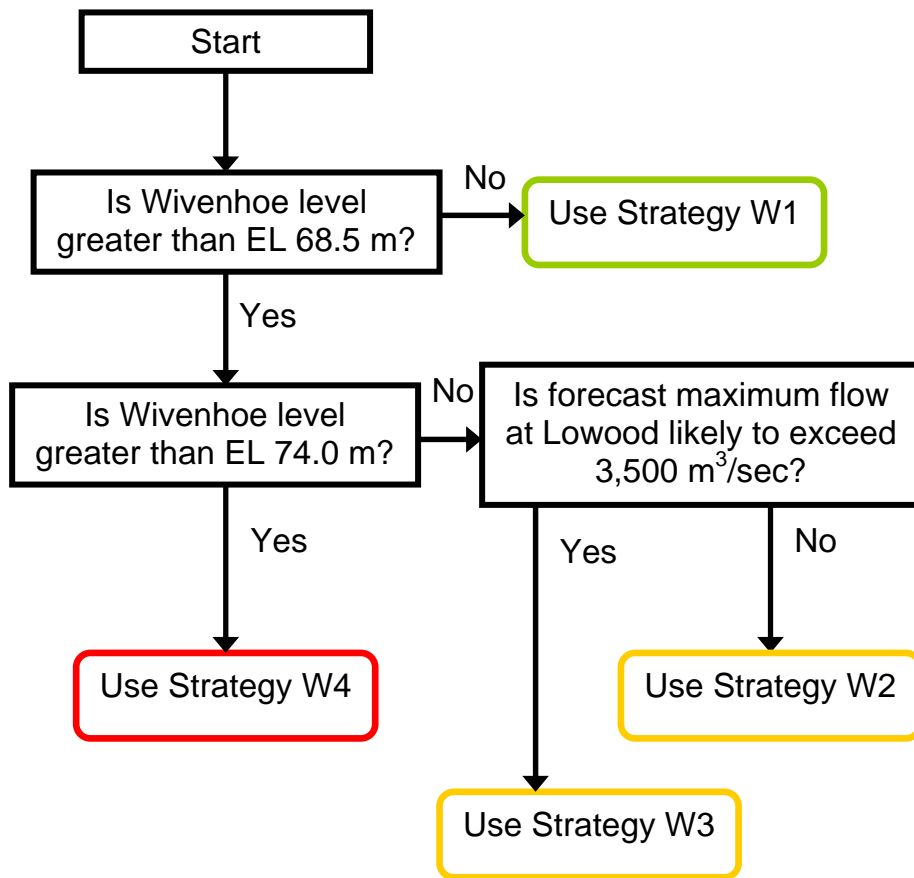
The strategy chosen at any point in time will depend on the following predictions which are to be made using the best forecast rainfall and stream flow information available at the time:

- *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).*

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.

4. From this perspective, it may be better to change the figure on page 27 to something along the following lines.

Wivenhoe Flood Strategy Flow Chart



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.

I think there needs to be another criterion under Procedures W2 and W3 of not less than $1900 \text{ m}^3/\text{s}$ given for the target maximum flows. Otherwise if for example the natural peak flow at Lowood excluding Wivenhoe releases was only $1000 \text{ m}^3/\text{s}$ that becomes the target maximum flow there.

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).

6. Section 8.5 Gate Closing Strategies ... Should you be trying to clear the flood storage above EL 67.0 rather than 67.5?
7. Gate Operation Sequences – Section 8.6
 - The final para of Strategy W4 (before strategy 4A) indicates ‘there are no restrictions on gate opening increments or gate opening frequency once the storage level exceeds 74.0 AHD ...’ but W4A says openings to occur ‘at the minimum intervals’.

- 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.

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.

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.

All that is needed in Section 8.6 is the order of gate operation.

- Strategy S3 for Somerset – When should it be applied? Should it only apply above say EL 102.25? What are the differences between S2 and S3?
- Appendix B Key Reference Gauges – The gauge zero for Lowood is above the 1974 Gauge Height. Is this the case?
- The rating table for Wivenhoe in Appendix C... An annotation needs to be added to identify that part of the data for which the gate will be overtopped (this is to be avoided). You also need to indicate that these are discharges per gate. Also indicate in the Auxiliary Spillway ratings that they only apply once the fuse plugs are triggered.
- You need to make it clear that Case S1 (page 47) applies before each sluice is opened. I.e. If say there are two sluices open with a Somerset headwater above 99.31, an extra sluice is only opened if Wivenhoe is still falling at 10mm/hr. If it is rising, I would expect a sluice to be closed. You then wait the minimum interval before making the next decision.

A few other pretty insignificant suggestions

- The Definitions section has Dam Supervisor but the emergency procedures sections refer to ‘officer in charge’
- ‘Flood Operations Centre’ could be added to the Definitions section
- Section 2.4 last paragraph – 2nd line - there is an ‘and’ which should be ‘an’
- Section 3 – All objectives apart from be at Full Supply Level at the conclusion of the event have a sub-section. Perhaps, to be consistent, we should include an objective to ‘drain the flood storage within seven days of the peak headwater level occurring in the dam ... i.e. Drain Wivenhoe flood storage within seven days of the headwater level peaking in Wivenhoe and drain the Somerset flood storage within seven days of the headwater level peaking in Somerset. One option might be to include it as a sub-set of the first objective to ‘ensure the structural safety of the dams’.

- Section 3.3 Extreme and Closely Spaced Floods is a bit out of place. – see discussion above.
- In the title of the figure on page 40 ‘Strategy S2’ should be removed - it applies to S3 as well.
- Page 44 dot point 2 refers to Somerset Dam. It should be Wivenhoe Dam.