

Timeline of Events, Reviews, Responses and Key Issues of Logan Flood Mapping since 2014

Based on the peer review report and appendices contained in the uploaded RTI documents

Date	Event / Document	Parties Involved	What Occurred	Key Issues / What Was Alluded To
2014	Previous Logan-Albert Flood Study completed	WRM Water and Environment, Logan City Council	Regional flood modelling completed under ARR1987 guidance.	Later peer reviews repeatedly compare 2020 outcomes against this study because the new model produced significantly higher flood levels.
2017	Ex-TC Debbie flood event	Logan-Albert catchment communities	Major flood event occurred providing new calibration data.	The event became a central justification for recalibrating the flood model and updating bathymetry.
March 2019	Council tenders flood study update	Logan City Council	Council sought tenders for the Logan-Albert Flood Study Update.	The study aimed to incorporate ARR2019 guidance, LiDAR updates and revised modelling techniques.
April 2019	Project awarded	WRM Water and Environment	WRM awarded the flood study update project.	WRM became lead consultant for hydrology and hydraulic modelling.
May 2019	Independent peer reviewer appointed	Water Technology Pty Ltd, Logan City Council	Water Technology (WT) appointed as independent peer reviewer.	Peer review was required to run parallel with the project and all recommendations were expected to be addressed before milestone submissions.
13 June 2019	WRM Milestone 1 memorandum issued	WRM	WRM submitted hydrologic and hydraulic model schematisation assumptions.	Formed basis of Peer Review 1.
24 July 2019	Peer Review 1 completed	Water Technology	WT reviewed hydrology and hydraulic schematisation.	WT generally supported the methodology but raised concerns regarding: sub-catchment boundaries, additional gauge usage, hydraulic boundary extensions, model stability, missing structures and consistency between fast and detailed models.

24 July 2019	Key recommendation – additional gauges	WT to WRM / Council	WT recommended more rainfall and stream gauge usage.	WT alluded to uncertainty in calibration reliability if all available rainfall information was not incorporated.
24 July 2019	Key recommendation – model boundaries	WT	WT questioned whether requested upstream model extensions had been included.	Suggested possible incomplete representation of flooding behaviour and PMF flow paths.
13 September 2019	WRM calibration report issued	WRM	Detailed calibration report produced for 1974, 1990, 2013 and 2017 flood events.	Became basis for Peer Review 2.
1 October 2019	Peer Review 2 completed	WT	WT reviewed calibration models and methodology.	WT stated calibration outcomes were “generally acceptable” but identified major uncertainties and documentation gaps.
1 October 2019	Concern raised about land use parameters	WT	WT questioned roughness and imperviousness assumptions.	WT identified sub-catchment AR006 as having unrealistic imperviousness (83%) and unusually low Manning’s roughness for a rural/forested area.
1 October 2019	Concern raised about rainfall allocation	WT	WT found inconsistencies in temporal rainfall pattern assignment.	WT repeatedly stated the methodology for rainfall gauge allocation was unclear and inconsistent between neighbouring catchments.
1 October 2019	Concern raised about gauge reliability	WT	WT questioned rating curves at Round Mountain gauge.	WT suggested flood discharges may be underestimated because rating curves did not adequately represent overbank flow areas.
1 October 2019	Concern raised about fast vs detailed models	WT	WT identified substantial water level differences between 20m and 10m models.	WT warned that coarse grid models may misrepresent levees and floodplain behaviour, especially in middle Logan floodplain areas. Differences up to 0.7m in

				terrain representation and 0.45m in flood levels were identified.
1 October 2019	Concern raised about blockages and culverts	WT	WT reviewed culvert blockage assumptions.	WT noted inconsistent blockage factors and possible errors in culvert representation across calibration events.
10 October 2019	WRM formal response to WT	WRM	WRM responded to peer review concerns.	WRM acknowledged some temporal pattern inconsistencies and agreed some corrections would be made.
10 October 2019	WRM states extra pluviograph data not included	WRM, Logan City Council	WRM stated additional BOM flood warning pluviograph data had not been supplied by Council.	WRM indicated inclusion of extra rainfall data would constitute a project variation. This subtly shifted responsibility toward Council scope/data supply.
10 October 2019	WRM explains bathymetry methodology	WRM	WRM clarified bathymetry and z-shape usage.	WRM acknowledged LiDAR limitations due to vegetation and standing water.
29 October 2019	Additional Peer Review memo issued	WT	WT reviewed WRM's response memo.	WT maintained concerns regarding rainfall allocation methodology and adequacy of rainfall data inclusion.
29 October 2019	WT escalates rainfall concerns	WT	WT stated inclusion of all rainfall data was "critical".	WT recommended re-assessment of Thiessen polygon allocations and potentially re-running calibration events depending on results.
29 October 2019	WT states uncertainty still exists	WT	WT stated there remained "significant uncertainty" around temporal pattern assignment.	This is one of the strongest statements in the peer review trail because it indicates unresolved methodological uncertainty in rainfall distribution assumptions.

29 October 2019	WT requests raw DEM and bathymetry data	WT to WRM	WT requested underlying DEM, bathymetry surfaces and cross sections.	Indicates peer reviewer had not yet received sufficient underlying data to fully verify model construction.
29 October 2019	WT questions rating curve methodology	WT	WT noted calibration relied largely on DNRM/BOM curves.	WT suggested hydraulic-model-derived rating curves could reveal discharge errors and improve rigour.
18 February 2020	Peer Review 3 issued	WT	WT reviewed selective design event modelling.	WT generally supported methodology but noted lack of supporting documentation limited review capability.
10 March 2020	WRM response to Review Point 3	WRM	WRM responded to design modelling comments.	WRM clarified queries and made some hydrology changes.
24 March 2020	Draft Flood Study report issued	WRM	Full draft flood study and GIS mapping released.	Triggered extensive Peer Review 4 assessment.
30 April 2020	Peer Review 4 issued	WT	WT completed extensive review of draft study and GIS maps.	WT identified “considerable increases in peak flood levels” compared with the 2014 study and described this as concerning for development control implications.
30 April 2020	Major concern over higher flood levels	WT	WT stated flood level increases required separate critical review before adoption.	WT alluded to serious implications for existing development approvals, building floor levels and future planning decisions.
30 April 2020	WT recommends separate discharge review	WT	WT recommended independent review of all design discharge estimates.	WT implied uncertainty in whether the revised flood estimates were fully justified and adequately supported.
5 May 2020	Consolidated peer review report issued	WT	Final peer review summary prepared.	WT explicitly stated the project was “not complete” and that not all peer review matters had been addressed.

5 May 2020	WT states study should not yet be finalised	WT	WT recommended further works before adoption.	WT stated the matters “must be addressed before the project can be finalised and subsequently adopted by Council.”
May 2020	Outstanding matters remained unresolved	WT, WRM, Council	No response yet received from WRM for Peer Review 4 at time of report completion.	Indicates the peer review process itself remained unfinished when the consolidated report was published.

Key Themes Emerging Across the Timeline

1. Persistent uncertainty around rainfall inputs

WT repeatedly questioned:

- rainfall gauge selection,
- temporal pattern allocation,
- missing pluviograph data,
- and Thiessen polygon methodology.

This issue appears in:

- July 2019,
- October 2019,

- and again late October 2019.
WT described inclusion of all rainfall data as “critical.”

2. Concerns about model consistency

Repeated references were made to:

- differences between 20m “fast” and 10m “detailed” models,
 - missing levee representation,
 - inconsistent flood levels,
 - and topographic sensitivity.
- WT warned these differences could materially affect flood behaviour outcomes.

3. The peer reviewer did not consider the study finalised

The strongest concluding statements are:

- “not all peer review matters have been addressed,”
- “project is therefore not complete,”
- and further works “must be addressed before” adoption.

4. Major implications for planning and development control

WT repeatedly alluded to:

- compromised historical approvals,
- changed flood planning levels,
- and substantial impacts on development control across the catchment.