Memorandum

To: Cameron Hodgson - Ridgeburn Ltd
[redacted]

From: Pranil Wadan - Director, Flowstate Consulting LP

Date: 3 Mar 2026

Subject: Ridgeburn Flood Peer Review Memo

Revision: 2.0

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1. Purpose and scope of review

This memo provides a peer review of the hydraulic modelling undertaken to assess flood impacts of the proposed development at 122 Morven Ferry Road. The peer review has been undertaken based on the flood models issued to Flowstate Consulting by McKenzie & Co alongside the following reports:

- Basis of Modelling for Ridgeburn Flood Model (Rev A) - dated 10-11-2025
- Stormwater Mitigation Report (Rev A) - dated 10-11-2025

Following the initial model review, a further review of the final reporting (Stormwater Mitigation Report (Rev A) 24-02-2026) was also undertaken. This included checking that the modeller addressed the model review queries raised during the peer review process.

The peer review focuses on the model approach, setup, scenarios and events assessed, key inputs (including roughness, imperviousness, and losses), sensitivity testing, and the appropriateness of the model outputs.

This peer review form should be read in conjunction with the flood model review form which can be found in Appendix A of this memorandum.

2. Model Overview

A hydraulic model was developed in TuFLOW using two hydrological approaches:

- **Rain-on-grid (RoG)**, a standard approach for assessing pluvial flooding response across the catchment/model domain.

- **Lumped hydrological inflows**, applied as inflows within the model domain (post-development file listed as “LBC”).

Meteorological inputs incorporate climate change scenarios for RCP 6.0 and RCP 8.5, and are in accordance with QLDC and ORC requirements. The downstream boundary is a normal depth (normal slope) boundary, with a 1% slope towards the Arrow River.

The modelled events include 50%, 10%, 1%, and 0.5% AEP for both existing (pre-development) and post-development scenarios, with additional blockage sensitivity testing (50% to 100%) applied at proposed culverts.

3. Model Build

Table 1: Model configuration summary

Item	Description
Software	TUFLOW (latest version stated)
Domain area	Approx. 8 km²
Grid approach	Quadtree with variable cell size
Cell size range	1.5 m to 6 m
Terrain representation	SGS enabled; no terrain modifiers used
Boundary condition	Normal slope boundary, 1% towards Arrow River
Drainage representation	Post-development includes 1D storm pipe and culvert network outlet to river (east)
Inlets	'Q' type pits with defined rating curves
Existing ponds	Represented via initial water level(s)

Table 2: Events and scenarios assessed

Scenario	Hydrology method	Events modelled	Sensitivity tests / Assessments
Existing (pre-development)	RoG	50%, 10%, 1%, 0.5% AEP	N/A
Post-development	RoG	50%, 10%, 1%, 0.5% AEP	Blockage 50% and 100% (at culverts)
Post-development	Lumped inflows (LBC)	50%, 10%, 1%, 0.5% AEP	Blockage 50% and 100% (at culverts)

The following should be noted with regards to the Scenario representation:

- The existing scenario is represented as "as-is" and described as having no cross-drainage structures.

- Post-development scenario includes a proposed storm pipe and culvert network with discharge to the river to the east.
- The proposed layout is represented through changes to Manning's n and impervious coverages, directing runoff towards the stormwater network.

5. Model Scenarios

Table 3: Input model files provided

Input model file	Hydrology method	Scenario	Events	Notes
EX01_ROG_e1_e2_001.tcf	Rain-on-grid	Pre - Development (Existing)	50%, 10%, 1%, 0.5% AEP	Default n stated as 0.06
PD01_ROG_e1_e2_001.tcf	Rain-on-grid	Post-development	50%, 10%, 1%, 0.5% AEP	Roughness + imperviousness changes (Table 4), blockage tests
PD01_LBC_e1_e2_001.tcf	Lumped inflows	Post-development	50%, 10%, 1%, 0.5% AEP	Roughness + imperviousness changes (Table 4), blockage tests

6. Roughness and imperviousness assumptions

Table 4: High-level Manning's n and impervious changes by scenario (as provided)

Scenario file	Manning's n changes	Fraction impervious changes	Blockage tests
EX01_ROG	Default n = 0.06	Not provided	Not stated
PD01_ROG	Lots n = 0.10, Roads n = 0.03, Reserve n = 0.06	Lots 0.70, Road 0.70, Reserve 0.10	50% and 100%
PD01_LBC	Lots n = 0.10, Roads n = 0.03, Reserve n = 0.06	Lots 0.70, Road 0.70, Reserve 0.10	50% and 100%

Table 5: Material parameters (Manning's n and fraction impervious) as extracted from model inputs

Material ID	Description	Manning's n	Fraction impervious
1	Buildings	0.10	1.00
2	Built-up Area (settlement)	0.06	0.10
3	Deciduous Hardwoods	0.07	0.00
4	Depleted Grassland	0.06	0.00
5	Driveway	0.035	0.45
6	Exotic Forest	0.10	0.00
7	Forest - Harvested	0.10	0.00
8	Gorse and/or Broom	0.06	0.00
9	Gravel and Rock	0.05	0.50
10	High Producing Exotic Grassland	0.06	0.00
11	Hill	0.035	0.15
12	Indigenous Forest	0.10	0.00
13	Lake or Pond	0.06	1.00
14	Landslide	0.04	0.00
15	Low Producing Grassland	0.06	0.00
16	Manuka and/or Kanuka	0.06	0.00
17	Matagouri or Grey Scrub	0.06	0.00
18	Mixed Exotic Shrubland	0.06	0.00
19	Orchard, Vineyard or Other Perennial Crop	0.06	0.10
20	Pads	0.035	0.50
21	River	0.06	1.00

22	Road	0.03	0.90
23	Road Parcel	0.03	0.70
24	Short-rotation Cropland	0.06	0.00
25	Urban Parkland/Open Space	0.06	0.00
26	Proposed Commercial	0.10	1.00
27	Proposed Lots	0.10	0.70
28	Proposed Road	0.03	0.70
29	Proposed SW Reserve	0.06	0.10
30	Reserve	0.06	0.00
31	Proposed Carpark	0.03	1.00

7. Losses and infiltration

Losses are represented using the SCS Curve Number method, with CN = 74 representing pasture / lightly grazed conditions. The same CN is applied across the full model domain.

Table 6: Loss model summary

Item	Value / approach
Method	SCS Curve Number
Curve Number	74
Spatial variation	Uniform across whole model
Basis (as stated)	Pasture / lightly grazed

8. Outputs and mapping conventions

The model outputs include standard XMDF mesh outputs and maximum grids for velocity, depth, water level and hazard, plus other outputs. Hazard outputs are stated to be based on the Australian standard. Mapping applies a 0.05 m (50mm) depth cut-off, which is reasonable for screening very shallow flows.

Table 7: Outputs summary

Output	Provided
Format	XMDF mesh file
Max grids	Depth, velocity, water level, hazard
Additional outputs	Other datatypes (not specified)
Hazard standard	Australian standard
Plot outputs	User-defined lines and points for flow, level, velocity at key locations
Mapping cut-off	0.05 m depth

9. Conclusion

Based on the information provided, the TUFLOW model is fit for purpose for assessing flood impacts under existing and post-development conditions.

The modelling framework includes a standard rain-on-grid approach, appropriate representation of post-development drainage, climate change scenarios (RCP 6.0 and RCP 8.5), and a range of modelled scenarios have been assessed that the 50%, 10%, 1%, and 0.5% AEP events, including blockage sensitivity testing.

The use of quadtree meshing with SGS, scenario management, and standard output products, including hazard mapping, is consistent with current best practice.

Appendix A

Peer Review Model Form

Ridgeburn (122 Morven Ferry Junction Road) Flood Model Peer Review

INSTRUCTION NOTES:

Project: **Ridgeburn (122 Morven Ferry Junction Road)**

Model Input Files		**Scenario**
	EX01_ROG_~e1~_~e2~_001.tcf	Existing
	PD01_ROG_~e1~_~e2~_001.tcf	Post development
	PD01_LBC_~e1~_~e2~_001.tcf	Post development

1. About FIGURES -- Please note figures should be clearly **labelled** and included the FIGURES tab and **referenced** in the review comments.

2. Traffic Light Rating Scores (0 - no issue, 3 - major issue)

0	= No issue found
1	= Minor issue or non-standard approach, but unlikely to significantly impact on objectives of the study
2	= Some concerns, likely to have an impact on model results
3	= Concerns that may have a significant impact on model results and not meeting the study objectives

A - GENERAL INFORMATION REVIEW

A:1 - Deliverables

Item	Description	Rating Score	Reviewer's Comments	Modeller response
A:1.2	Have all agreed deliverables been provided – Reporting, Model Database, Survey etc.	3	Model data provided, Reports reviewed alongside model: Basis of Modelling for Ridgeburn Flood Model (Rev A) - By McKenzie & Co dated 10-11-2025 Stormwater Mitigation Report (Rev A) - By McKenzie & Co dated 10-11-2025 Note: Stormwater Mitigation Report references HEC Ras model and not TuFLOW model - Update to report recommended	Basis of modelling updated to reference Tuflow
A:1.3	Is the model delivered in the required software version?	0	Yes latest TUFLOW software version	
A:1.4	Are all associated model input files supplied in specified format, i.e. as part of the icmt file or in folders with appropriate naming conversion if using other software.	0	Yes as standard TUFLOW folder and naming structure	
A:1.5	Are all required modelled scenarios included in the deliverable? Does the model database include result files for all the scenarios?	0	Yes,50%,10%,1%,0.5% events runs with 24 hrs duration.	

A:2 - Previous Review Comments

Item	Description	Rating Score	Reviewer's Comments	Modeller response
A:2.1	Confirm that all previous review comments have been incorporated or resolved, if any (such as MEDAR recommendations, etc.). List any that have not, and comment on impact to model usability.	2	Glasswalling at downstream boundary that is close to the site. This has limited impact on the model results.See the tabs for reference	Noted. However, the effect is outside of the assessment area. Fix will be applied following next iteration of model if there are other fix required.
A:2.2	Assess model against any other review recommendations produced during the model development. If there was no formal process for resolving the reviewers comments, then each item should be listed below and a comment made as to whether or not the issue has been resolved, and if it has significant impacts.	0	NA	
A:2.3	Identify and document any agreed divergence from spec and adopted model build process	0	NA	

A:3 - Model Speed and Stability

Item	Description	Rating Score	Reviewer's Comments	Modeller response
A:3.1	Check model simulation period and time steps, including result time steps.	0	timesteps within range	
A:3.2	Comment on run time expected in terms of the catchment size and complexity.	0	run time as expected	
A:3.3	Check model validation errors and warning messages.	2	Model having negative depths at certain locations as given in the log file at the site location. However this is limited to only peak flow and the area is stable during rest of the event.	Blocked scenario has been updated to address instability
A:3.4	Assess model stability i.e. identify time step critical locations. Any apparent issues in model results caused by model instabilities? Is peak impacted by instabilities?	2	Model unstable in blockage run and negative depths at the the peak duration.but general results look reasonable.	Unstability has been fixed, blockage factor was applied at the pipe but not at the inflow pit, thus causing instability.

A:3.5	Review mass balance (<1%, if more than 1%, find out why & whether improvements should be made, discuss with AC if mass balance error cannot be reduced)	0	Model within range of minimum timestep.	

Review Hold Point – if there is any corrective action required as a result of the above – the review is to be halted until the issue is resolved to the satisfaction of the appointed reviewer

B - DETAILS MODEL REVIEW

B:1 - Model Boundary Conditions

Item	Description	Rating Score	Reviewer's Comments	Modeller response
B:1.1	Confirm rainfall values and profiles used are appropriate, and that modelled values are equivalent to what is included in the associated reporting.	0	Two scenarios one with rainfall model and lumped hydrology model applied satisfactorily.	
B:1.2	Assess downstream water levels with reference to coastal marine boundary or other software	0	Downstream boundary applied as normal depth	
B:1.3	Describe and review any inflow boundary conditions	0	Inflow boundary applied from hydrology model from subcatchments.satisfied with boundary application.	
B:1.4	Check how model initial conditions are applied for both 1D and 2D. The use of model features such as initial condition zone for tidal areas and ponds, etc.	0	No initial condition applied in existing scenario,but applied in post development scenario.There are few ponds,but terrain is well represented to have minimum impact of initial water level.	
B:1.5	Check time varying inputs and make sure their start and finish time aligns with simulation setting.	0	Yes, 24hrs duration simulated	
B:1.6	How is climate change applied? Check rainfall and tide boundary	1	The base hydrology is itself applied including climate change uplifts only - RCP 6,and RCP 8.5. No present day scenario (non climate change) modelled.	Yes, assessment is per the QLDC code of practice.

B:2 - Model Catchments

Item	Description	Rating Score	Reviewer's Comments	Modeller response
B:2.1	Review modelled catchment extent. Confirm that it follows contours, and incorporates or excludes any additional primary network which is not consistent with the contours. Any flow transfers across catchment boundaries?	2	Model boundary to extend to the east to follow the creek,this would avoid glass walling	Noted, overall catchment is checked against the hydrological model and are in general accordance.
B:2.2	Subcatchment extents and sizes. Comment on methodology used for subcatchments delineation – is it appropriate, are there any limitations? Any impact on model usefulness.	0	Catchments not provided,but from catchments from report are satisfactorily.	
B:2.3	Spot check subcatchment loading nodes are assigned properly.	0	Yes	
B:2.4	Check hydrological method used	0	Yes,HEC HMS, Rain on Grid	
B:2.5	Identify the curve numbers used in the model. Confirm appropriate use of curve number for pervious land use.	0	Consistent curve number used across the whole model	
B:2.6	Check impervious coverage and compare numbers extracted from model with reported figures. Spot check ED imperviousness using existing impervious layers and aerial photographs – include a screen dump of any issues identified. Review approach for defining MPD.	0	Yes	
B:2.7	Spot check and document time of concentration for catchments, comparing to TP108 graphical calculations.	0	Yes	
B:2.8	Check initial abstraction (Ia) ranges in existing / future scenarios.	0	NA	
B:2.9	Check catchment length, slope and Tc are correctly assigned.	0	Yes	

B:3 - Pipe Networks

Item	Description	Rating Score	Reviewer's Comments	Modeller response
B:3.1	Confirm all critical network and structures are included in model (trunk network, known flooding points, key structures, etc.)	1	Model pipes,culverts are represented in the model. Proposed drawing file not provided	Drawings to be provided
B:3.2	Check if the model extent is suitable for generating floodplains, i.e. does it extend far enough upstream and include all flood prone areas.	0	Yes model covers the study area and extends upstream to include all catchments	
B:3.3	Check asset naming convention. Can model ID be linked to assets in the GIS	1	Not sure of this as drawing files not provided to check	Drawings to be provided
B:3.4	Confirm node/manhole data source flagging and if it is documented for attributes such as lid level, invert level, shaft area, flood type, etc.	0	Yes, Pits and pipes are represented as required	

B:3.5	Confirm pipe asset data source flagging and if it is documented for attributes like shape, diameter / width/ height, material, upstream and downstream inverts, etc.	2	For rectangular culverts,H_contraction coefficient not provided.To have limited impact on the results.	H_contraction of 1 was applied for rectangular culverts
B:3.6	Spot check data entry of asset inspection/survey records for 5 locations	1	Survey / post dev development data not checked	
B:3.7	Spot check node attributes (diameter, shaft area, invert level and lid level) match asset data or are interpolated appropriately.	0	Yes	
B:3.8	Compare node lid levels to LiDAR	0	Q pit levels reasonably matching with Lidar within range of 0.5m.	
B:3.9	Check cover types are appropriate i.e. sealed, stored, 2D, etc.	1	All pits are represented as unsealed ,connected pits with 2d connection.	
B:3.10	Check pipe attributes (diameter, shape, length, material, invert levels) match asset data or are interpolated sensibly	0	Yes	
B:3.11	Check pipe long section and gradient for steep, zero and negative grades.	0	Yes	
B:3.12	Check if continuation pipe is matched using soffit levels	0	Yes	
B:3.13	Ground cover. Identify pipes that have insufficient cover – less than 300mm.	0	All of them have sufficient ground cover	
B:3.14	Identify any network which has decreasing diameters in a downstream direction.	0	Yes	
B:3.15	Check pipe lengths less than 10m, and if any actions required.	0	NA	
B:3.16	Check pipe roughness assumptions appropriate for material and condition	0	Appropriate manning's roughness used	
B:3.17	Check manhole headlosses in the model.	1	Using auto manhole losses from TUFLOW at every node junction	
B:3.18	Check entry and exit losses of pipes and any minor losses caused by bends, side connections or joint defects, etc.	0	No major bends and losses in the model.Automatic losses applied.	
B:3.19	Check natural depression areas or dry pond are modelled with proper outlet configuration i.e. it drains properly after flooding.	0	Ponds modelled as initial water level and 2d flows applied in the model	
B:3.20	How is storage compensation applied to any trimmed network.	0	NA	

B:4 - Channel/Stream Networks

Item	Description	Rating Score	Reviewer's Comments	Modeller response
B:4.1	Are channels modelled appropriately? (in 2D or as 1D river reaches)	0	NA	
B:4.2	In case of burning surveyed cross-sections in 2D, spot check cross-sections from 2D bathymetry compared to the surveyed cross-sections.	0	NA	
B:4.3	Spot check modelled cross-sections and banklines with LiDAR	0	NA	
B:4.4	Is location and spacing between cross sections appropriate? (e.g. maximum dx in MIKE11)	0	NA	
B:4.5	Spot check of modelled cross-sections whether it includes low flow channel.	0	NA	
B:4.6	Spot check data entry of survey records for 5 locations	0	NA	
B:4.7	Identify any topography which may cause instabilities – such as flat sections.		NA	
B:4.8	Review the use of “channel markers” or “new panels”.	0	NA	
B:4.9	Identify if cross sections are drawn properly: - check length and extents sufficient to cover flood flows - any sections which are not perpendicular to the direction of flow. - are sections straight lines? Comment on the impact to the conveyance, and to the model results.	0	NA	
B:4.10	Check locations where flooding extends from the channel to the 2D mesh – comment on merging of 1D/2D representation.	0	NA	
B:4.11	Comment on application of roughness values.	0	NA	

B:4.12	Identify any double counting of volumes, in overland flow paths basins other cross sections	0	NA	
B:4.13	Check gradient for steep, zero and negative grades.	0	NA	
B:4.14	Confirm no double counting of flood storage volumes, at locations such as basins or connection nodes at the ends of channels, , etc.	0	NA	

B:5 - Hydraulic Structures and Control Elements

Item	Description	Rating Score	Reviewer's Comments	Modeller response
B:5.1	Are inlets represented correctly? Do they align with surrounding terrain and have correct inlet control/headloss parameters?	0	Yes.	
B:5.2	Check outlet and/or outfall representations. Do they align with surrounding terrain or connect appropriately with downstream features?	1	Yes,the inlets depression created with z flags are within reasonable limits. As referenced in the model log file message layer	
B:5.3	Check representation of culverts. Shape, number of barrows, inlet/outlet losses, roughness, gradient, etc.	0	Yes	
B:5.4	Review bridges representation: - cross sections - contraction and expansion losses - bridge deck, profile and coefficients - bridge skew - bridge opening, gradient, inlet and outlet losses - bridge piers or other obstructions	0	No bridges modelled	
B:5.5	Check representation of storages, depressions, dams or constructed ponds: - stage storage relationship - any controls - inlets and outlets - initial or permanent water levels - overtopping arrangements (single level or irregular shape; weir coefficients; 2D mesh / breaklines);	2	Ponds represented as initial water level in post dev scenario,but not in existing case/pre development scenario	The pond with initial water level is for a proposed constructed wetland with a dead storage (represented by IWL). IWL does not apply to pre-dev scenario.
B:5.6	Check pump configurations. On/off levels, pump type, pump curve, pump controls, etc.		NA No pumps required	

B:6 - Other Asset Features

Item	Description	Rating Score	Reviewer's Comments	Modeller response
B:6.1	Soakage modelling methods and representation in the model.		NA	
B:6.2	How is the soakage outlet capacity modelled. The assumptions, e.g. ARIs, etc.		NA	
B:6.3	Review the use of weir units in the model. Comment on the weir representation and coefficients used		NA	
B:6.4	Review the use of orifice units in the model, comment on the associated coefficients applied.		NA	
B:6.5	Check representation of tunnels/underpasses		NA	

B:7 - 1D Overland Flow Paths

Item	Description	Rating Score	Reviewer's Comments	Modeller response
B:7.1	Modelled overland flow paths locations and downstream connectivity.	1	NA	
B:7.2	Comment on application of roughness values applied to 1D overland flow paths.	0	NA	
B:7.3	Review section shape for 1D overland flow paths		NA	
B:7.4	Check OLFP gradient and levels	0	NA	

B:8 - 2D Model Components

Item	Description	Rating Score	Reviewer's Comments	Modeller response
B:8.1	Review 2D extent and mesh sizes (any terrain sensitive meshing, and no extremely large or small meshes) Are mesh sizes appropriate at inlets and outlets.	0		
B:8.2	How have building footprints been represented	0	Represented as high manning's roughness.reasonable in a sparsely built environment.	
B:8.3	Review DEM and identify if any errors in DEM, e.g. around buildings	0	DEM reasonable	

B:8.4	Check representation of any key obstructions	2	Hydraulic structures represented as culverts as post development scenario. No hydraulic structures (culverts,pipes) present in the existing scenario	Correct, no hydraulic structure in pre-dev as inspected by the topo data, council data and site inspection
B:8.5	Check roughness zones and values	0	Yes	
B:8.6	Review and check double countings between 1D and 2D model components. For example 2D cells not blocked out where flow is represented in 1D.	0	NA	
B:8.7	Check 1D/2D interface and coupling method is appropriate. Check appropriate 1D/2D connections are applied at 2D nodes, inline banks, river reach banks, etc. E.g. appropriate Qmax at 2D manhole, RESERVOIRHEIGHT= 100m, M21_AS_GROUNDLEVEL=0 in dhiapp.in file	0	NA	

C - MODEL RESULTS REVIEW

C:1 - Model Results Check

Item	Description	Rating Score	Reviewer's Comments	Modeller response
C:1.1	Have all events been simulated and results provided?	2	Yes,Blockage results not provided as log file shows instability	Log files for BL01 updated reflecting the latest run
C:1.2	All correct input data assigned to the run file for each simulation? and check simulation start and stop times.	0	Yes,Blockage results no provided as log file shows instability	
C:1.3	Check if flow, level and velocity are within reasonable range for pipes. - Identify Pipes with velocities >6m/s; - Check if inlet control should be included.	0	Yes	
C:1.4	Check if flow, level and velocities are within reasonable range for overland flow paths, open channels and floodplain	0	Yes	
C:1.5	Is there any depression area or ponding not drained at the end of simulation? Check outlet configuration for depression.	0	Yes	
C:1.6	Are predicted losses at manhole and pipe connections within reasonable range and as expected?	0	Yes, from mhc_check file	
C:1.7	Are predicted losses at inlet and outlet within reasonable range and as expected?	0	Yes	
C:1.8	Culvert Performance: - Is culvert operating as expected? Headlosses within reasonable range. - Is flow limiting observed for 1D/2D connection at inlet/outlet? - Spot Check with HY8 and manuals calcs at least 2 locations, more maybe required if model includes large number of culverts.	1	Yes,instability at peak flow.But stable during majority of model run	
C:1.9	Bridge Performance: - Is bridge operating as expected? - Are contraction and expansion losses within reasonable range.	0	NA	
C:1.10	Check if 1D / 2D flow transfers as expected. Any location with significant instabilities, unexpected headloss or flow limiting.	0	Yes	
C:1.11	Check if pump operation as expected		NA	

C:2 - Model Validation

Item	Description	Rating Score	Reviewer's Comments	Modeller response
C:2.1	Compare graphical and modelled peak flows at a range of key locations, comment on any significant differences, and the impact on model predicted flows.	2	Comparison assessment between lumped analysis and rain on grid not shown in the report. Recommended that this is presented in the final / updated report	
C:2.2	Check if overall flood extent sensible. Compare new flood extent with any previous floodplains.	0	Yes	
C:2.3	Validation against RFS records, anecdotal evidence?	2	NA - No detailed flood maps available for catchment, comparison to be made where flood maps are available and address in report as required.	
C:2.4	Validation against gauged data or flood surveys?		Has not been undertaken, Recommend that validation to be undertaken where information is available.	

D - ADDITIONAL CHECKS

D:1 - Additional Check Items

Item	Description	Rating Score	Reviewer's Comments	Modeller response

D:1.1	Does the model report provides adequate documentation on: - project objectives and purpose; - data analysis and model schematisation; - modelling methodology for key model components - assumptions and limitations.	2	Report reviewed to be updated to address comments / recommendations raised, reviewed report to date does not reference the flood models reviewed.	
D:1.2	If applicable, are options represented adequately with appropriate levels of details? Comment on confidence level based on both model setup and model results.		Yes	
D:1.3	Should any aspects of the model be refined or redone in order to further investigate flooding effects?	0	No	
D:1.4	Which scenarios are modelled? Comment on the adequacy of scenarios modelled for achieving the project objectives	0	Existing scenario ,post development scenario, with range of events . Also comparison with hydrology based model	
D:1.5	Any other assumptions used in the model that may have an impact on the overall model performance and meeting project objectives?	0	NA	
D:1.6	User defined controls for inlet modelling		NA	