



Towradgi Creek and Hewitts Creek Catchments

Floodplain Risk Management Study and Plan

Floodplain Management Committee Meeting 12th April 2018

www.wmawater.com.au

Presenter

Rhys Hardwick Jones

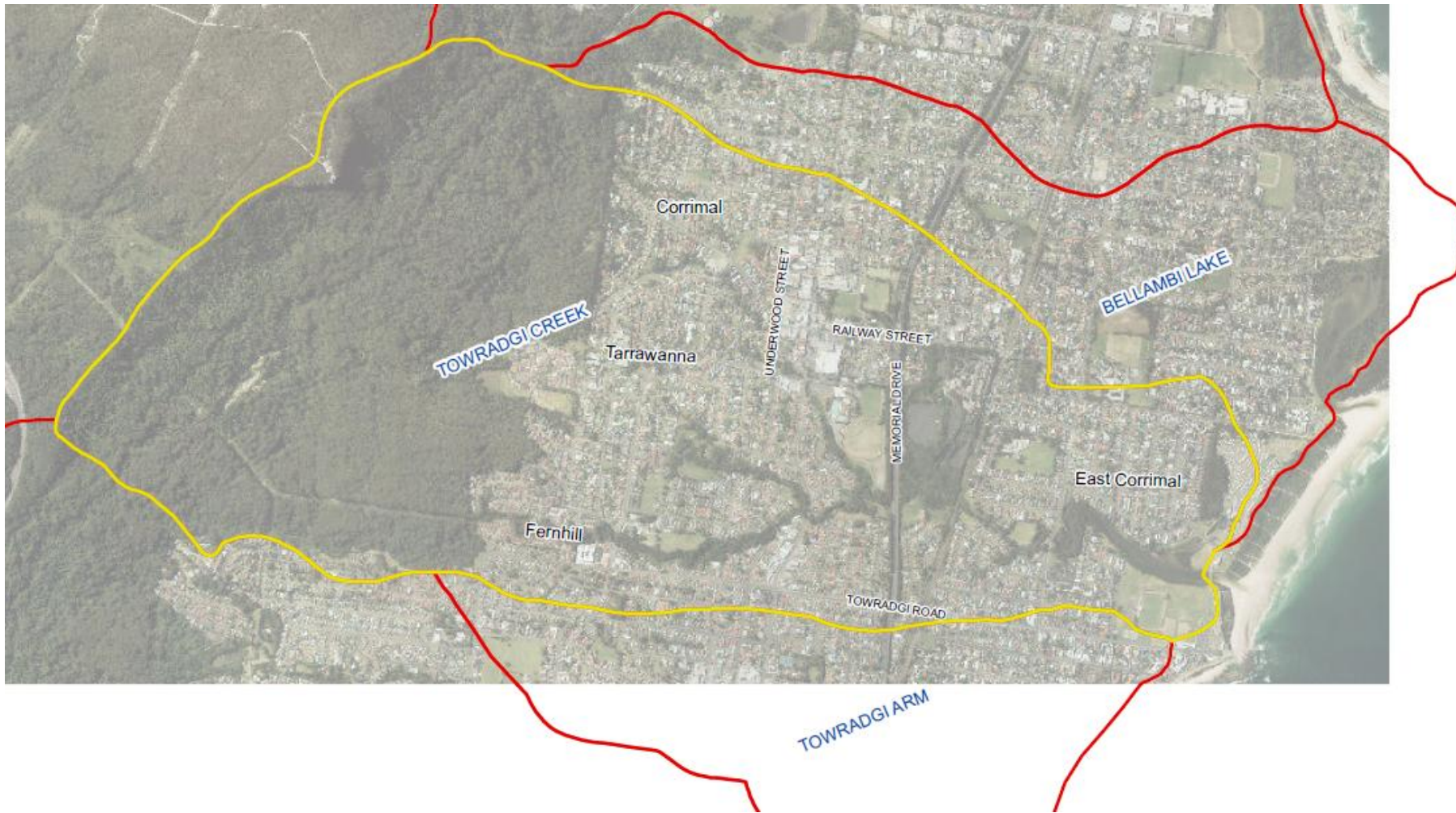
- BE (Hons), MEngSc, MIEAust, RPEQ
- WMAwater – Senior Associate
- > 10 years experience
- Specialises in hydrologic and hydraulic modelling, floodplain management
- Contributed to Australian Rainfall and Runoff revision (modelling guidelines)
- Wollongong Blockage Policy Review



Overview

- Scope of the studies
- Tasks finished so far:
 - Model revisions
 - New development since 2015
 - Blockage policy revisions
- In progress – Australian Rainfall and Runoff 2016 updates
- Subsequent stages

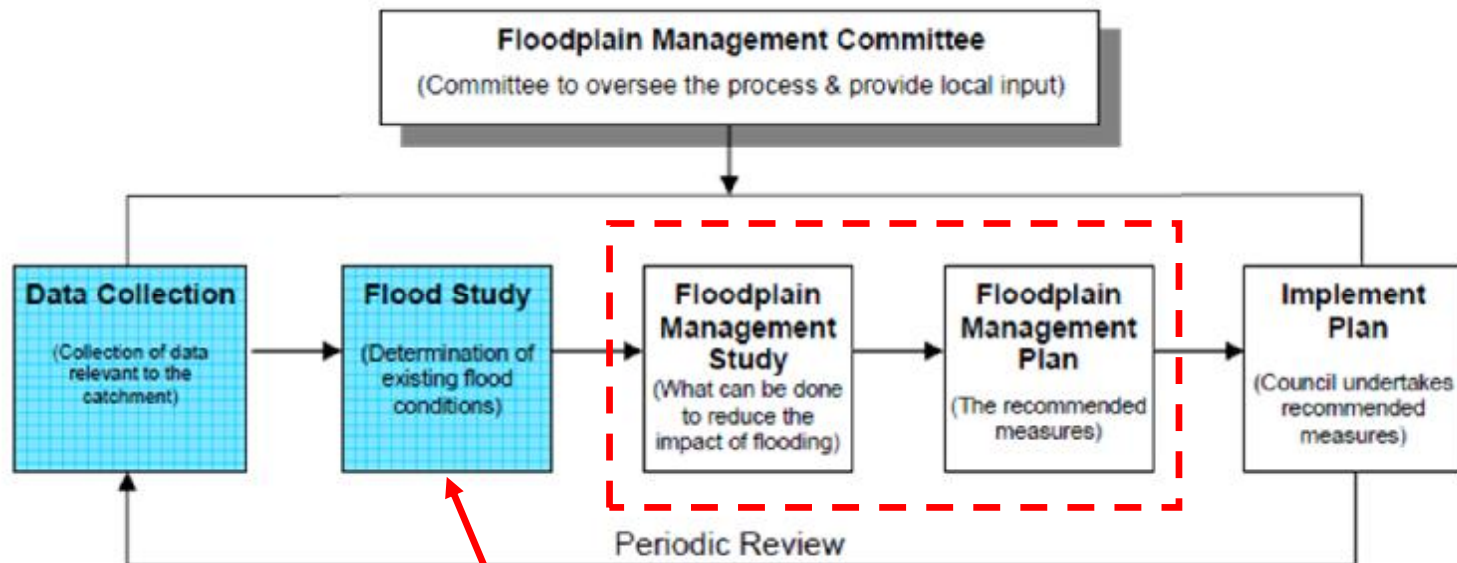
Towradgi Catchment



Hewitts Catchment



Scope of the studies



Updating to include extra model detail, new development, revised blockage policy and ARR2016

Progress to Date

- Data collection and review
- Scenario ID 0, 1 and 2 completed – will present model results tonight
 - Model revisions
 - New development since 2015
 - Blockage policy revisions
- Started on Scenario ID 3 – ARR 2016 Update
 - Revised IFDs
 - Once this stage is completed, Flood Study addendum to be presented to committee.

Scenario ID 0 – Model Refinements

- Involved refinements to the existing model to correct some errors and add more detail
- The scenario just provides a baseline for comparison of other scenarios, so we can know what the effects of each change are

Scenario ID 1 – New Developments

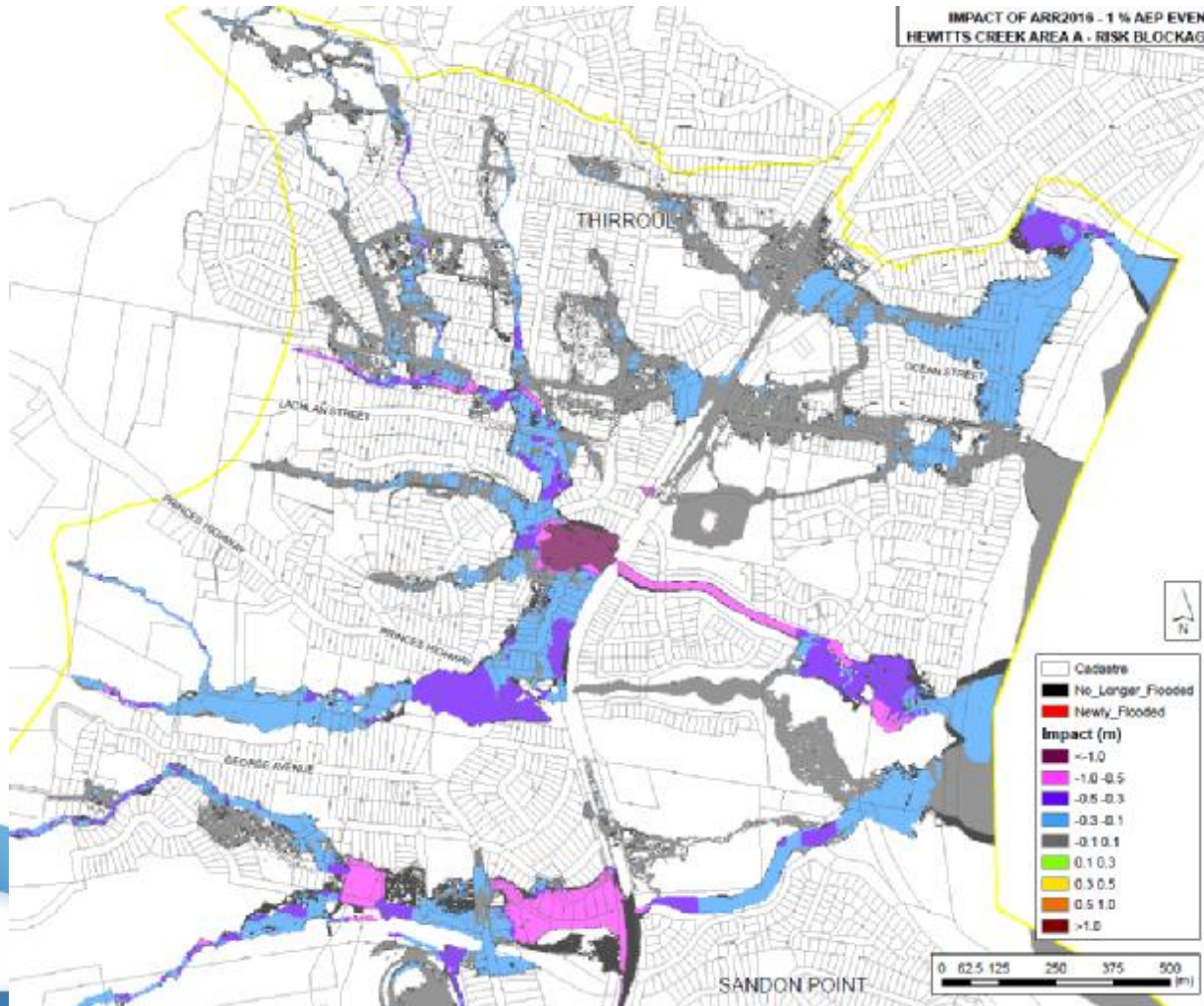
- Includes new development in the catchments since 2015
- Involved two sites for each of the Hewitts and Towradgi catchment
- One of the Hewitts catchment sites was relatively large – model extended
- No significant impact on catchment flood results

Scenario ID 2 – Blockage Policy

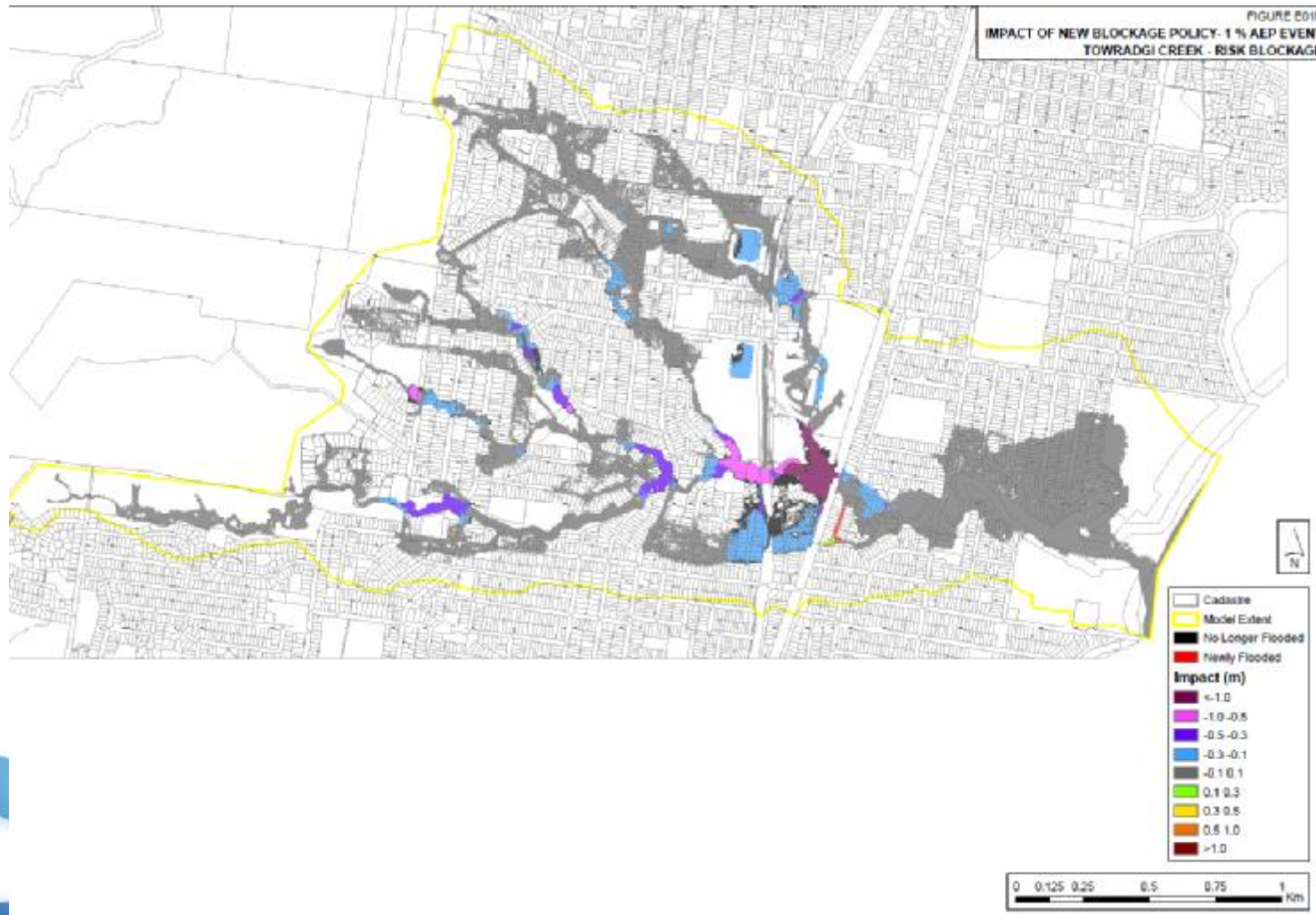


- Includes changes for Scenario 0 and 1, as well as updates for revised Blockage Policy
- Significant changes to modelled flood levels (all reductions)
- Hewitts Catchment
 - Largest reductions at railway line, Lawrence Hargrave Drive
- Towradgi Catchment
 - Largest reductions at railway line, Princes Highway, Memorial Drive, some other locations in upper catchment

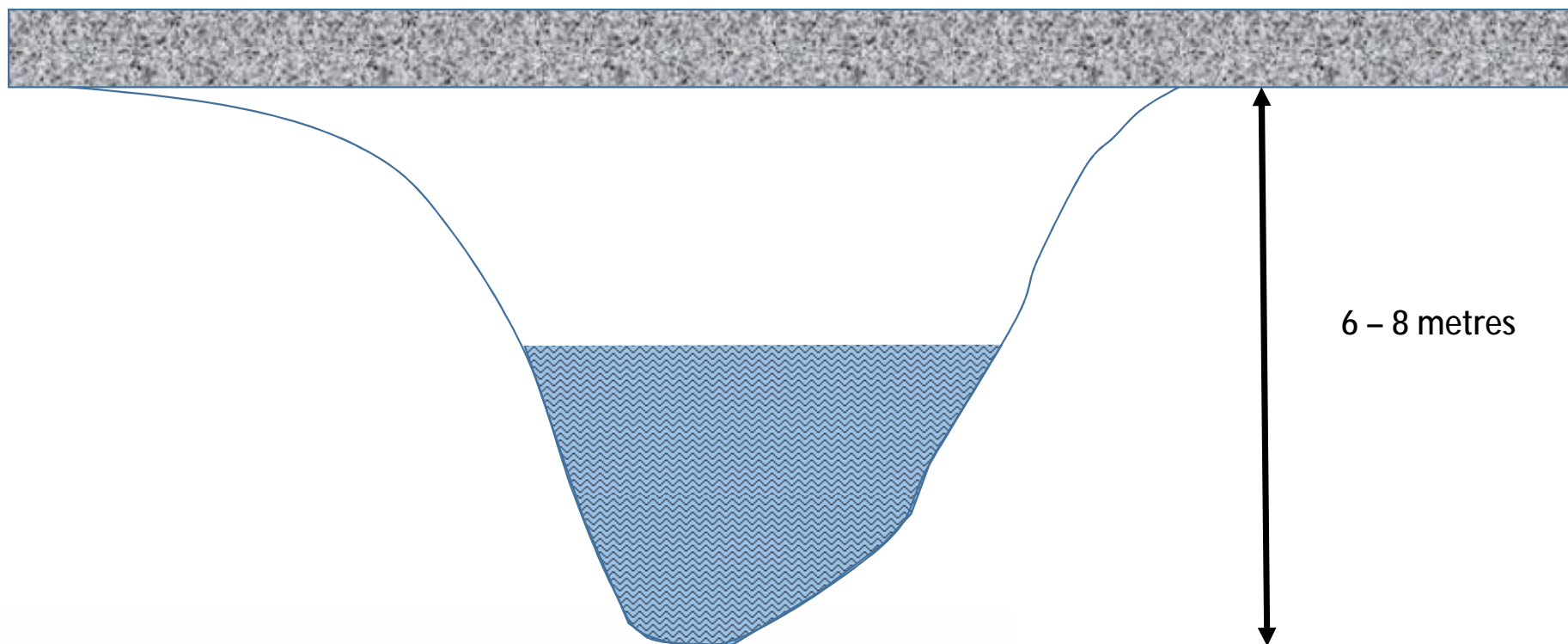
Impacts of Blockage Policy - Hewitts



Impacts of Blockage Policy - Towradgi

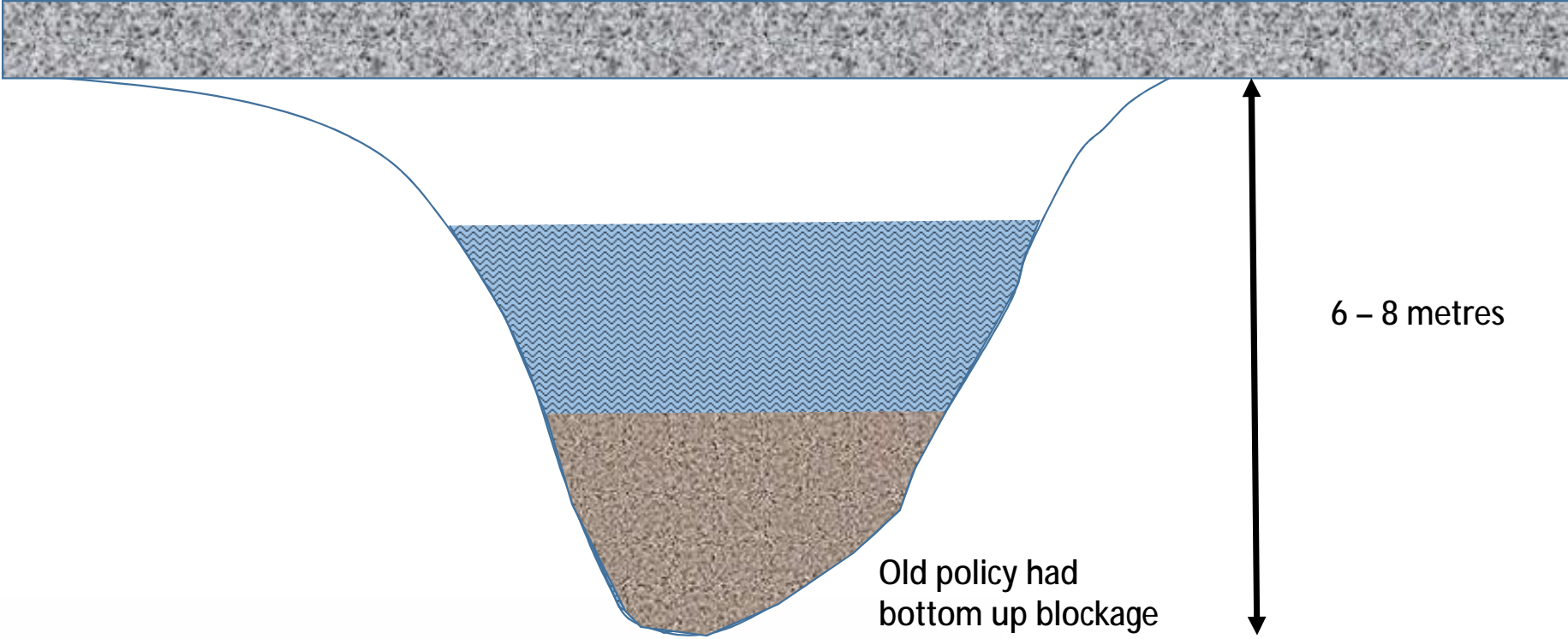


Impacts of Blockage Policy



6 - 8 metres

Impacts of Blockage Policy



Old policy had bottom up blockage for large bridges

Scenario ID 3 – ARR2016 updates

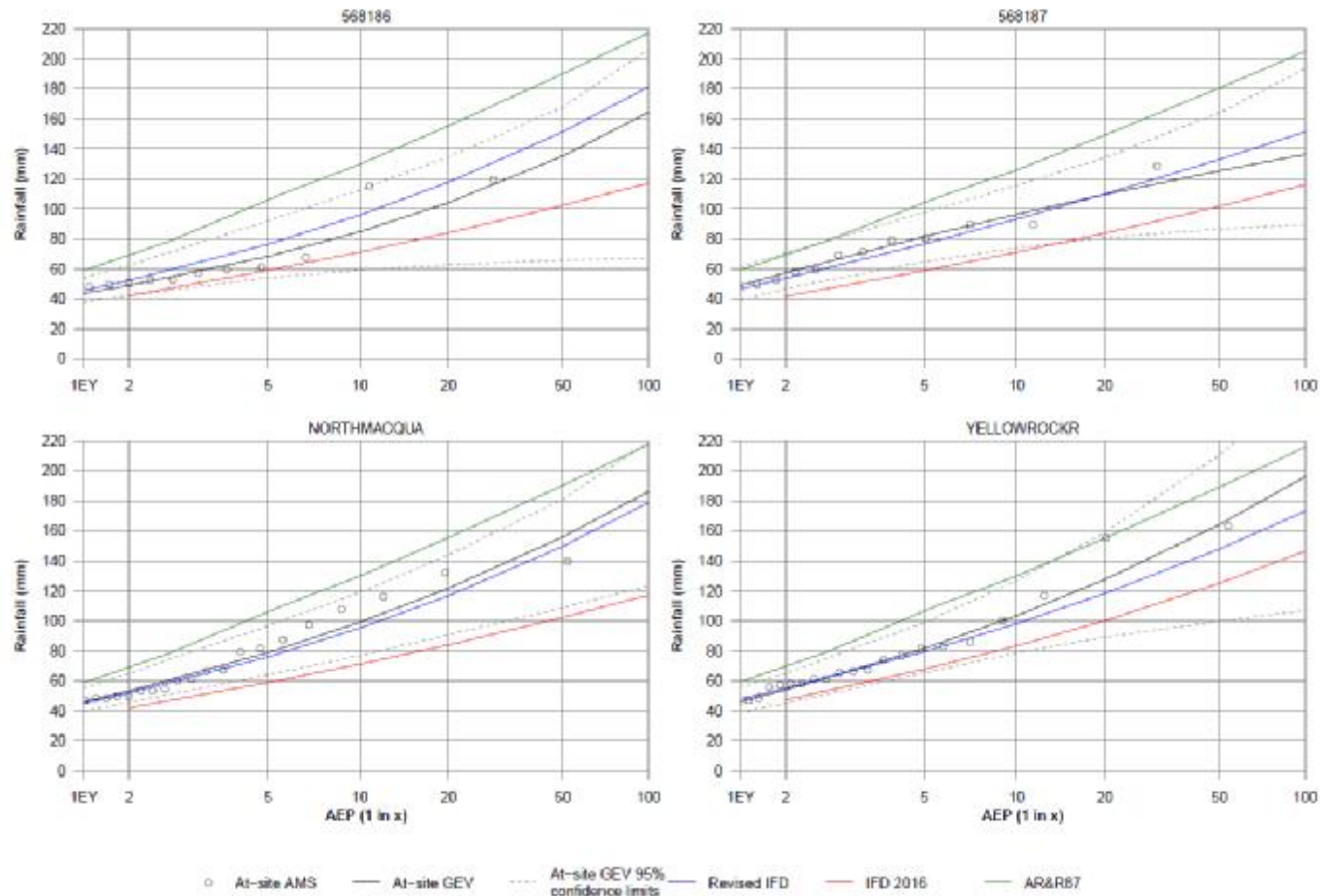


- ARR2016 Methods and Revised IFDs
- IFD issues
 - IFDs issued by the Bureau were not a good match to at-site data in the Wollongong region.
 - They did not account fully for the effect of the escarpment.
 - OEH engaged WMAwater to revise the Bureau IFDs.
 - Used same method but included the influence of the escarpment slope.
 - Produced a much better match to at-site rainfall gauge data.
 - Flood Studies will proceed with the revised IFDs.

Scenario ID 3 – ARR2016 updates



FIGURE 41
SOUTHERN ESCARPMENT STATIONS
3 HOUR IFD COMPARISON



○ At-site AMS — At-site GEV ··· At-site GEV 95% confidence limits — Revised IFD — IFD 2016 — AR&R87

What's Next?

- Complete Flood Study Addendum for presentation to the Committee
- Start on tasks for Floodplain Risk Management Study and Plan
 - Floor level survey and flood damages
 - Investigation of mitigation options
 - Community consultation