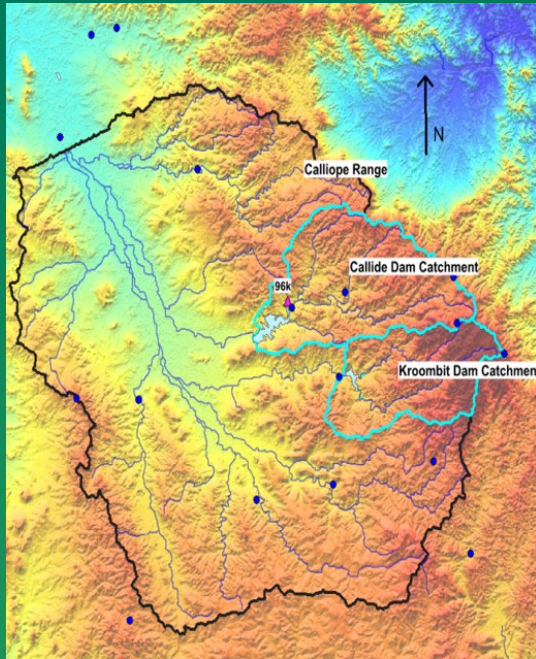


Severe Cyclone Marcia 2015

Cyclone Marcia (Marcia) formed on 18th February 2015 and intensified rapidly, crossing the coast near Shoalwater Bay, Qld. as a rare Category 5 cyclone. (USA Cat.4). Marcia remained a category 3 far inland on 20th February and after several hours of heavy rainfall, intensities increased with around 250mm of rain in 3 hours over the western slopes of the Calliope Range (*Official report*). Multiple flood height records were observed along Bell, Callide, Grevillea, and Kroombit Creeks. Callide (Gated) and Kroombit Dams both observed floods of record. There was significant flood impacts to residential areas and infrastructure throughout Callide Valley.



Callide Valley: Climate Resilience

Resources	Associated Services
<ul style="list-style-type: none"> Rainfall data – official Reservoir data - official Media coverage Papers Official review and submissions 	<ul style="list-style-type: none"> Flood warning systems SFARP and ALARP Dam safety programs Scenario testing and mocks
Value to managing risk in...	Useful to
<ul style="list-style-type: none"> Community safety Community readiness Governance, risk, and compliance Climate disclosure Critical Infrastructure Systems and processes SFARP/ALARP Engineering 	<ul style="list-style-type: none"> Regulators Insurance Dam owners Utilities Engineering Disaster & emergency managers Boards

Event	Impact/Outcome	Larning areas
The Queensland Government withdrew the requirement for dam owners to follow an Emergency Action Plan (EAP), in favour of a requirement to have a plan.	Any test of plan implementation moved to a post event circumstance. (<i>Qld Govt</i>)	SFARP Dam safety frameworks Emergency plans and testing
State Govt. review concluded that downstream residents have a right to know their risks, and how that risk is changing.	Legislation changes to ensure local disaster plan integration, and use of <i>Emergency Alert SMS system</i> . (<i>Qld Govt</i>)	SFARP AND ALARP Community engagement Stakeholder management Disaster frameworks
River height gauging sites, initially installed for low flow measuring, were not robust in line with flood warning and forecasting requirements.	Two gauging sites were destroyed, in one instance, the housing, monitoring equipment and well were never found. (<i>Sunwater</i>)	Environmental Monitoring SFARP and ALARP Flood warning and forecasting Engineering
Rainfall frequency was estimated by the official review at between 200-500 annual exceedance probability. Lake levels at Callide and Kroombit Dams reached or exceeded 1:5000-year levels	Testing of the validity of Average Variability Method (AVM) assumption that rainfall frequency was representative of flood frequency. (<i>Sunwater</i>)	Hydrological variability Atmospheric moisture
Issuing of fridge magnets by dam owner based on zoned inundation.	Allowed the system to be time proofed with planning for length gaps between major flood events. Example was identified as best practice by UK Govt review (<i>Uk Govt</i>)	Community Education Disaster Preparation Flood warning and forecasting

+ 17 more