THIS PROJECT WILL PRODUCE PROBABILISTIC ASSESSMENTS OF COASTAL EROSION AND INUNDATION RISKS ASSOCIATED WITH STORM SURGE, PARTICULARLY FOR EVENTS THAT ARE CLUSTERED IN TIME. A CRITICAL COMPONENT OF THIS RESEARCH IS TRANSITIONING MODELLLED STORM WAVES AT AN OFFSHORE WAVERIDER BUOY INTO A HYBRID SEDIMENT TRANSPORT MODEL AT THE SHORELINE. DETAILS OF WAVE TRANSFORMATION PROCESSES USING MODEL SIMULATIONS ARE PRESENTED FOR A STUDY SITE AT OLD BAR ON THE NSW MID-NORTH COAST, WHERE EROSION IS AN ONGOING MANAGEMENT ISSUE.

**STORM EVENT MODELLING**
- Multivariate statistical approach within a probabilistic framework.
- Modeled the magnitude and frequency of storm events to give event exceedance probabilities and to construct synthetic storm events.
- Long-term synthetic time-series of storm events (10^6 years) generated.

**SWAN® WAVE MODELLING**
- Series of nested nearshore simulations designed to build wave transformation look up tables.
- Accounts for shoaling and refraction of synthetic wave series to 15 m depth contour at 250m intervals along shoreline.
- Method developed for two study sites to represent open coasts (Old Bar, NSW) & semi-enclosed bays (Adelaide, SA)
- Results integrated into sediment transport model to simulate beach morphology.

**NEXT STEPS**
- Undertake simulations of beach response to modelled storms using a hybrid model accounting for cross-shore and longshore sediment transport processes.
- Produce probabilistic assessments of the coastal erosion and inundation risks associated with storm surge.

**END USER STATEMENT**
"At the end of its second year...this project has capitalised on the early productive engagement with end-users...to translate the research to the coastal management framework at the state level" (M. Woolf, lead end user)