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Wamberal Seawall Advisory Taskforce Terminal Protective Structure Project Team Briefing



8th Sep 2020



Outline

Background and project team

Project scope

Project schedule

Project status and progress

Discussion



Background and project team

- MHL is NSW Government's specialist impartial advisor (est 1944; DPIE Water)
- Commissioned in May 2020, \$411,236 (ex GST) to progress Gosford beaches CZMP action to **investigate a TPS and sand nourishment for Wamberal**
- Integrated team with Central Coast Council, Balmoral Group Aust & UNSW WRL
- Significant relevant experience (incl 1990 design, recent EEM support)



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Project Scope – Overview

1. Review previous design & investigation reports **90% complete**
2. Coastal protection assessment **60% complete**
 - a. Existing profile data assembly
 - b. Geotechnical data review
 - c. Preliminary crest alignment
 - d. Beach width analysis
 - e. Impact assessment to beach users and beach amenity
3. **Seawall concept design options*** **60% complete**
 - a. **Crest alignment**
 - b. **Seawall options**
 - c. **Cost estimates**
 - d. **Minimum engineering standards**
4. Sand nourishment **5% complete**
 - a. Sand requirements
 - b. Sand sources
 - c. Sand nourishment cost estimates
5. Additional coastal monitoring studies
 - a. Coastsnap/Coastal Imagery **Ongoing**
 - b. Wave runup monitoring
 - c. Live coastal monitoring webpage
6. Cost Benefit Analysis and Distributional Analysis **(socioeconomic profile, hedonic modelling)**

***Priority items being fast-tracked**



Progress update Stages 1 & 2 (Excluding beach width/amenity analysis)

Literature review

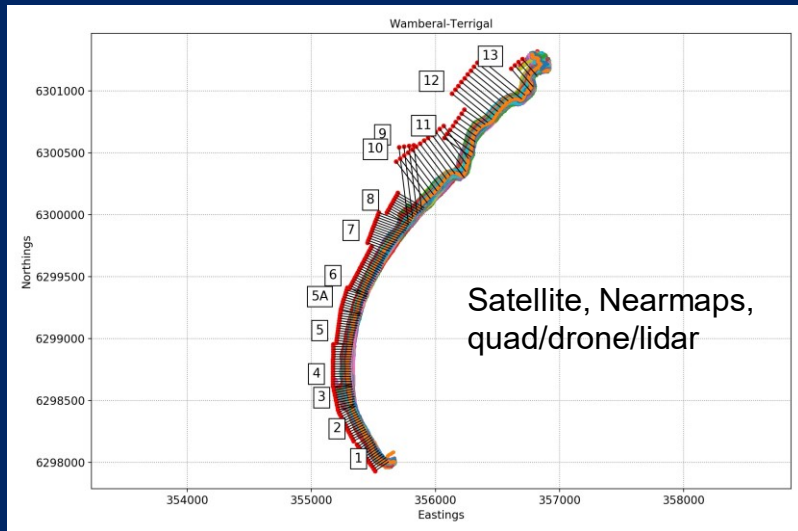
- History since 1968, incl storms of 74, 78 & Egger legal case
- Process, hazard and management studies (1985-2017)
 - 0.2m/y long-term average recession (SLR and/or other sediment sinks)
 - 250 m³/m design storm erosion (68 properties affected by 2050)
- All recommend TPS and nourishment (≈50,000 m³ every 10 years)
- TPS with wave return 6 m to 8 m AHD (est \$8.2M 2006; \$105k/property)
- Funding has been an ongoing stumbling block...



Progress update (S1 & S2)

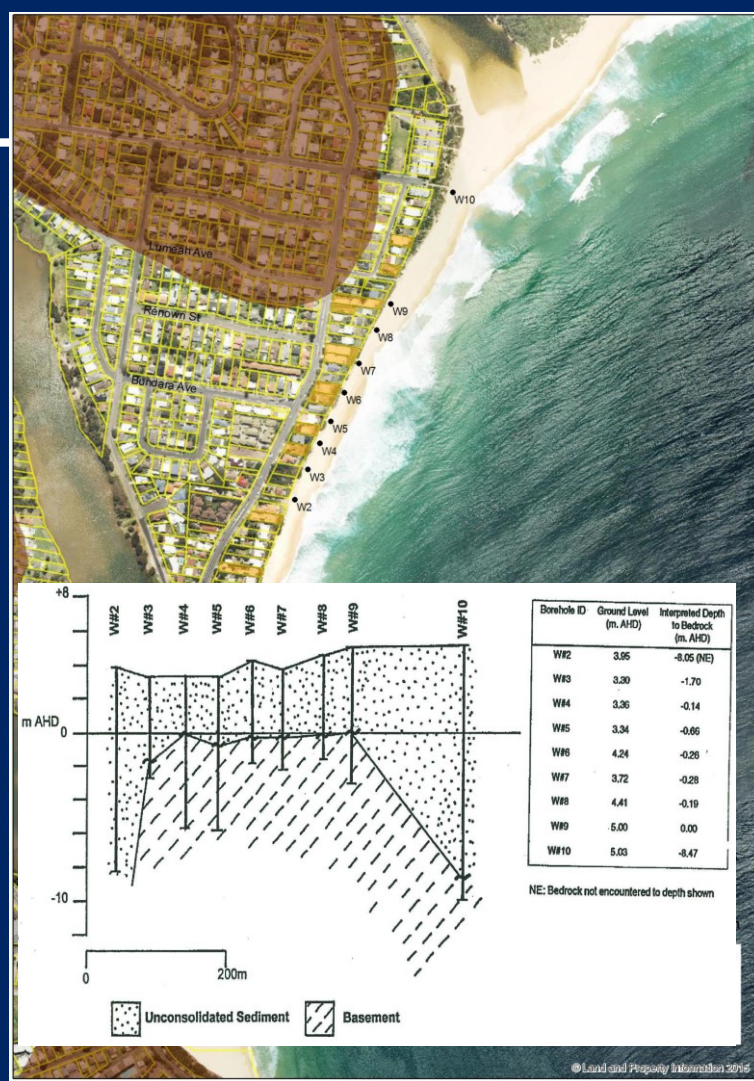
Preliminary shoreline analysis (1987 – 2020)

- Consistent with earlier studies



Geotechnical Data Review

- Bedrock above -2 m AHD over central N 400 m



Project Update – Stages 4, 5 & 6

4. **Sand nourishment** costing information gathered for CBA

5. **Additional Coastal Monitoring Studies**

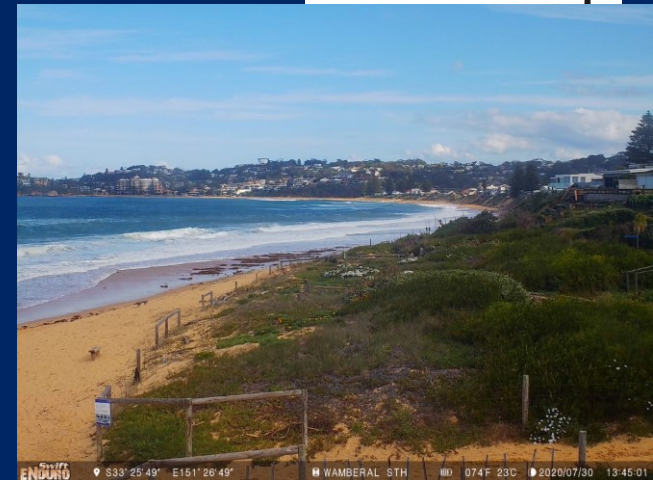
a. Coastsnap / Wamberal Trailcam (WRL)

<https://www.environment.nsw.gov.au/research-and-publications/your-research/citizen-science/digital-projects/coastsnap>

b. Wave runup Lidar

6. **CBA / Dist Analysis**

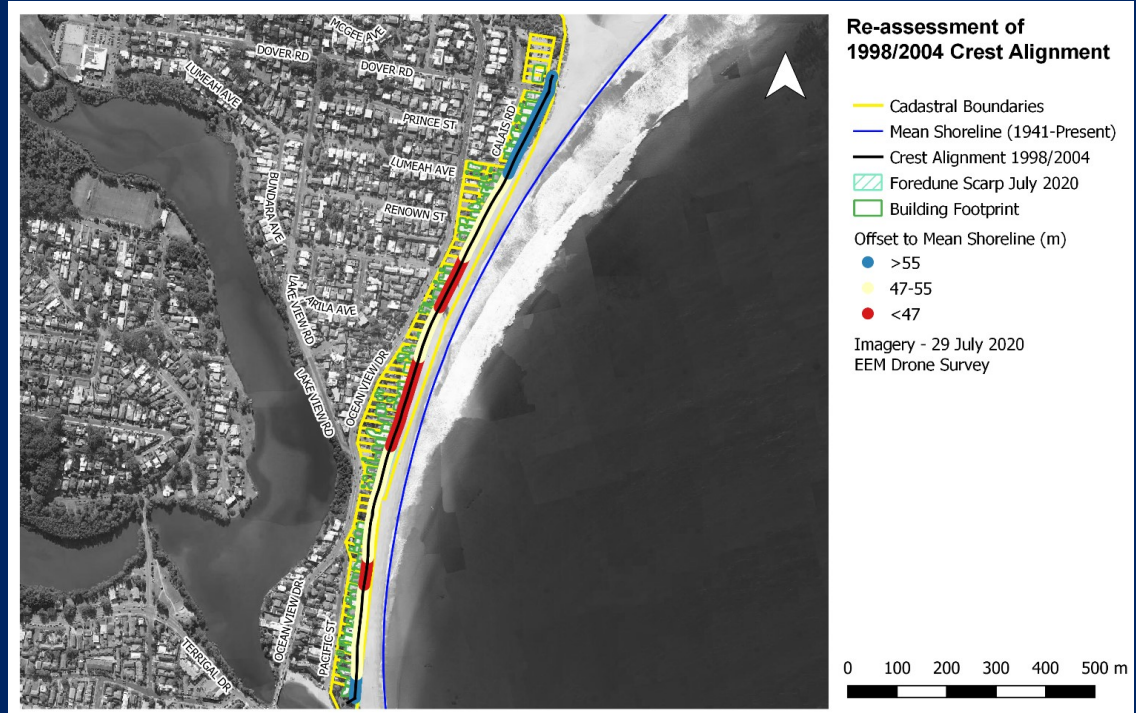
- socioeconomic profile &
 - hedonic modelling complete
- ➔ CBA Pending Stage 3 / 4 inputs



Progress update – Stage 3 (brought forward)

3. Seawall concept design options (Priority focus at present)

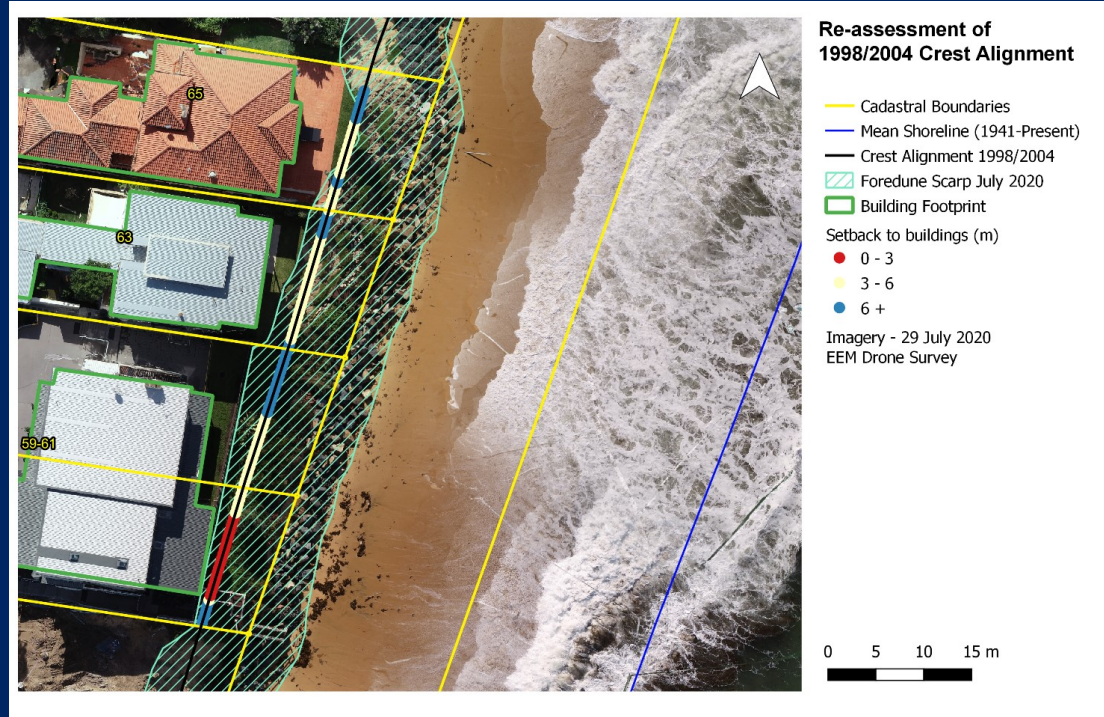
- Crest alignment
- Seawall options – concept designs for short listed options
- Cost estimates
- Minimum engineering standards



Progress update – Stage 3 alignment

Considerations

- Previous alignment
- Cadastral boundaries
- Characteristic shoreline (uniform curvilinear)
- Maintenance corridors
- Existing erosion scarp
- Existing structures
- Emergency works

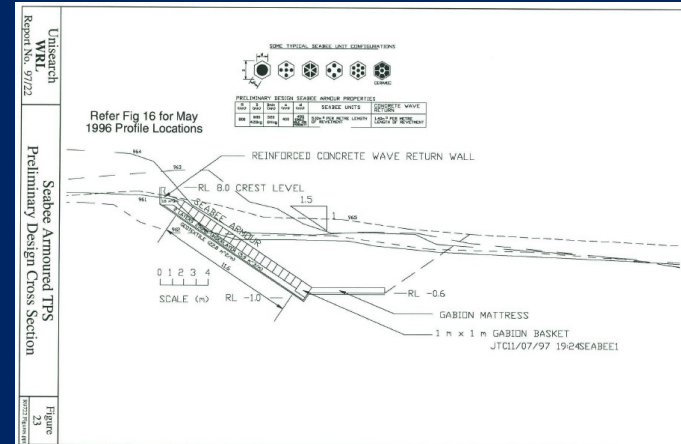


➔ As far landward as practicable (TPS)



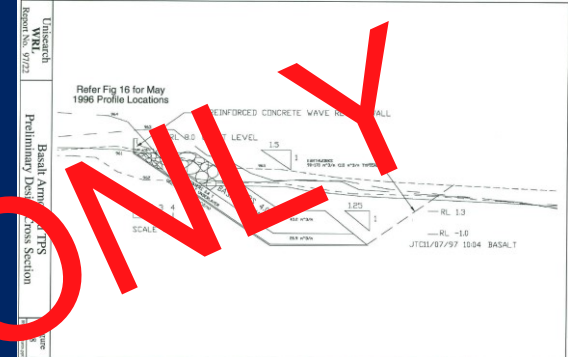
Short-listed concept design options

Revisit the sloped Seabee TPS for comparison



Short-listed concept design options

Rock rubble revetment

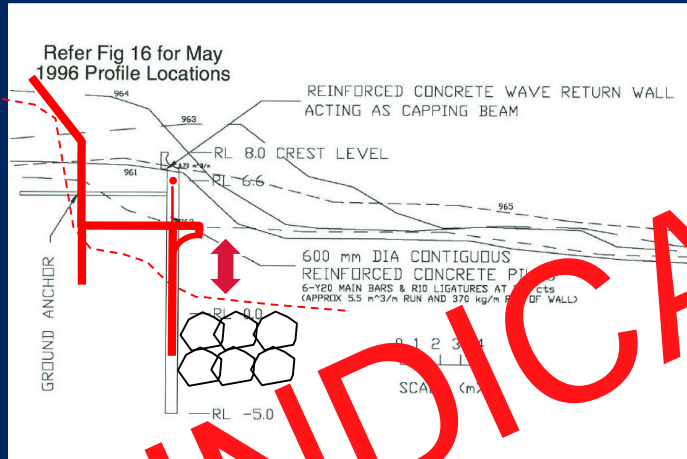


b) Typical Post-Storm Conditions



Short-listed concept design options

Vertical, hybrid vertical and combinations with promenade



Could we do something similar for Wamberal

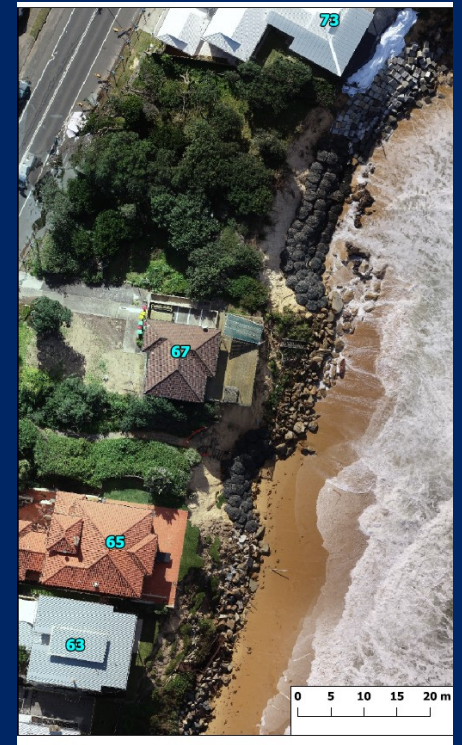
Blue Mile Pathway, Wollongong



Possible discussion areas

- Land tenure and use
- Access for maintenance / adaptation
- Ongoing amenity
- Consultation - landowners, locals and broader
 - Need for Master Plan integration
 - Need for flow on detailed design
- Cost and funding issues
- Central verses fragmented construction

We'll be stepping through advantages and disadvantages of each option wrt these and other factors... **but ultimately will depend on →**



What future do we want for here?

