



COMMUNITY COASTAL FLOOD EMERGENCY PLAN – GOOLWA AND MUNDOO CHANNELS

Workshop 1 – Thursday 8 February 2024





Acknowledgments

The development of the Community Coastal Flood Emergency Plan is jointly funded by the Coast Protection Board and Alexandrina Council.



**Government
of South Australia**

Coast Protection Board



Background: Coastal adaptation



2019: Coastal Adaptation Study

2020: Extensive Community & Stakeholder Engagement

2021: Council adopted the **Coastal Adaptation Study** (ACM21878)

2022: Council adopted **Coastal Adaptation Plan** (ACM221628)

Roadmap for Council to providing clear and defensible plan for identifying priority works for the immediate, intermediate, and longer term.

Key outcomes of Coastal Adaptation Study

- The majority of Alexandrina's coastline has been identified as low-medium risk for future erosion and/or flooding.
- Low-lying areas potentially higher risk to flooding and/or erosion in the future (2050 and 2100):
 - Dunes along Goolwa and Ratalang-Basham beaches
 - Murray Estuary Settlements (Mundoo & Goolwa Channels)



Role of council

Emergency management is a shared responsibility.

Local governments (councils) have responsibilities to take measures to protect their areas from hazards (under section 7 of the Local Government Act 1999).

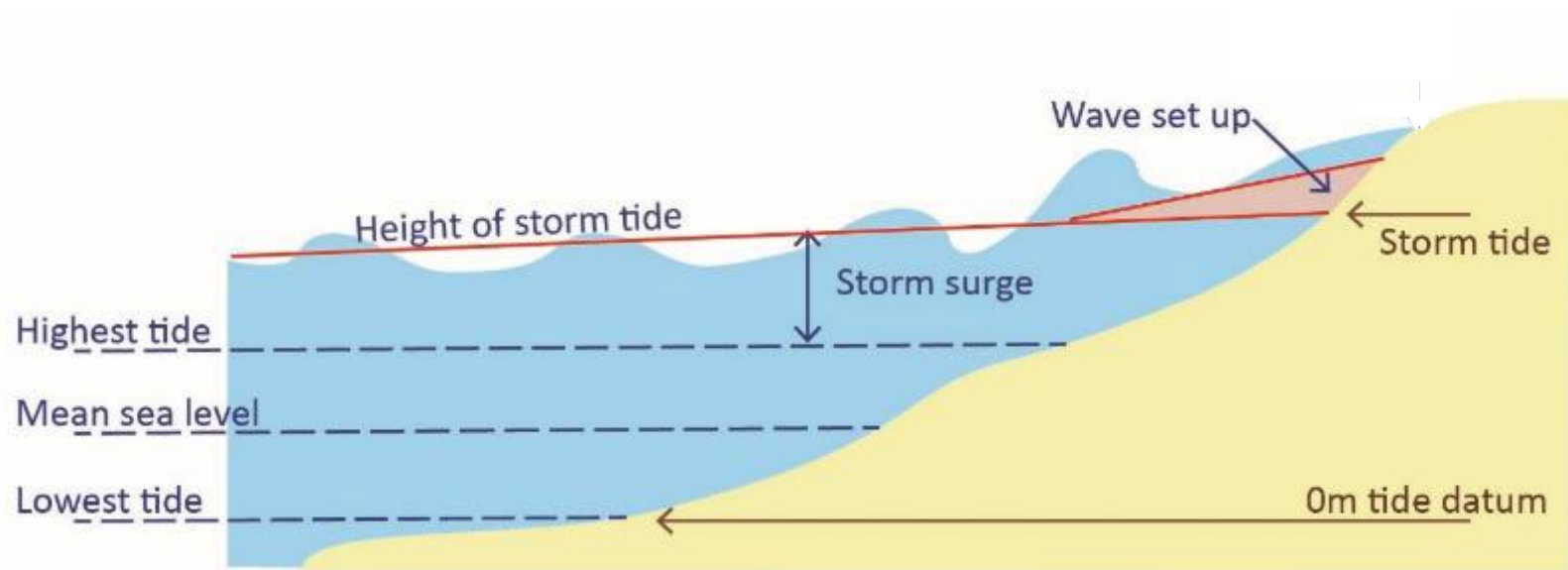
The State Emergency Management Plan identifies the enabling role of local government in emergency management, and that their strong relationship with the community means they can increase community preparedness by sharing information about the risks they face.

Background information



Why does it flood along the channels?

- High tides
- Storm events – storm surge



Sea level rise

1965-2018, sea levels along the SA coast rose by 1.5-4mm per year

Victor Harbor ~3.2mm/yr

(DEW 2020 Climate (Sea level) Trend and Condition Report Card)

By 2030, the projected sea level rise for Victor Harbor is ~ 0.1m

(compared to the 1986-2005 baseline)

By 2050 the projected sea level rise for Victor Harbor is ~ 0.23m

(compared to the 1986-2005 baseline)

(DEW Guide to Climate Projections for Risk Assessment and Planning in South Australia 2022)

Mundoo Channel coastal flood modelling



Current exposure – high tide event



Annual high water

Cell SF1 and SF2
Mundoo Channel
Current risk:
Annual high water

Assessment
Access and Egress

Using data from Mundoo boat ramp gauge and from Mundoo barrage over the last five years, on average the highest annual tidal event is 1.15m AHD.

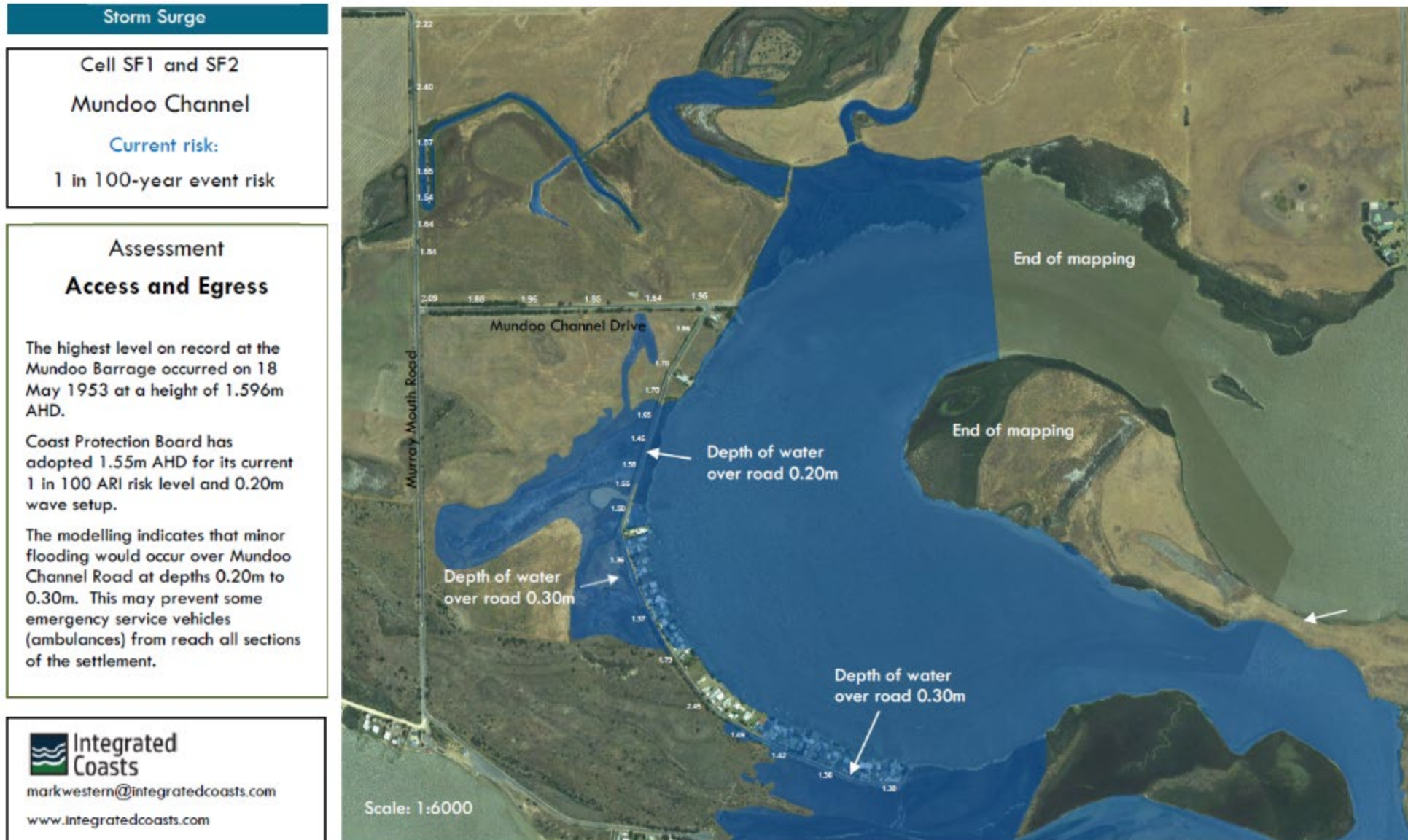
By way of contrast, the CPB 1 in 10 year event is assigned as 1.35m AHD (see Hindmarsh Island Tidal Study, 1988).

The current annual tidal event does not impact access and egress issues for the settlement.

**Integrated Coasts**
markwestern@integratedcoasts.com
www.integratedcoasts.com



Current exposure – storm surge event



15^{cm} TO FLOAT

Ever thought of driving
on a flooded road?



Scan me



Small

A small car can be moved by water only 15cm deep.

(A 1.05 tonne car with water flow speed of 3.6 km/h)

Share the campaign



Mid-sized

A mid-sized car can be moved by water only 30cm deep.

(1.5 tonne car with water flow speed of 3.6km/h)

Fact: Since September 2016, almost 10% of Victoria SES requests for assistance related to vehicles involved in floodwater.

Share the campaign



Large 4WD

A four wheel drive can be moved by water only 45cm deep.

(2.5 tonne car with water flow speed of 3.6km/h)

Fact: Fatalities associated with 4WDs in floodwater have increased significantly in the last 15 years.

Share the campaign

Never drive on flooded roads

Driving on flooded roads is dangerous, and it doesn't take much to make your car become unstable, lose traction or wash away.

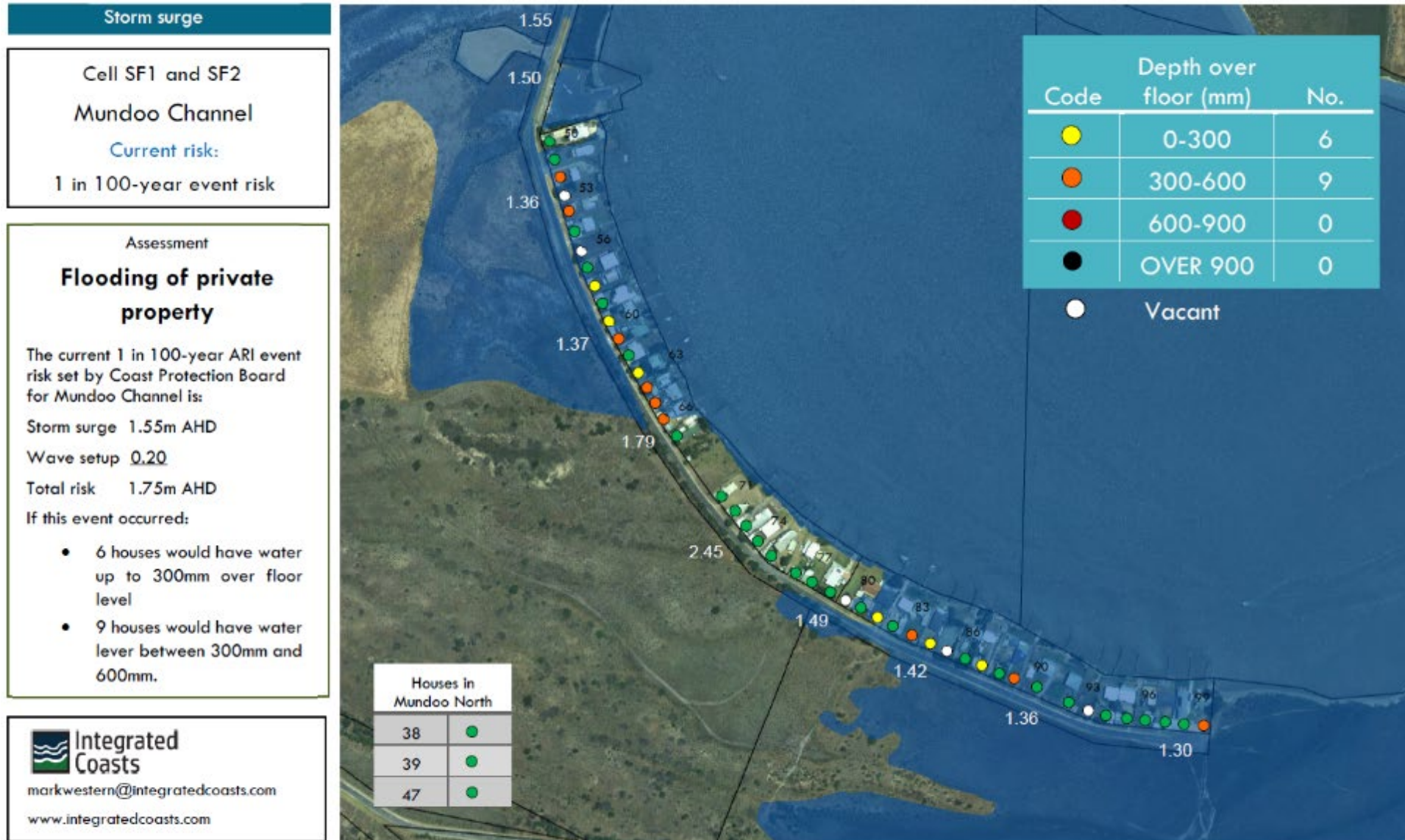
According to a float tank experiment using real vehicles at the University of NSW Water Research Laboratory, a small car can float in just 15 cm of water.

That's the height of an average pen!

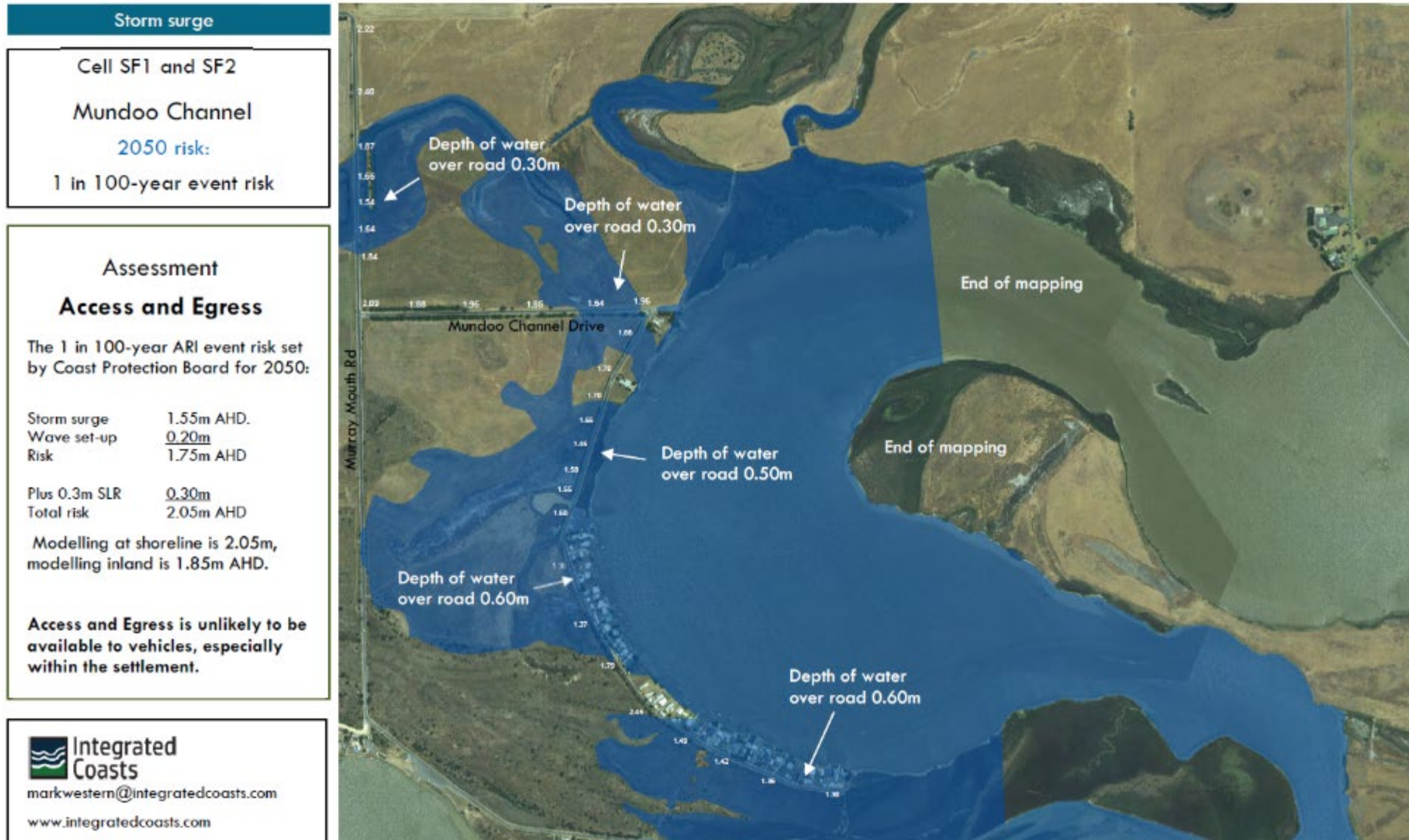
Reference: <https://newsroom.unsw.edu.au/news/science-tech/how-floodwaters-can-turn-cars-death-traps>

Share the Campaign

Current exposure – storm surge event



Future (2050) exposure – 1 in 100yr storm event



Goolwa Channel coastal flood modelling



Current exposure – high tide event



Annual high water

Cell SF1-2

Goolwa Channel

Current risk:

Annual high water

Assessment

Access and Egress

Using tidal data from the Goolwa barrage over the last five years, on average the highest annual tidal event is 1.20m AHD.

By way of contrast, the CPB 1 in 10 year event is assigned as 1.35m AHD (see Hindmarsh Island Tidal Study, 1988).

The current annual tidal event does not impact access and egress issues for the settlements.

Note: Flooding of the internal access at Mills Street settlement would be very close to overtopping the road.



markwestern@integratedcoasts.com

www.integratedcoasts.com



Current exposure – storm surge event



Storm Surge

Cell SF1-2

Goolwa Channel

Current risk:

1 in 100-year event risk

Assessment

Access and Egress

Coast Protection Board has adopted 1.55m AHD for its current 1 in 100 ARI risk level and 0.10m wave setup.

The modelling indicates that water would flow through vacant lots 17-21 and inundate **Goolwa Channel Drive** at depths up to 0.40m. The internal access road to the **Mills Road** settlement would be inundated at depths up to 0.40m. It is possible that water could flow through the dredging base and flood **Sugars Beach Road** but at very low depth (0.1m)

All main access ways remain open in the current 1 in 100 event. Minor flooding would prevent access within settlement Mills Road and Goolwa Channel drive.

The logo for Integrated Coasts, featuring a stylized wave icon.

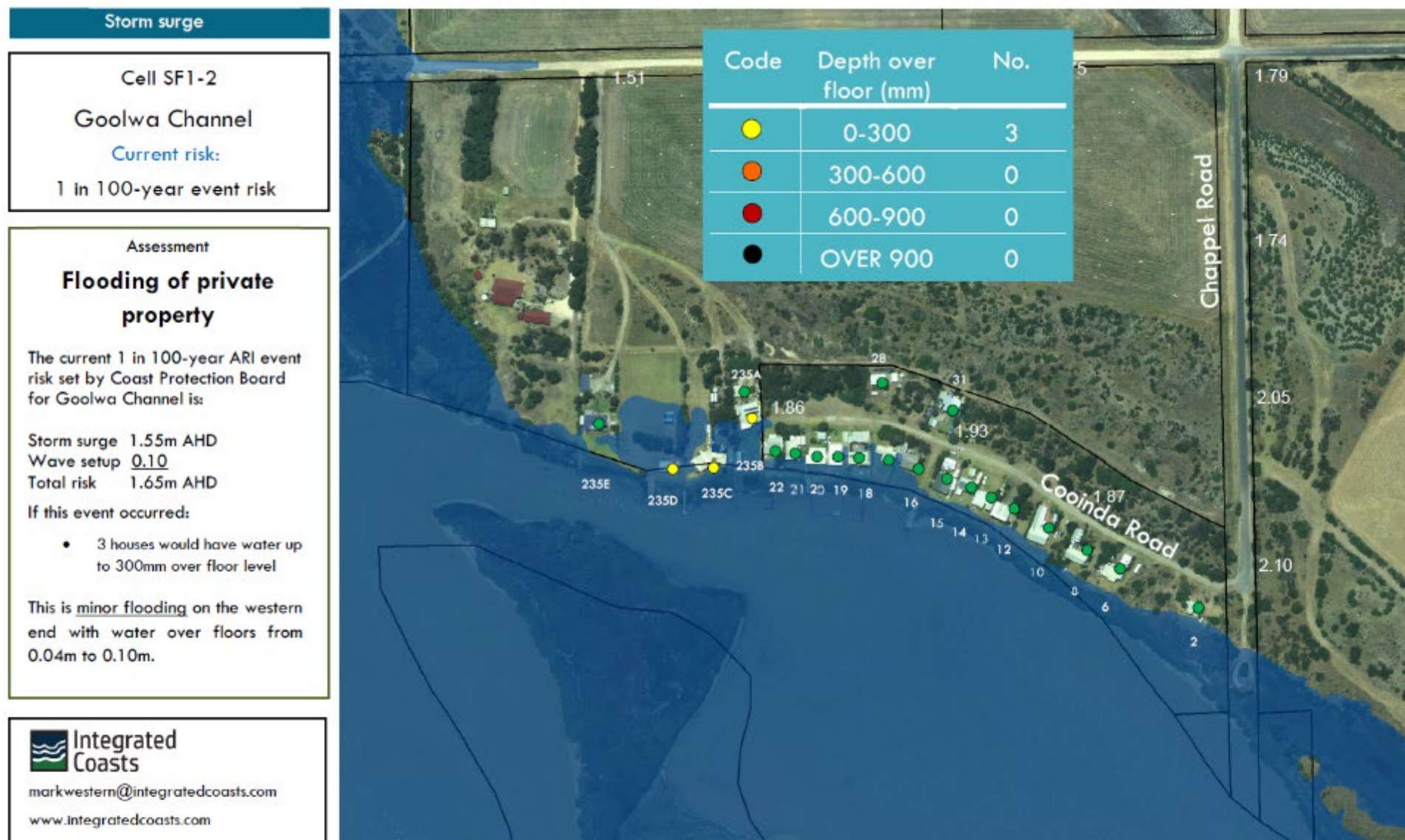
Integrated Coasts

markwestern@integratedcoasts.com

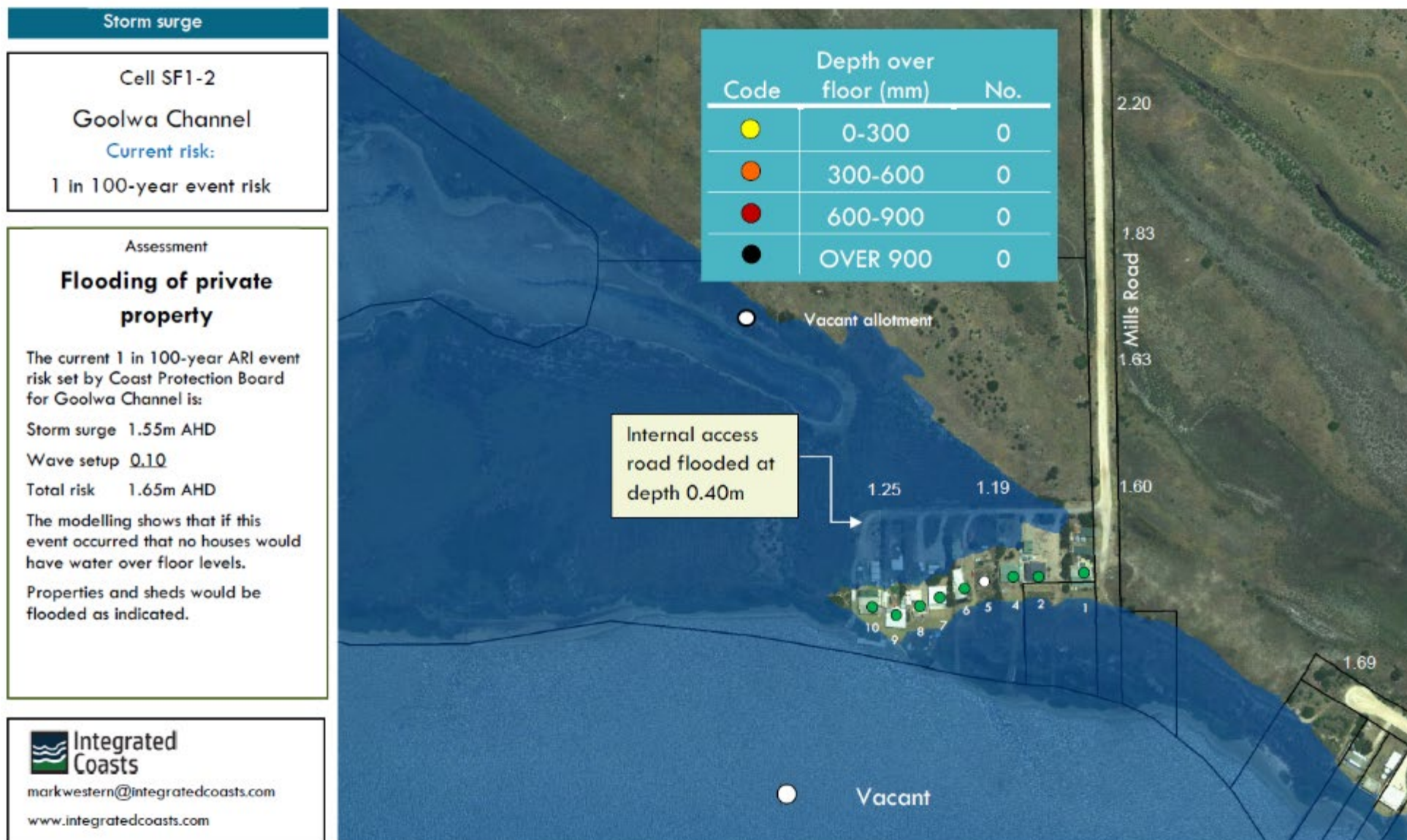
www.integratedcoasts.com



Current exposure – storm surge event



Current exposure – storm surge event



Current exposure – storm surge event



Storm surge

Cell SF1-2

Goolwa Channel

Current risk:

1 in 100-year event risk

Flooding of private property

The current 1 in 100-year event risk set by Coast Protection Board for Goolwa Channel is:

Storm surge 1.55m AHD
Wave setup 0.10
Total risk 1.65m AHD

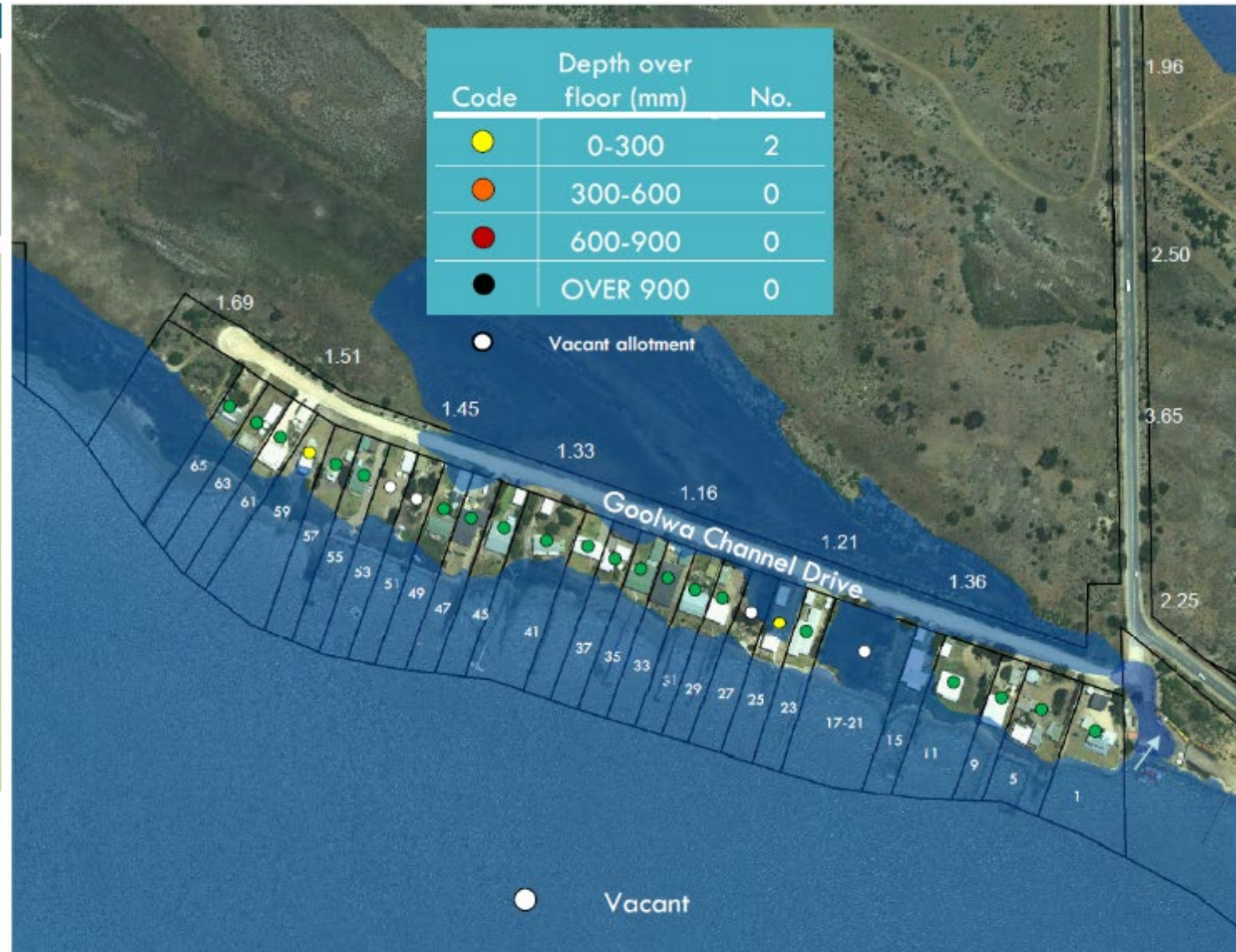
The modelling shows that if this event occurred that 2 houses would have water over floor levels.

Flooding through No 17-21 would cause flooding from the rear of allotments at no 25 and 27 and elsewhere as shown. It is possible that flooding of Sugars Beach Drive can occur through the property at the end of Murray Mouth Road.

Integrated Coasts

markwestern@integratedcoasts.com

www.integratedcoasts.com



Current exposure – storm surge event



Storm surge

Cell SF1-2

Goolwa Channel

Current risk:

1 in 100-year event risk

Assessment

Flooding of private property

The current 1 in 100-year event risk set by Coast Protection Board for Goolwa Channel is:

Storm surge 1.55m AHD

Wave setup 0.10

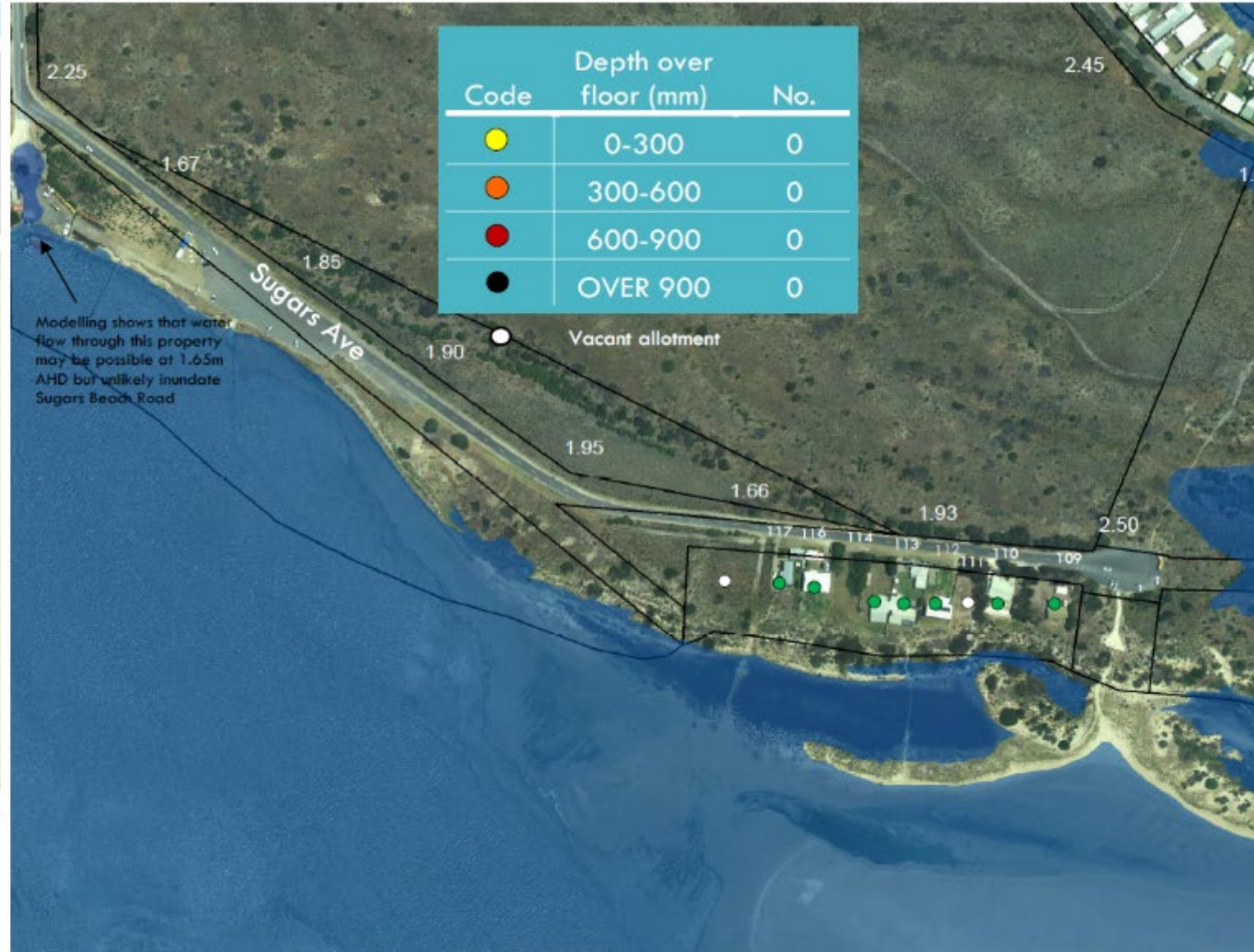
Total risk 1.65m AHD

The modelling shows that Sugars Ave settlement area is not inundated for the current 1 and 100-year risk flood scenario. However, further analysis is required for the property at the end of Murray Mouth Drive (modelling is borderline).

Integrated Coasts

markwestern@integratedcoasts.com

www.integratedcoasts.com



Future (2050) exposure – 1 in 100yr storm event



Storm surge

Cell SF1-2
Goolwa Channel
2050 risk:
1 in 100-year event risk

Access and Egress
The 1 in 100-year event risk set by Coast Protection Board for 2050:

Storm surge	1.55m AHD.
Wave set-up	<u>0.10m</u>
Risk	1.65m AHD
Plus 0.3m SLR	<u>0.30m</u>
Total risk	1.95m AHD

Modelling at shoreline is 1.95m, modelling inland is 1.85m AHD.

Access to Cooida settlement is likely to be available via Chappel Road.

Access and Egress is unlikely to be available to vehicles along Mills Road and Murray Mouth Road.

Internal access would be impassable within Mills Street and Goolwa Channel Drive settlements.

Integrated Coasts
markwestern@integratedcoasts.com
www.integratedcoasts.com



Questions?





What will the plan contain?

- Introduction
 - What is a Community Flood Emergency Management Plan (CFEMP)?
 - Why do we need a CFEMP?
 - Emergency management planning
 - Roles and responsibilities for flood management
- Why does it flood?
 - Elevations
 - Tides
 - Storm levels
 - Sea level rise

What will the plan contain?

- What are the risks associated with flooding?
- What can you do to manage flood risks?
 - Prevent and prepare – what to do before a flood happens
 - Respond – what to do when it floods
 - Recover – what to do after a flood
- Household Emergency Management Plan Template

PREPARING YOUR HOUSEHOLD EMERGENCY MANAGEMENT PLAN



Follow the steps below to help you get prepared for a flood at Webb Beach:

1. Your property

Review your property and location map.

2. Assess your knowledge and capacity

Assess your knowledge of flooding and your capacity to cope with and recover from a flood.

3. Write down important contacts and details

Write down the important contacts and details you might need if there is a flood.

4. Get your home 'flood ready'

Go through the flood preparation checklist.

5. Emergency kit

Prepare an emergency kit following the checklist.

If flood advice or a warning is issued...

6. Flood action checklist

Follow your flood emergency management plan that identifies what you will do if there is a flood.

7. Recovery checklist

Follow the checklist to make sure you stay safe after the flood and as you clean up.

Questions?



Photo credit: B Wright



Workshop Activities



Photo credit: B Wright



Next workshops

Workshop 2 - Thursday 29 February 6pm – 8pm

- help identify how we can work together to prepare, respond and recover from coastal flooding

Workshop 3 - Thursday 11 April 6pm – 8pm

- present the draft plan, be supported to prepare your own household plan

Thank you for coming



Photo credit: B Wright