Scamander river mouth – values at risk analysis

SGS Economics & Planning

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SGS Economics and Planning acknowledges the First Nations Peoples of Australia and on whose Country we live and work.

SGS Economics and Planning acknowledges that the Aboriginal and Torres Strait Islander peoples of Australia are one of the oldest continuing living cultures on Earth, have one of the oldest continuing land tenure systems in the World, and have one of the oldest continuing land use planning and management systems in the World.

We pay our respects to the First Nations Peoples, past and present, and acknowledge their stewardship of Country over thousands of years.

Hazards

- Scamander River mouth is a highly dynamic environment
- Of note is the river channel and entrance, that have migrated both north and south
- The river mouth can close forming a barway
- Hazards impacting Scamander include:
  - Coastal Erosion,
  - Estuary foreshore Erosion,
  - Coastal Inundation,
  - River Flooding, and
  - some Pluvial flooding (drainage)
- ‘Compound’ or ‘coincident’ flooding can occur when hazards combine and / or the entrance is closed

Impact of climate change on Hazards

- As a result of climate change, a number of processes forming hazards are expected to alter, including a continued rise in sea level, rainfall intensity and potential increased storminess and storm intensity
- There is an expectation that coastal erosion will continue to recede the shoreline generally
- SLR will increase the impact of coastal storms, with increased (increased coastal inundation)
- Increase rainfall intensity will increase peak river flows and water levels during storms.


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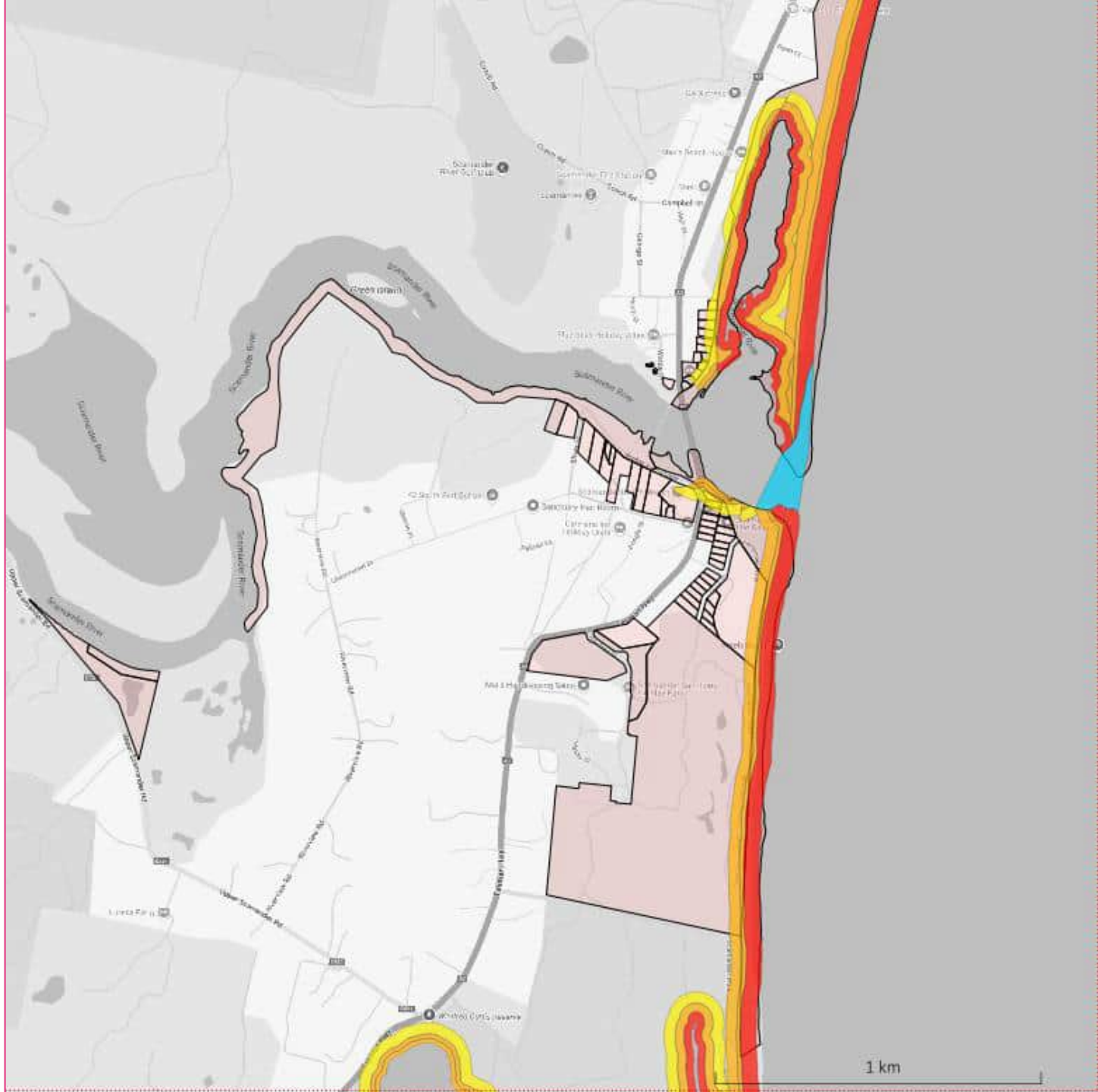
Processes

Coastal Erosion Hazards

Coastal Erosion Hazard Bands

- High
- Medium
- Low
- Investigation

- Properties identified at risk



Coastal Inundation Hazards

Coastal Inundation Hazard Bands

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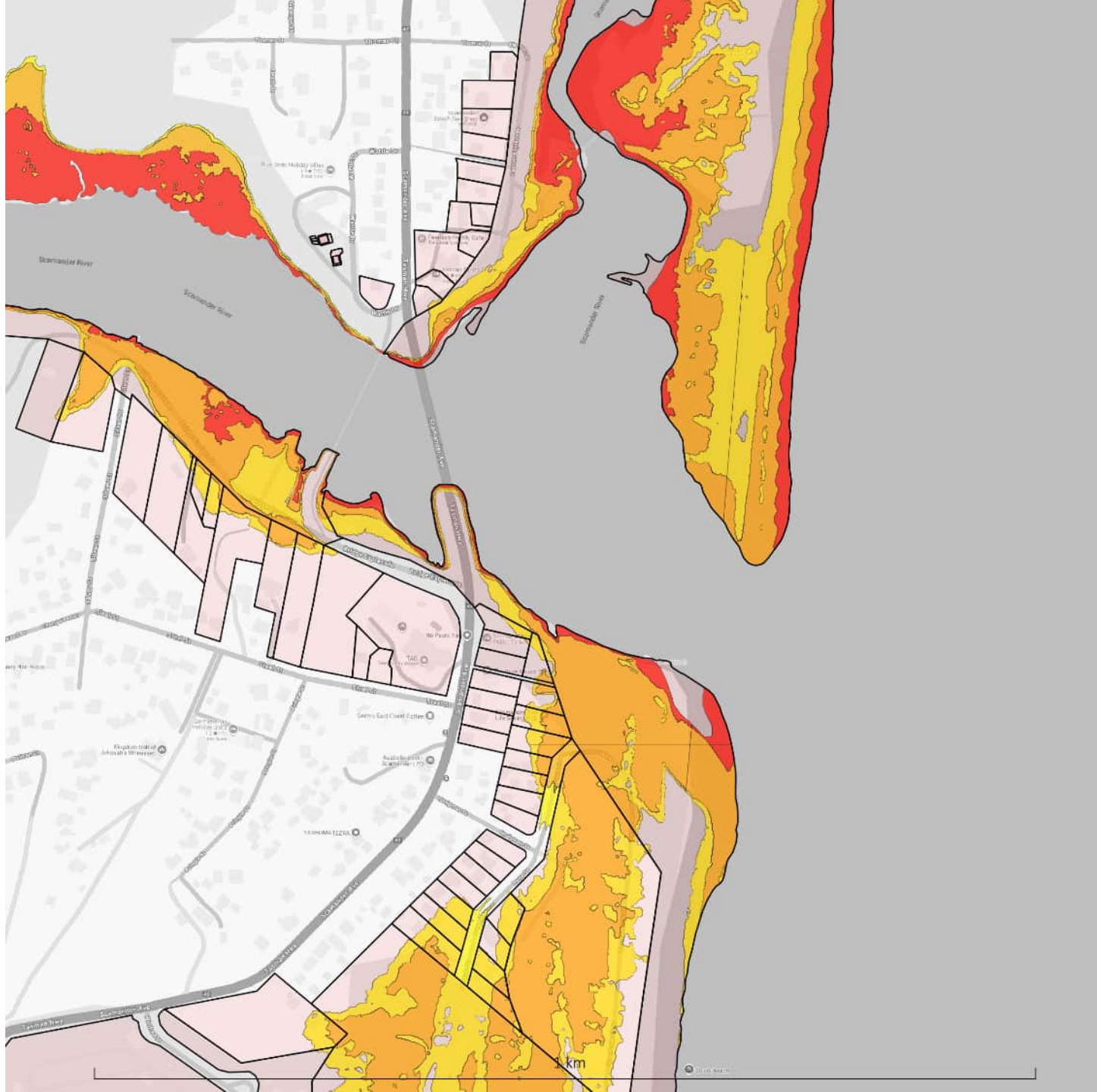
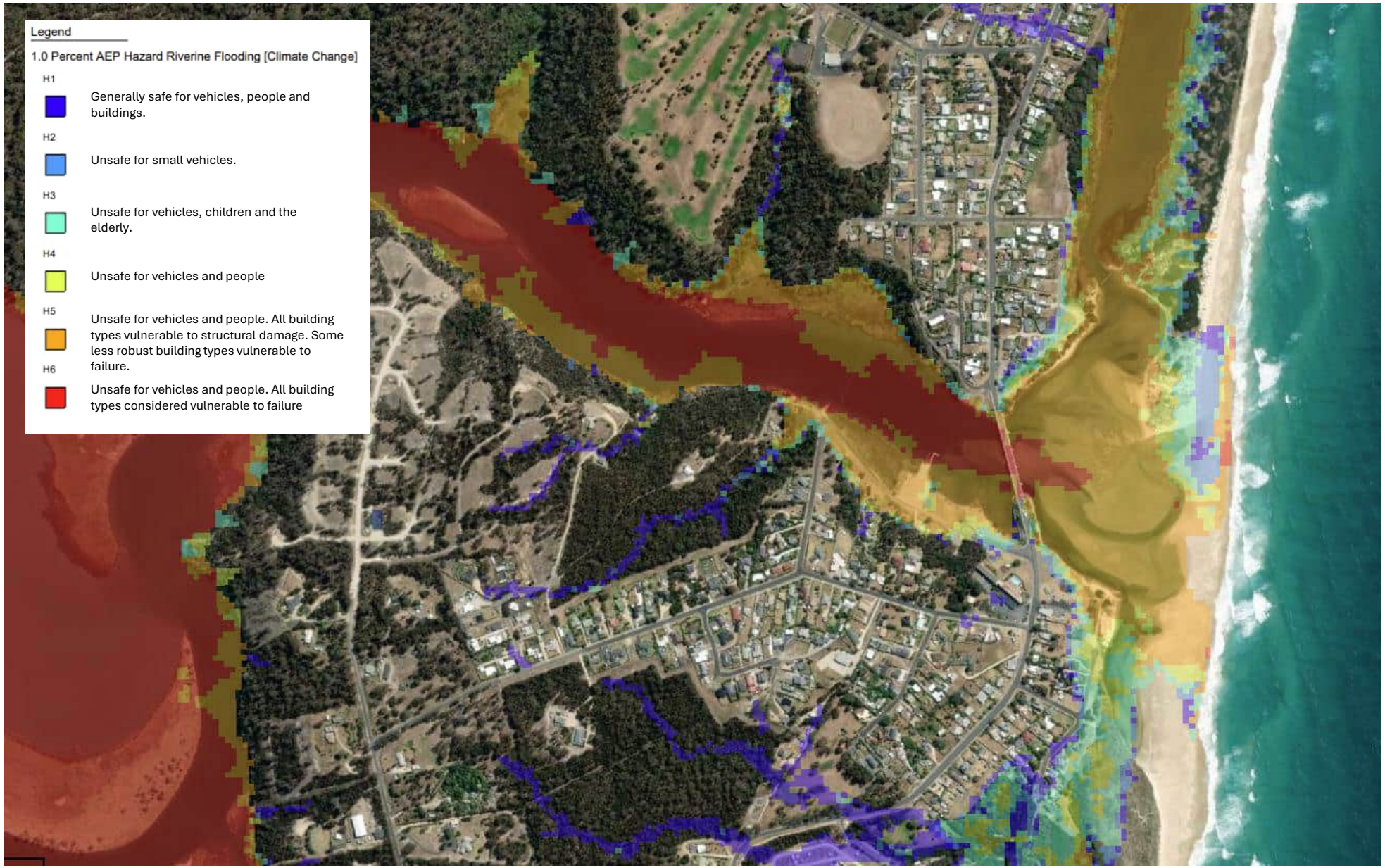
Coastal Inundation Closeup – rivermouth properties





Source: ListMap (2025)

Current situation

Current management approaches:

- mechanical opening of the barway,
- clearing debris and
- vegetation management.

Previously implemented management works include:

- the rock wall
- the rock training wall
- the shoreline hardening

Without additional interventions...

- The past works will likely degrade and erode, further exposing land uses behind them
- The river mouth will likely continue to migrate and as it migrates southward, which it has tended to do more recently, could cause further erosion of the foreshore

Climate change impacts on the Scamander landscape with no further action

Rising sea level, more extreme coastal storms and more extreme rainfall events can result in the following:

Sea Level Rise could cause saltwater intrusion.

With climate change, there will be more extreme rainfall events, exacerbating flood and erosion hazards from the river (interacting with the ocean's hazards at the mouth)

With climate change, particularly sea level rise, the water table will rise and stormwater will drain more slowly (and not at all in the lowest lying areas).

Waves will increasingly overtop the beach during storms, impacting houses and infrastructure (inc. along Dune St)

Dunes retreat further landward

With SLR, the beach and dune system would likely narrow and/or move landward, resulting in a reduced buffer between the ocean and land uses and infrastructure along the coast

With SLR, the level of the barway could rise and migrate landward leading to increasing flood levels during rainfall events

If nothing is done to manage the risk, potential consequences include...

Property

Dwellings and buildings at risk are undermined and damaged by erosion and flooding

- Some dwellings may become uninhabitable or not safe to replace, necessitating relocation of residents/users, or face temporary evacuation
- The values of properties most at risk will drop over time and insurance premiums will increase. For example:
    - Dune Street, including the SLSC
    - Tourism accommodation at Lagoon Esplanade and Dune St
    - Low lying residences along Bridge Esplanade

Infrastructure

Increasing damage to roads, pump stations and walkways. An increased cost to rebuild or relocate outside hazardous areas.

For example:

- Dune St (the road) and the pump stations at Dune St and Lagoon Esplanade
- Playground and skate park between Dune St
- Bridge abutment
- Open space on the Bridge Esplanade
- Possible saltwater intrusions to drinking water supply (TBC)

Environmental

Reduced ecological values

- Reduced wetland, dune and beach habitats for birds
- Resulting in lower surviving reproductive rates for species and a reduction of threatened species, both flora and fauna.
- Increased pollution of natural areas as untreated stormwater overflows into the environment

Land Use and Services

Poor access to the beach due to changing river flows and narrowing of the beach will weaken opportunity to enjoy the beach and lead to:

- Reduced physical activity and health of the community
- Reduced tourism visitation and spending
- Reduced property values
- Increase of emergency response activities and associated costs

Values at risk – summary table

NOTE
A. This is an assessment of overall value of assets and values close to the Scamander River Mouth. The degree of risks they face has not been applied yet, to estimate the proportion of potential loss. Some assets are above flood levels for example.
B. The total here is $72 Million.

Value	Quantity at risk	$'000 Value	Description
Property	36 private dwellings (1 shed, 2 empty plots)	$21,700	*Total adjusted capital value (ACV)*
	2 commercial premises	$ 1,300	*ACV*
	4 multi-room visitor accommodation	$20,000	*ACV*
	5.2 km roads	$ 2,600	*Total value of $/metre*
	Council assets	$ 3,100	*ACV*
	Community facilities (Scamander SLSC)	$ 470	*ACV*
Visitation	~427 visitor capacity	$13,000	*Estimated spend annually*
Recreation	• 111,610 sqm foreshore park • 1,352,656 sqm beach	$ 17 $ 1,200	*Estimated total value of $/household* *Estimated value of a visit to a beach per visit per household*
Habitat	• 1,727,354 sqm estuary • 1,874,620 sqm dune vegetation	$ 1,100 $ 1,800	*Estimated total value of $/ha/household willingness to pay*
TasWater Assets	Including water mains, reservoirs, sewer mains, BPT and SPS	$ 6,200	*Replacement costs*
Total		**$ 72,000**	

Measure examples

No regret options

#	Asset	Challenge	No Regret Measure
1	**Barway**	The condition (open/closed) of the barway impacts other hazards but is managed on an ad hoc basis	Documented barway opening policy, including emergency management procedures and pre-defined (and agreed upon) triggers for barway opening.
2	**Foreshore Reserve**	Deterioration of current erosion protection measure (a rock revetment)	Restoration of the rock protection, likely including an appropriate backfill/filter layer and geotextile, as well as habitat creation through saltmarsh (or other species) planting. Planting should not limit public access to the foreshore completely.
3	**Pelican Sands Foreshore**	Foreshore continues to experience erosion, and previous protection has all but disappeared	Protection of this foreshore. The measure should incorporate as much as possible a living shoreline, to provide positive ecological outcomes and limit the use of hard infrastructure.
4	**Dune Street, Hind Dune Foreshore**	Foreshore is actively eroding and now only metres from the road	This foreshore is within the window of historical and future dynamic channel alignment, the previous foreshore comprised dunes and sandy foreshore. Restoring this habitat whilst protecting the foreshore is not considered to significantly impact other processes.

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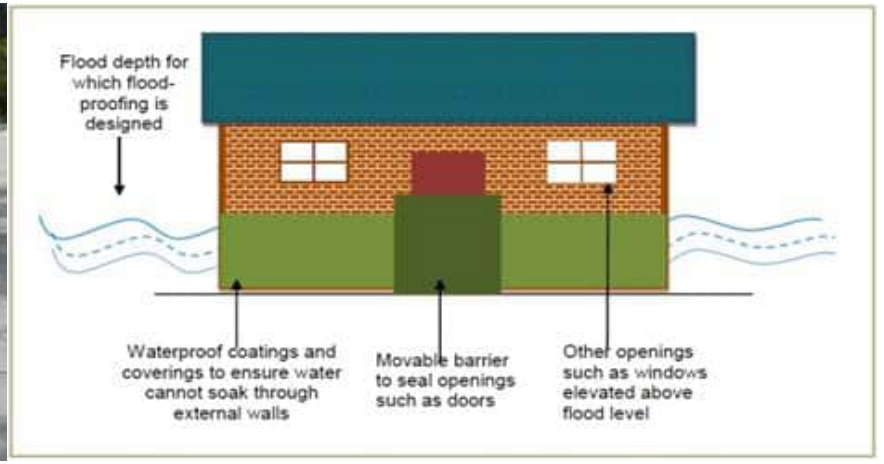
Adaptation pathways

- Not predictions
- Not recommendations
- Not plans

- Possibilities – choices of direction and their outcomes

- Trade-offs: each with their own costs and benefits

Early retreat – let nature take its course



Protect development while retaining values of area




Protect to maximum extent possible

All pathways address the risks of erosion and inundation

But differ in respect to:

- Community values and
- Expectations

Key principles

- Developing risk needs to be managed
- There can be no subsidy to occupy or use hazardous areas
  ...but there may need to assistance for a transition

Three pathways

- Is it credible? Could it be achieved?
- Is it desirable? (Pros and Cons)
- Is it cost effective, worthwhile?
- Is it flexible? Faster/slower sea level rise; high or low value of property; new technology
- How would it fail? How would retreat work?
- What would be required to achieve it?

Who decides? Who pays?

Questions & Next Steps