



# Waitara Beach Walk - 15 February 2018

## KEY COASTAL FACTS

Waitara is located on the floodplain of the Waitara River and is generally low-lying.

Shallow river bars or deltas are at the entrance to the Waitara River, formed by river and tidal flows. Waitara West Beach is comprised of sand and gravel ovetop a lahar platform with sand dunes along the backshore.

Waitara East Beach is also sand and gravel overlaying a lahar platform with the Airedale reefs to the east. Sediments come from the Waitara River and from further west, moving along the coast to the east under persistent westerly swell.

The river was trained by moles in the late 1800s to limit channel migration and increase depths. Following construction of the river moles, Waitara West beach rapidly grew some 370m, with a smaller amount of growth seen at Waitara East Beach. The Waitara East mole has experienced damage, repairs and modification since construction, with a groyne and half-tide wall subsequently constructed.

Both the east and west beaches show evidence of significant fluctuations in position as sediment supply has changed and with periods of storms and calm. Waitara West Beach has been more stable than Waitara East Beach due to the direction of sand drift and the supporting influence of the moles. Even so, since the late 1940s Waitara West has been eroding at up to 0.75m per year, while Waitara East has been eroding at up to one metre per year.

## Two main hazards

Due to the low-lying nature of the Waitara coastal area, it is susceptible to both coastal erosion at the shoreline, and coastal flooding at the shoreline and further upstream.

The coastal erosion hazard area includes future erosion of the beach and dunes by storms and changes in sediment supply.

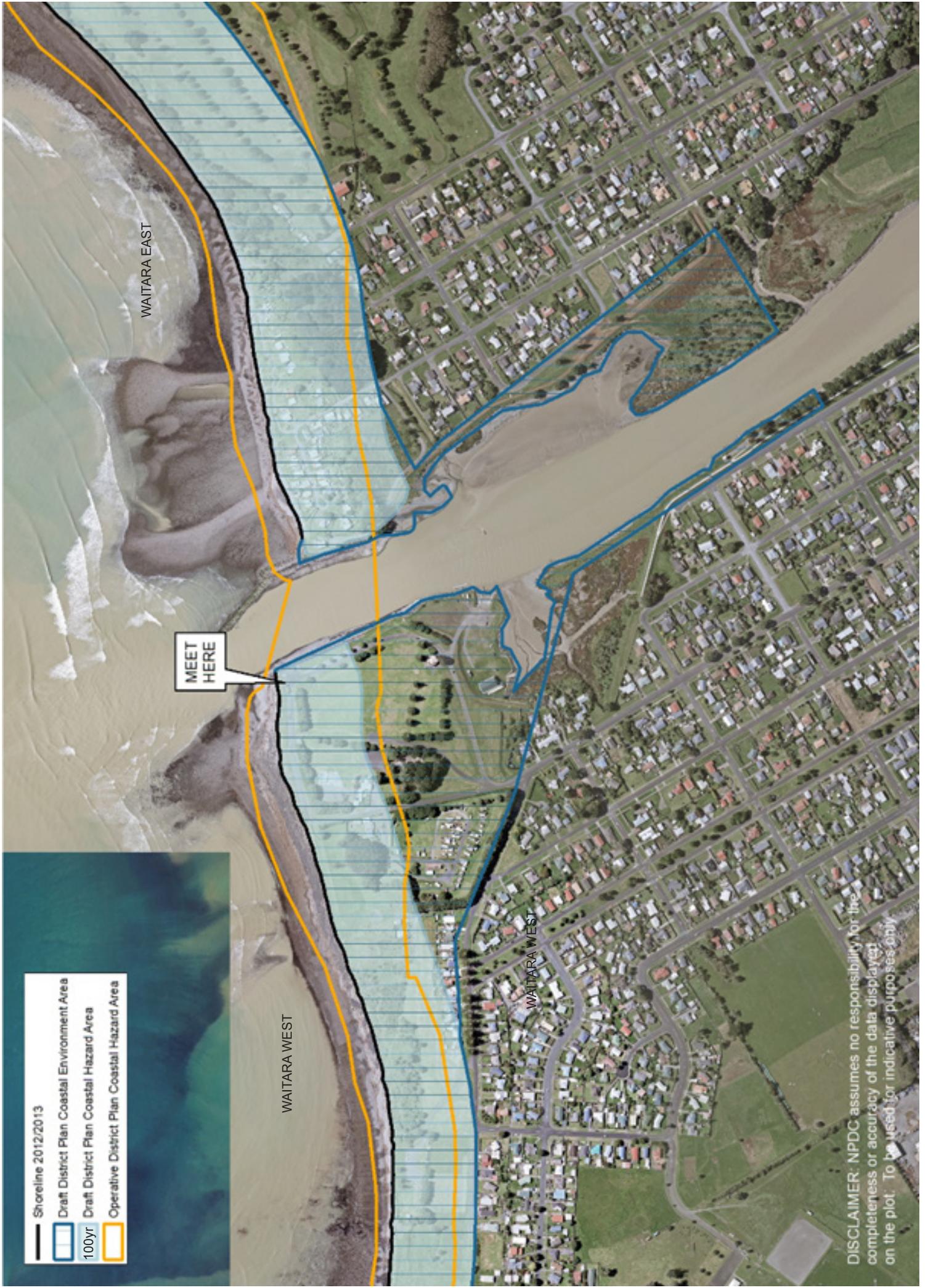
The yellow lines show the coastal hazard area, which was calculated in 1988 and is currently in the Operative District Plan. The seaward extent of the yellow lines shows the distance the coast has eroded since this time.

The blue-shaded zone shows the area which may be affected by erosion and land instability in 100 years if erosion continues at current rates.

Erosion rates may increase with future climate change and sea level rise. This has not yet been incorporated into the blue-shaded coastal hazard area but is being investigated.

Coastal flooding may occur as a result of tides, storm surge, waves and sea level rise. A 100-year average return period event may reach 3.2m above sea level, with a future level of up to 4.1m above sea level (including the effects of sea level rise). Modelling shows that parts of the town may be affected by both current and future coastal flooding, but the river stop-banks will reduce those effects.





- Shoreline 2012/2013
- Draft District Plan Coastal Environment Area
- Draft District Plan Coastal Hazard Area
- 100yr
- Operative District Plan Coastal Hazard Area

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