Understanding sea level rise in Kāpiti

Coastal hazards susceptibility and vulnerability assessment

February 2022

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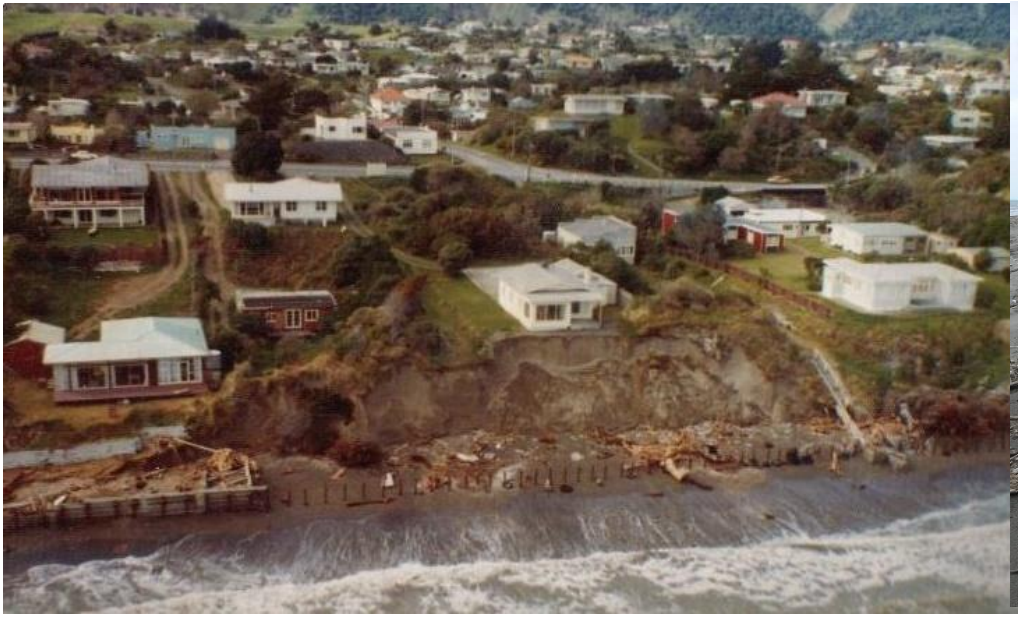
Me Huri Whakamuri, Ka Titiro Whakamua



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We need to know what we're dealing with so we can plan and adapt effectively

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Why this matters

- Council need to plan future investment in coastal assets
  - We all pay for building, maintaining, repairing
- Hazards can reduce access to beaches
- Property buyers need full info on hazards
- Property owners need full info before investing more in their asset
- Need to keep Kāpiti a great place to live and visit

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We need SLR information to:

- raise community awareness about hazards
- plan a response while we have options
- manage community infrastructure and property responsibly and cost-effectively
- provide base hazard data for future District Plan changes
- inform property owners and potential buyers

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Our previous attempt

- 2008 and 2012 previous hazard assessments
- 2012 report was challenged
- Carley et al panel review found:
  - Council approach was sound
  - Criticised aspects of the methodology
- 2014 Council withdrew the report, pending further work

Our new approach

- Takutai Kāpiti is putting our community at the heart of the process
- 2022 report addresses review panel findings
- We've learned from others
  - Technical experts have done similar work
- Peer reviewed by Beca and GWRC
- Community feedback considered
- Govt guidance now available and followed

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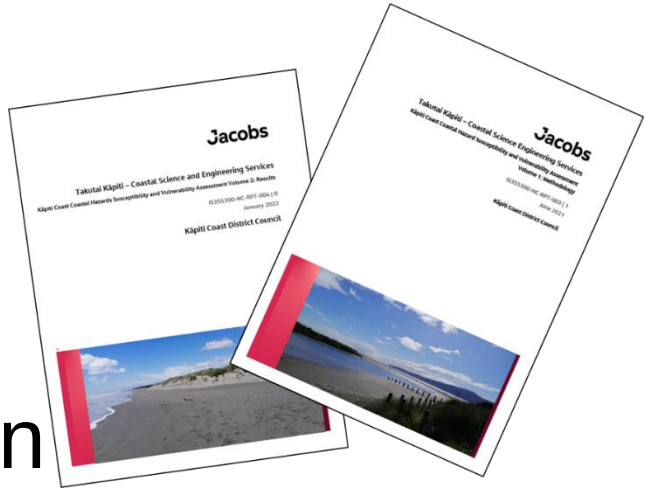
Volume 2 Report



- Uses scientific best practise
- Uses most recent information
- Methods in line with MfE (2017) guidance
- Needs to be updated as information and knowledge evolves
- Recognises the limitations of the models, and accounts for uncertainties
- Peer Reviewed by Beca and GWRC

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Coastal processes

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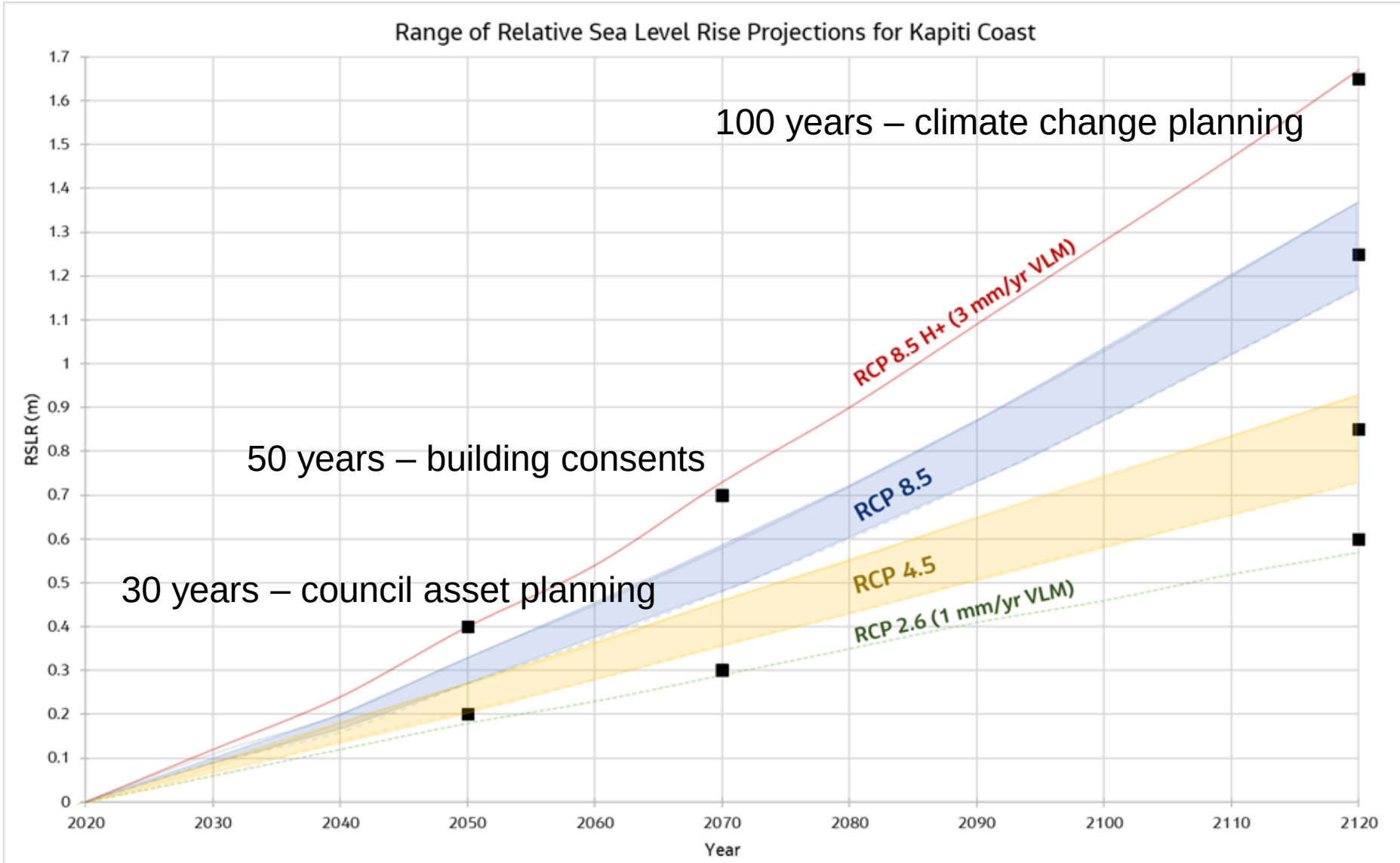
Methods and RSLR



Cells and RSLR for Kāpiti

- Erosion – divided district into 8 cells:
  - Paekākāriki, QEII Park, Raumati, Paraparaumu, Waikanae, Peka Peka, Te Horo, Ōtaki
- Flooding - 4 cells:
  - Ōtaki & Te Horo, Peka Peka & Waimeha, Waikanae & Raumati, Paekākāriki & Whareroa
- Overall RSLR:
  - 30 years – 0.2 m to 0.4 m
  - 50 years – 0.3 m to 0.7 m
  - 100 years – 0.6 m to 1.65 m

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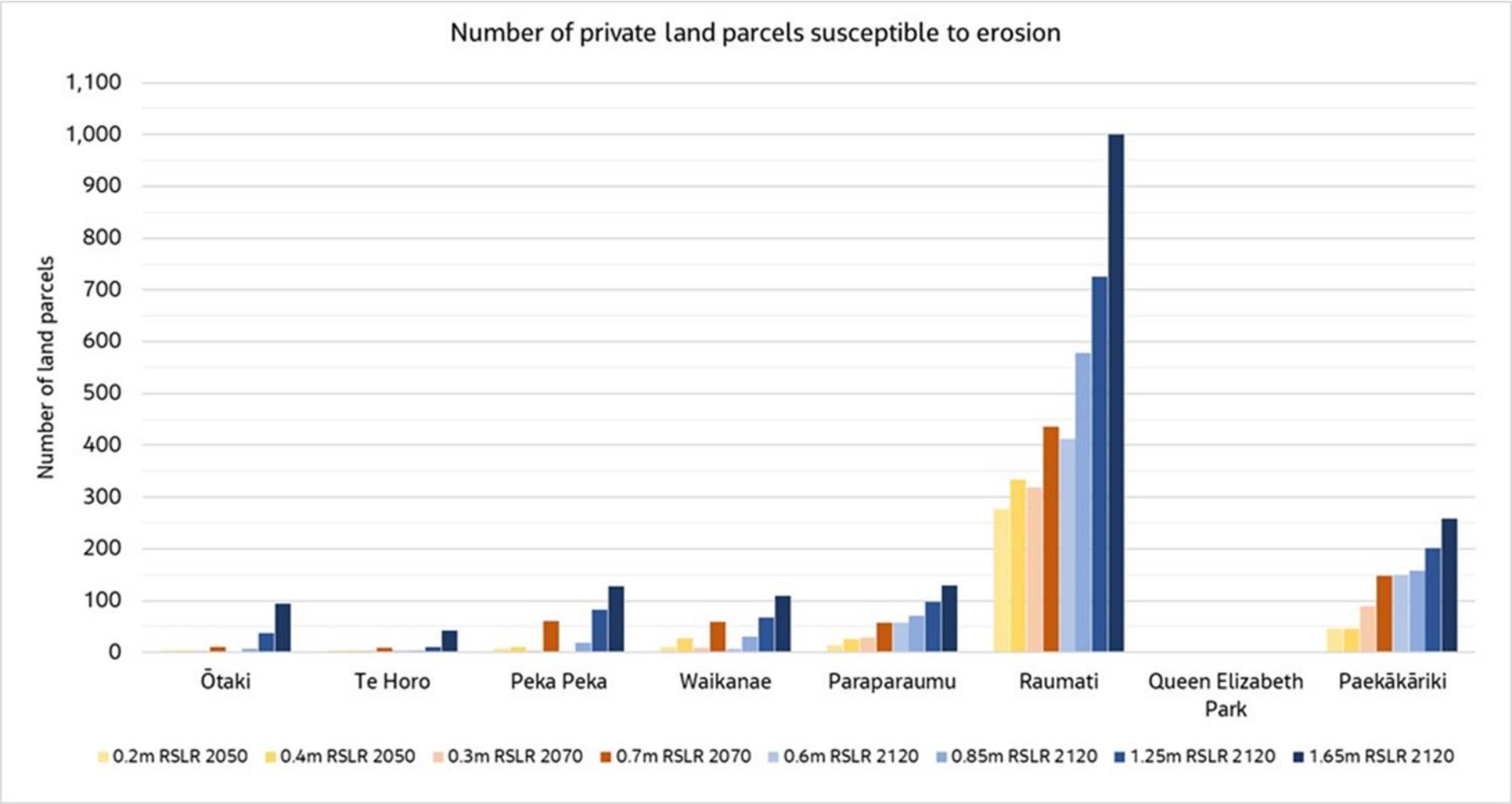
What we looked at

- Coastal hazards in 30, 50, 100 years in low and high scenarios:
  - Coastal erosion
  - Coastal flooding (not rainfall or rivers)
  - Number of vulnerable private and public properties
  - Location of vulnerable Council / community infrastructure and services

Erosion – key findings

- Southern – susceptible to erosion under all RSLR scenarios
  - more susceptible to future coastal erosion than northern areas
- Northern – under lower RSLR projections: some accretion, low amounts of erosion (e.g. from storms)
- Northern – under higher RSLR projections: erosion is projected and will increase over time

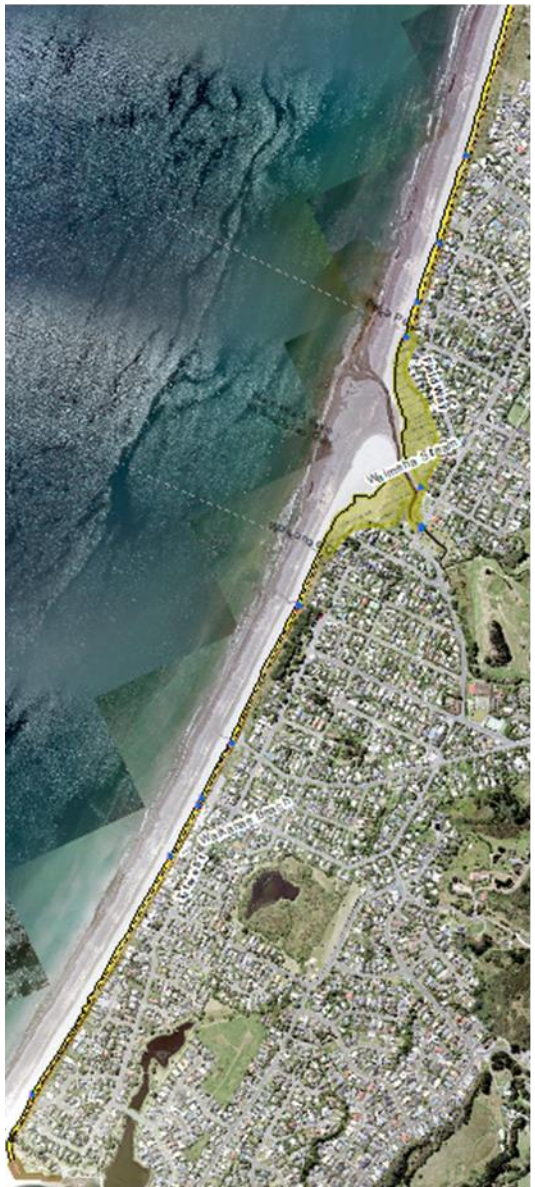
Vulnerable private property

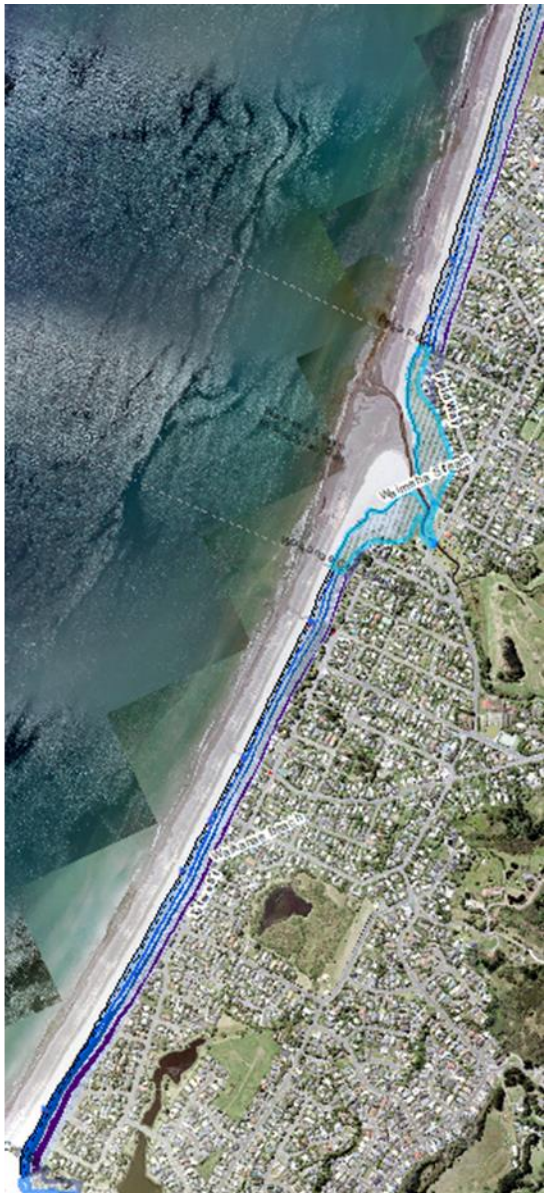


Vulnerable council assets

- Coastal stormwater outfalls
- Lengths of roads potentially affected are:
  - 2.3 km by 2050
  - 4.8 km by 2070
  - 9.9 km by 2120 (mostly in Raumati 3.7 km, Paekākāriki 3.6 km, Ōtaki 1.8 km)
- No schools, medical centres or hospitals

What the erosion maps show

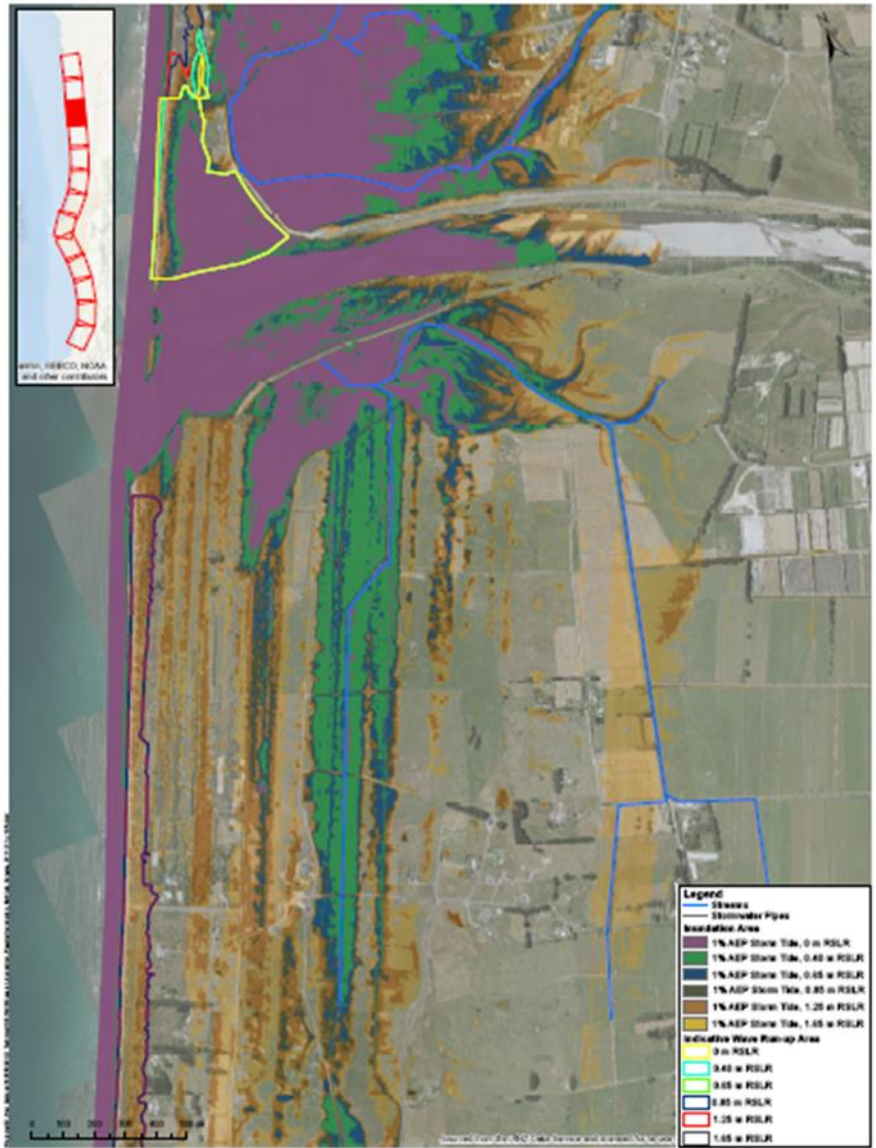




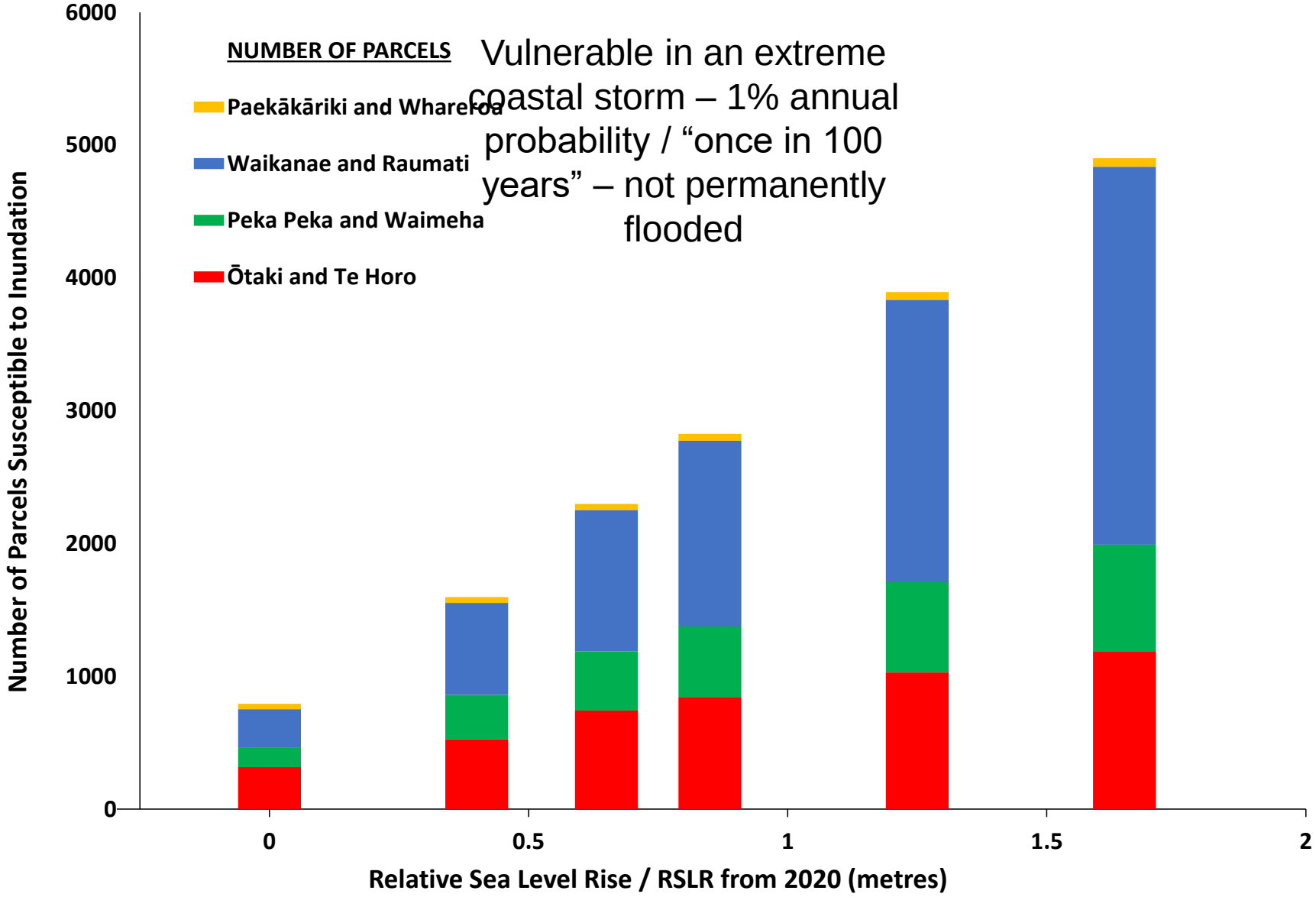
Coastal flooding – key findings

- Southern – higher elevation
  - Coastal flooding mostly confined to river mouth/inlets
- Northern – lower lying
  - much more susceptible to coastal flooding

What the flood maps show



Vulnerable private property



Vulnerable council assets

- Stormwater pumps
- Water supply bores
- Roads for access to and evacuation from coastal communities

Communications

- FAQs, talking points for EMs
- Pre-release:
  - Building awareness through media, brochure in rates, Everything Kāpiti articles, TK e-news
- Post-release:
  - Focus is on purpose and context: media, website(s), factsheets, public Q&A
  - Technical info to guide infrastructure investment, District Planning, CAP etc

What now?

- Report is vital technical information for CAP
  - More coming: social impacts, economic modelling, cultural assessments
- Next steps: talk about how we adapt
  - Coastal Advisory Panel to lead public conversations on adaptation options e.g. dune planting, seawalls, raised floors, relocatable buildings, change where we build, future technological solutions?
- Delay acting = options are more restricted and costly, problem lands on our kids

Questions?

Photo: Kevin Stent/Fairfax NZ

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