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Strategies for adapting to the changing climate – a panel discussion

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- > Mayor Dave Cull, Dunedin City Council
- > Maria Ioannou, Corporate Policy Manager, Dunedin City Council
- > Mayor Tony Bonne, Whakatāne District Council



**Dunedin: strategies for adapting
to the changing climate**
LGNZ Climate Change Symposium

South Dunedin



A greater than 1-in-100 year event caused major floods in June 2015

South Dunedin past



South Dunedin was a coastal estuary in the early days of pakeha settlement (circa 1864, Hocken Collection)

South Dunedin past



South Dunedin sits on a variety of natural and man-made substrates, on top of volcanic rock (Source: Otago Regional Council)

South Dunedin: What's been done since 2015?



We've made improvements to our existing infrastructure and it's maintenance, to ensure it works as well as possible

South Dunedin: What's been done since 2015?



We have increased our focus on building community preparedness and interaction with, and support for, volunteers

South Dunedin: What's been done since 2015?



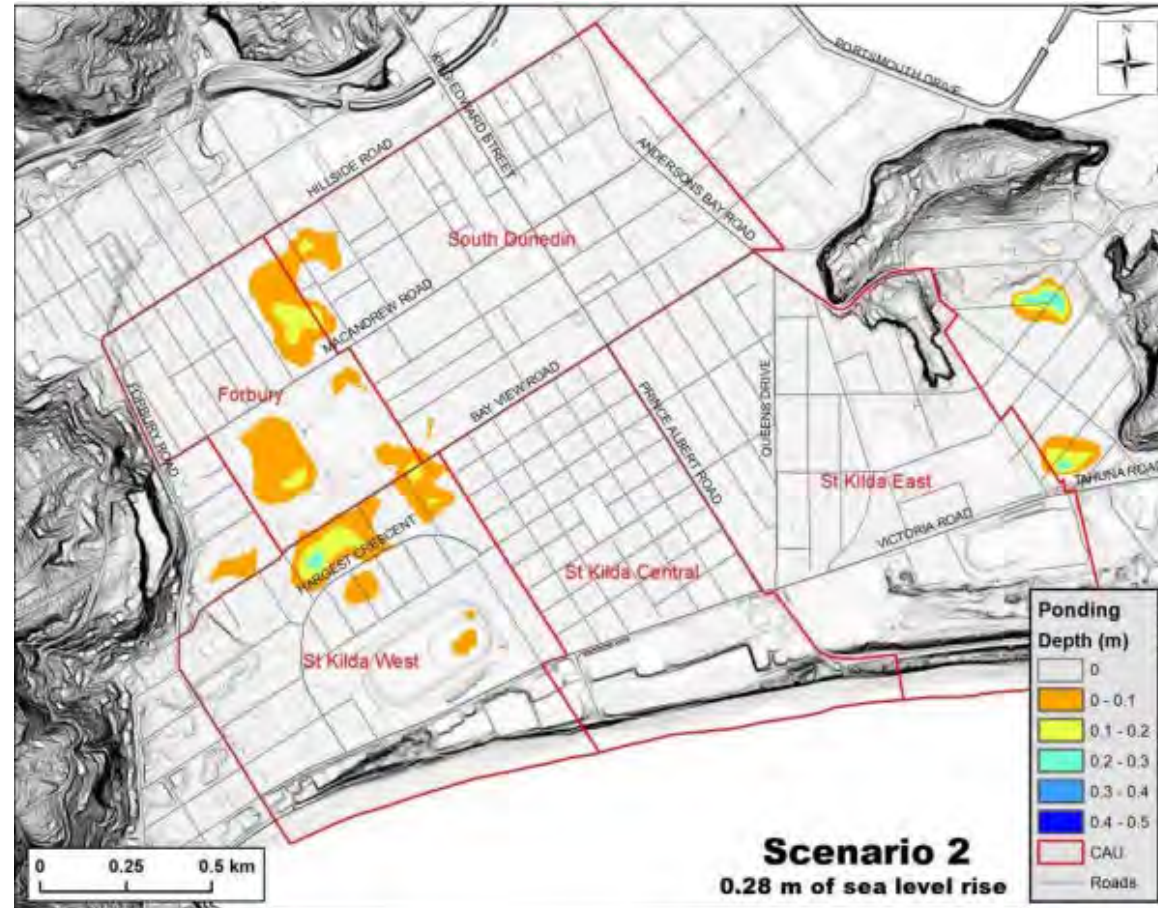
More sandbags, door-knocking and information centres during heavy rain events

South Dunedin: What will we do next?



Investing over \$50 million on a wastewater diversion and upgrade of a treatment plant to stop wastewater overflows in South Dunedin during heavy rain

South Dunedin future



Predicted surface ponding in South Dunedin at 28cm of sea level rise
(Source: Otago Regional Council)

South Dunedin: What will we do next?



We are entering long-term, meaningful engagement with the community

South Dunedin: What will we do next?



New stormwater ideas are being applied across the world

Adapting to natural hazards in the Whakatāne District

A snapshot of challenges

- Flooding
 - Debris flow
 - Coastal hazard inundation and erosion
 - Landslide on escarpments
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- An aerial photograph showing a coastal area with significant flooding. A river flows through the center, with muddy water inundating surrounding fields and residential areas. A road runs along the bottom left, and a long concrete structure, possibly a dam or breakwater, extends into the water on the right. The background shows a coastline with hills under a cloudy sky.

1. Flooding and flood prevention



Edgecumbe Flood - Steps to adapt



Working with Community



Elected Members and Staff cooperation



2. Debris flows

Case Study - Awatarariki Debris Flow





Engineering Solutions Considered.....



But had to move to a planning solution....

Plan Changes



- Initiated by Whakatāne District Council
- Gives effect to the RPS
- Retreat is only viable risk reduction solution
- Strong evidence base using RPS approved assessment methodology
- Requires a new rule in a Regional Plan
- Extinguishes existing land uses in high debris flow risk area

Debris Flows - Working with community



- First attempt to bring Plan Change to Council failed
- Risk not defined well enough – took time to tell better story
- RPS defined policy position limiting some options
- Inconsistency between the RMA and Building Act (s72)
- Extensive options analysis and peer reviews
- Elected representation on Consensus Development Group
- Strong leadership built up over time, and consistent position held in face of opposition

- Community aspirations
- No national guidance framework in place
- Social impacts on individuals and community
- Funding – basis for valuations
- Commitment over election cycles

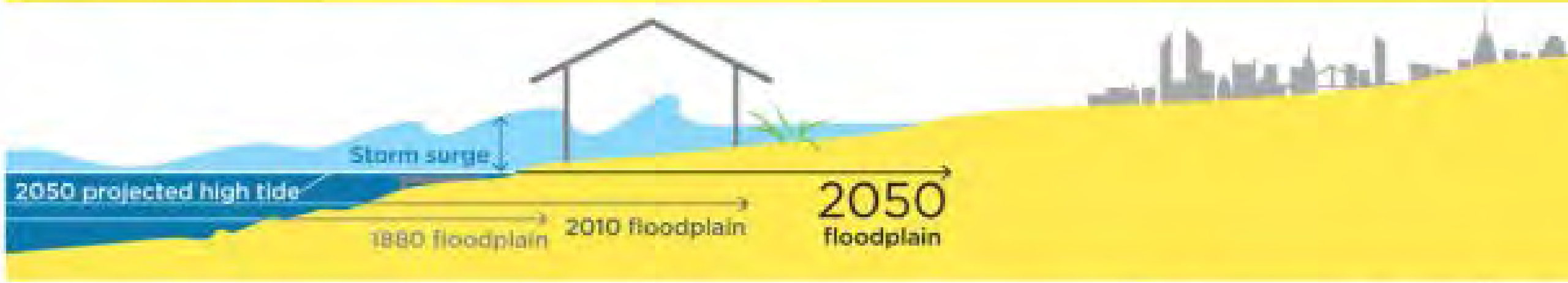


3. Coastal hazards



Whakatāne and Ōhope are subject to coastal inundation and erosion

Coastal Hazard lines - Steps to adapt



- Extensive consultation with community
- Public meeting with 200 people attending
- Alternative view expressed from retired GNS scientist – needed to consider seriously
- Plan Change allowed development under certain circumstances that reflected uncertainty of predicted events occurring

Elected Members and Staff cooperation



4. Landslide Escarpment



Escarpment - Steps to adapt



Working with community

- Mitigation by landowner under escarpment accepted but expensive
- Focus currently on non-regulatory approach
- Education through information e.g. LIM's, website
- Monitoring and management of vegetation – annual budget
- Some resistance from landowner of escarpment (Iwi based)



WDC Climate Change project

- Cross-organisation Climate Change project team
- Steering Group (senior staff and elected member)
- Policy Committee

Kia ora tātou

www.whakatane.govt.nz