



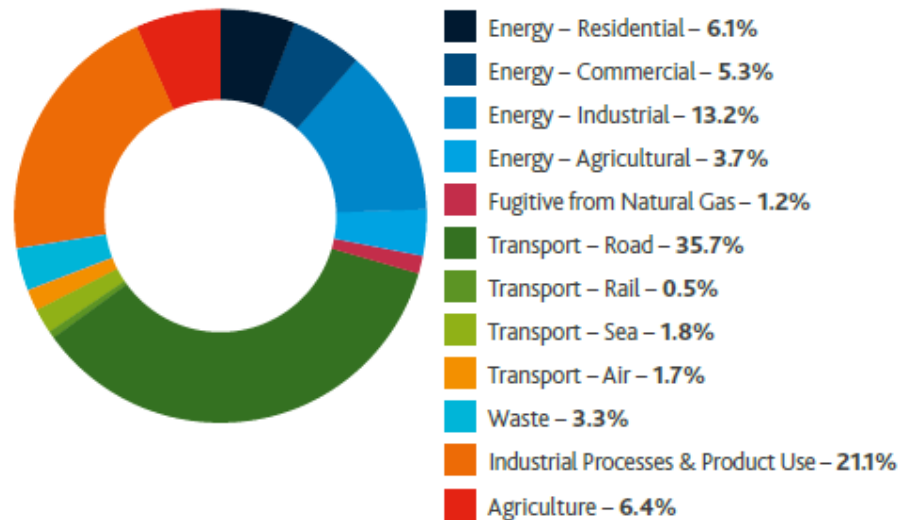
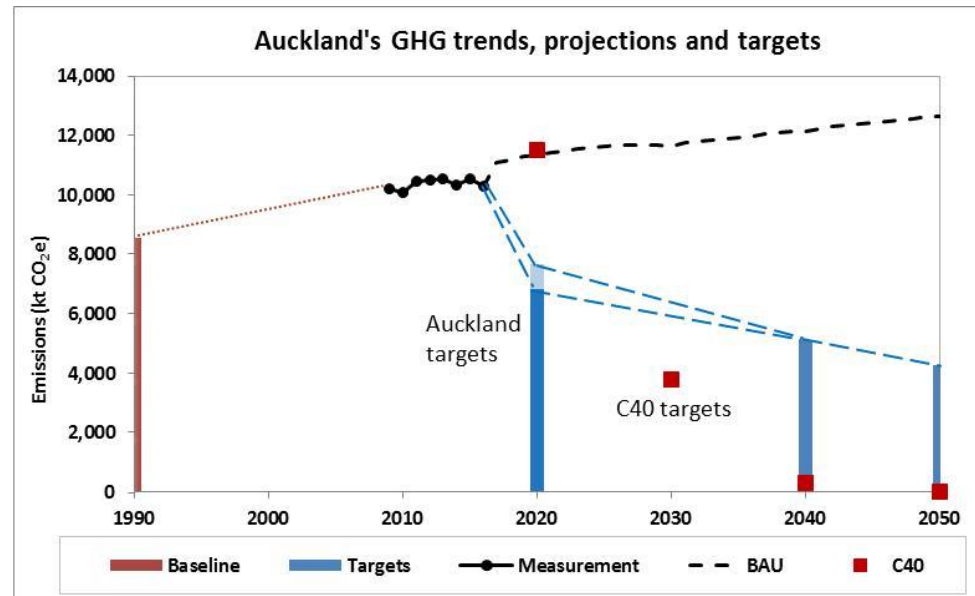
Inclusive, Integrated Climate Action Planning

*Dr Sarah Anderson, Principal Specialist -
Climate Resilience and Sustainability
Auckland Council*

BE THE HOW.
WHAKAMAUA KIA TINA!



Auckland's emissions

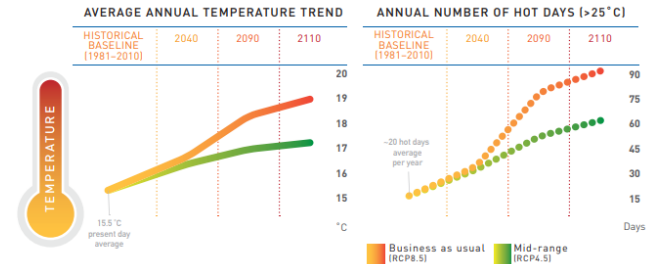


What we know



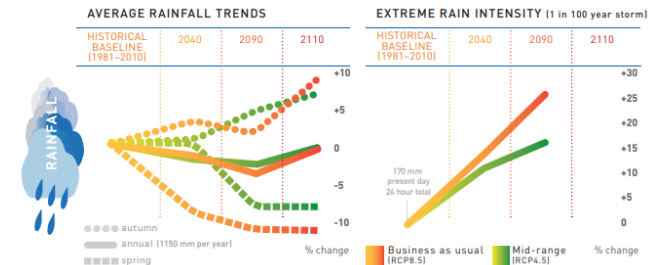
INCREASING TEMPERATURES

The average annual temperature in Auckland has increased by about 1.6 °C over the past century and is expected to increase through the 21st century.



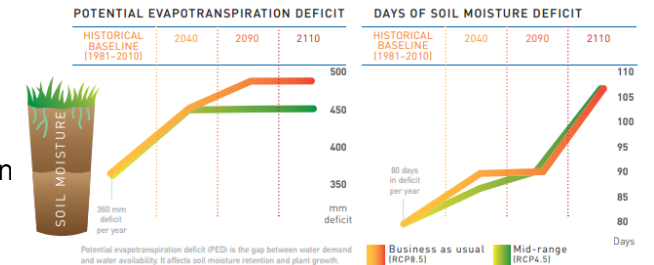
INCREASE IN EXTREME WEATHER

Seasonal rainfall patterns will change with wetter autumns and drier springs. Increasing extreme rainfall intensity is likely because warmer air holds more moisture.



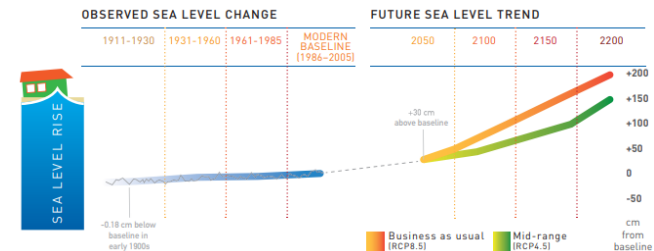
INCREASING CHANCE OF DROUGHT

Longer dry spells will mean increased potential for drought conditions. Moisture in our soil is expected to decline due to increased evaporation and changing rainfall patterns.



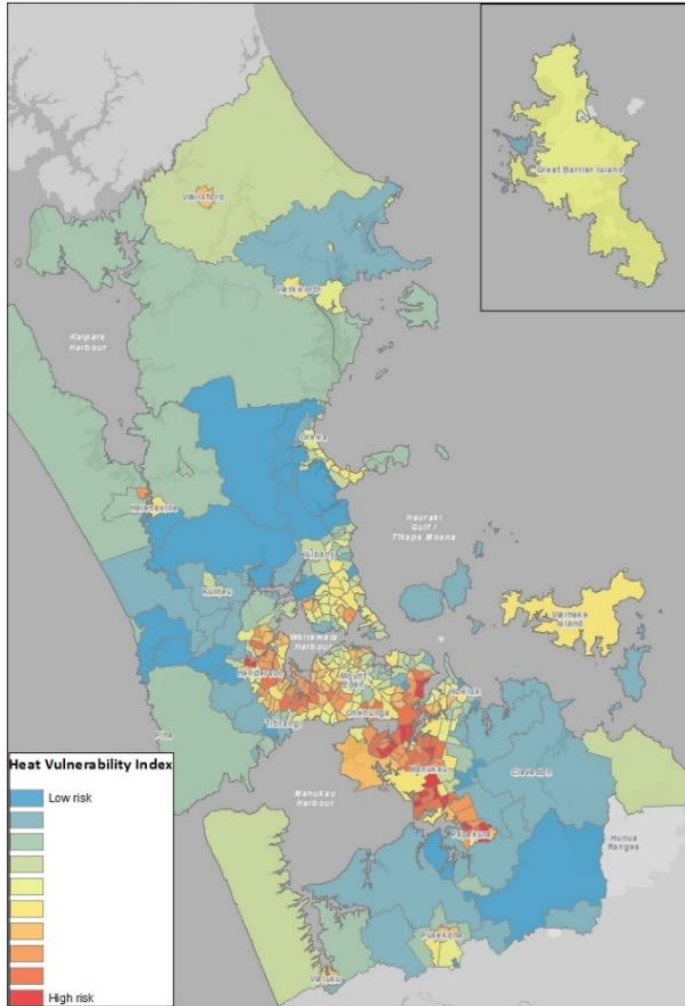
SEA LEVEL RISE & OCEANIC CHANGE

Sea levels around Auckland have risen. This is expected to continue and potentially accelerate.



Understanding our risk and vulnerabilities

Figure 1. Auckland Region Heat Vulnerability Index Maps



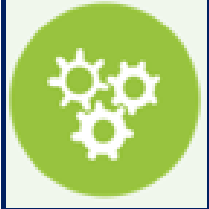
- Infrastructure and Land Use
- Coastal communities
- Air Quality and Public Health
- Social Vulnerability Assessment
- Heat and vulnerability
- Aquatic and marine ecosystems
- Terrestrial ecosystems
- Economy
- Climate related migration

Research Team:

Nancy Golubiewski, Jamie Boyle, Jennifer Joynt, Nick Talbot, Mario Fernandez, Megan Carbines, Melissa Foley, Craig Bishop, Todd Landers

Auckland's Climate Action Plan will set a path
to **rapidly reduce greenhouse gas
emissions** while ensuring Auckland is
**prepared for the impacts of climate
change**

Why integrate?



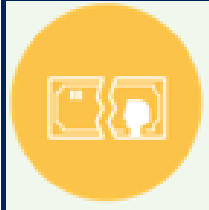
Synergies: *The win-wins*

C4O
CITIES



Trade-offs: *Actions with contrary effects*

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Mal-investment: *Actions that are not resilient*

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Piggybacking: *Actions that can be supplemented*

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Synergies: Rotterdam, Hamburg, Washington

Color Roofs

- **Green:** Space for Nature
- **Yellow:** Generating Energy
- **Red:** Extra Square Footage
- **Blue:** Water Management
- **Rainbow Roofs:** The ideal mix is a multifunctional roof

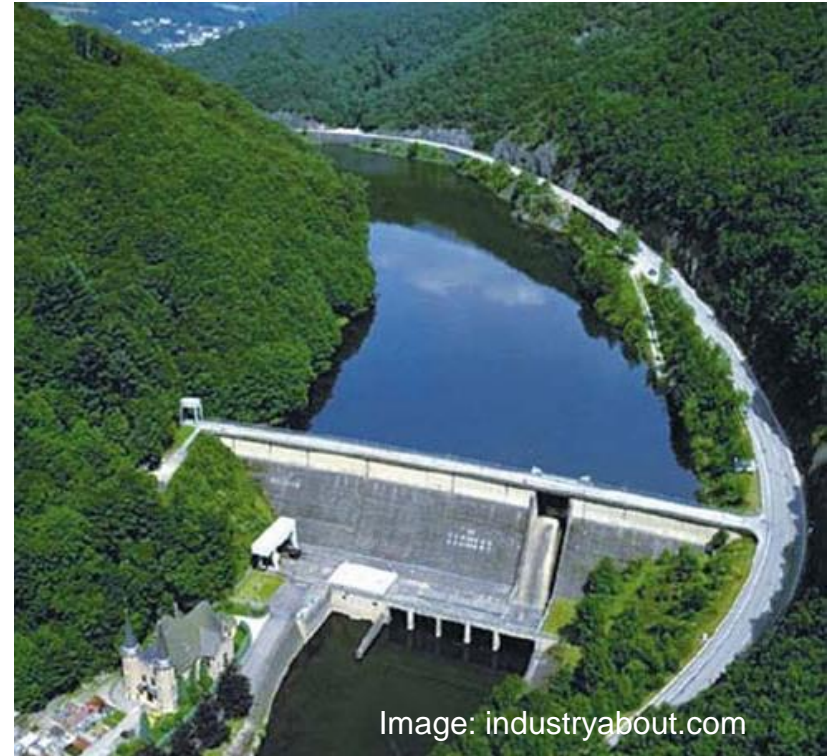


“Combination creates a business case.”

Synergies: Durban, South Africa



Mal-investments: Tajikistan, Rotterdam



Piggybacking: Melbourne

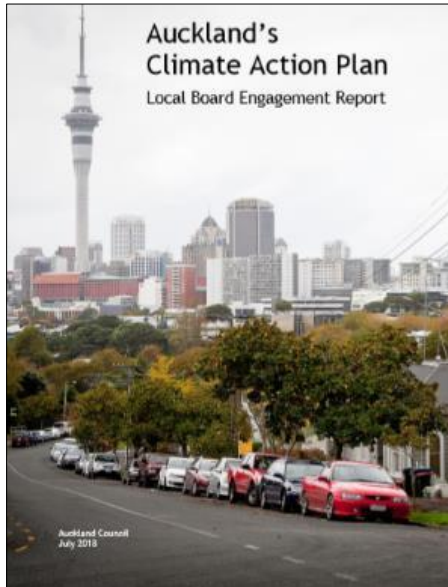


But also for us.....



- Clear engagement and communication
- Opportunities for innovation and leadership
- Value for money and co-funding

A bigger conversation



Welcome to the Ideas Hub | Auckland Council

Auckland's climate is changing.

We need to take action.

You can help.

[Find out how](#)

Penny Hulse
Councillor, Waitakere Ward Auckland Council

climateAKL.co.nz

Emerging priorities

- **Communities:** *Building resilience, decision powers and inclusivity, financing, coastal compartment management plans, community-led initiatives*
- **Buildings, places and spaces:** *Regulation, retrofit, district schemes and renovation zones, green infrastructure, low emission areas, productive roofs*
- **Systems and infrastructure:** *Resilience interdependencies, energy generation and efficiency, protecting and enhancing green space, food security, integrated water management, compact and connected*
- **Future fit economy:** *Circular economy, skills diversification, business continuity, equitable transition, start ups and growth industries*

Auckland's urban ngahere

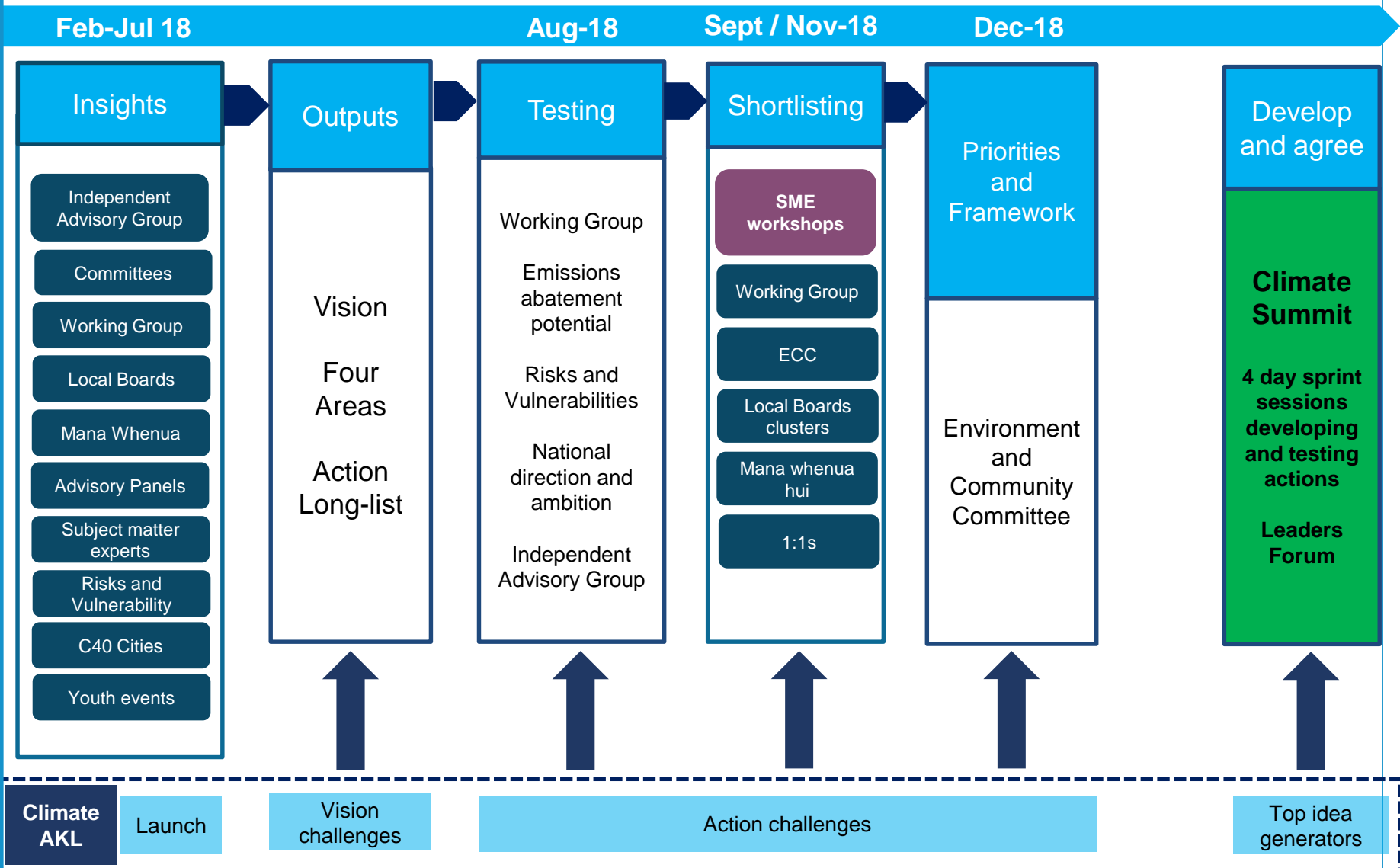


- Improves air quality
- Sequesters carbon
- Provides habitat and greater diversity
- Reduces flows and nutrients in stormwater
- Enhances the Mauri of the forest
- Provides shade and cooling

- Encourages outdoor activity
- Improves mental wellbeing
- Reinforces sense of place and city identity
- Improves community cohesion

- Enables health savings
- Enables energy savings
- Avoids cost of infrastructure damage
- Generates carbon revenue





Thank you!

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climateAKL.co.nz