

Flooding in Kumeū

February 2025



Agenda

- Welcome from Councillor Greg Sayers (10 minutes)
- Nick Vigar, Head of Network Planning, Healthy Waters, Auckland Council (25 minutes)
- John Duguid, General Manager Planning and Resource Consents, Auckland Council (10 minutes)
- Future Kumeū (15 minutes)
- Q&A (20 minutes) (facilitated by Councillor Sayers)



Kumeū Community

Flood Management

Nick Vigar

Head of Network Planning – Healthy Waters

Auckland Council

February 2025



What I'll be covering

Flooding

- History and causes of flooding
- Climate Challenges
- Floodplains

Options Assessed

- Stream widening
- Diversion
- Detention (dam)

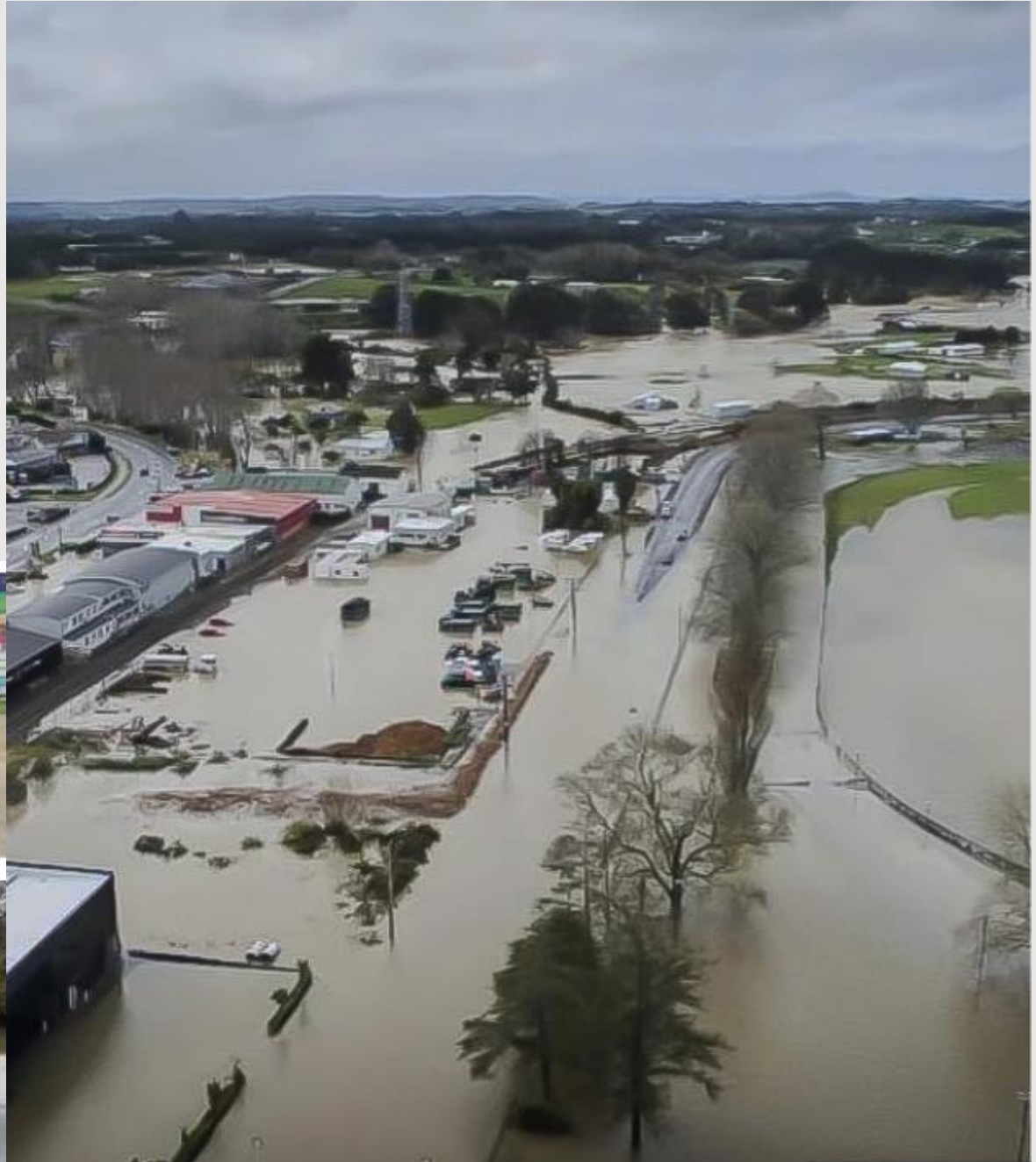
What's being done now

- Resilience
- Monitoring
- Preparedness

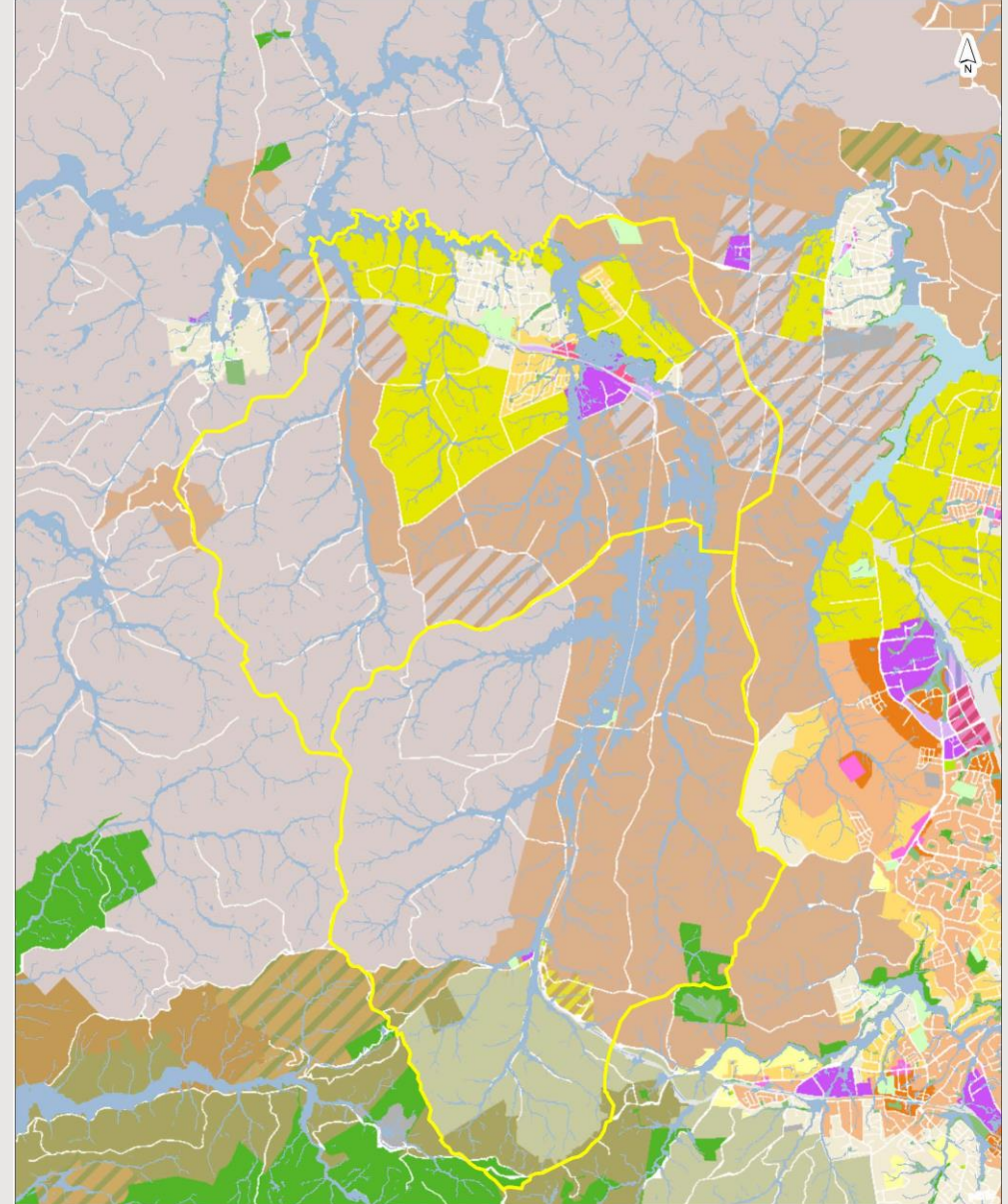
Future of Kumeū

- Future considerations for providers and developers





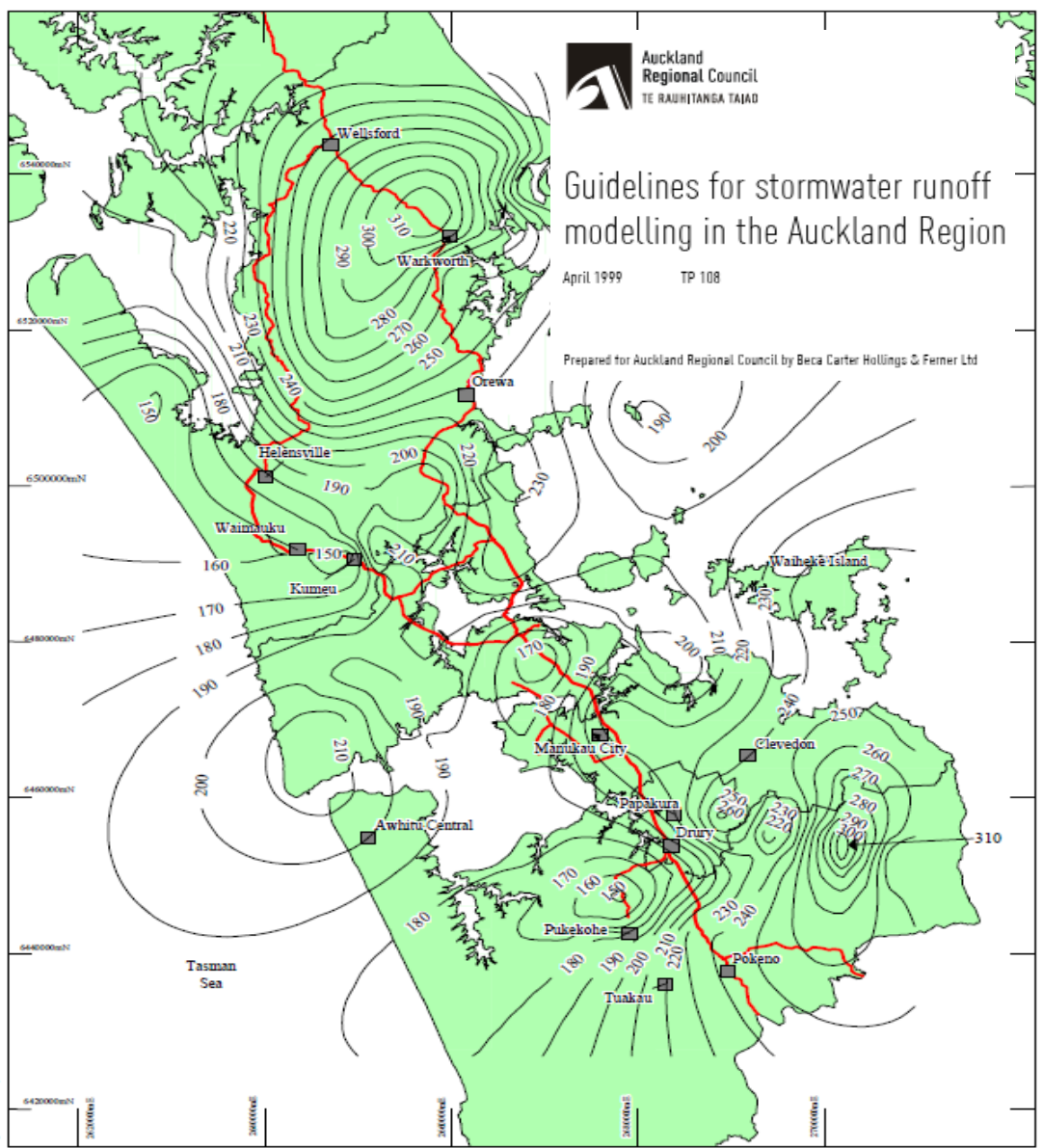
Taupaki and Kumeū Huapai Catchments



Causes of flooding

- Large catchment (6,010 ha)
- Large portion of township located within 100 yr floodplain
- Low-lying topography
- Proximity of development to waterways
- Spilling of Kumeū River and Huapai Streams,
- Overtopping of bridges and culverts





Guidelines for stormwater runoff modelling in the Auckland Region

April 1999 TP 108

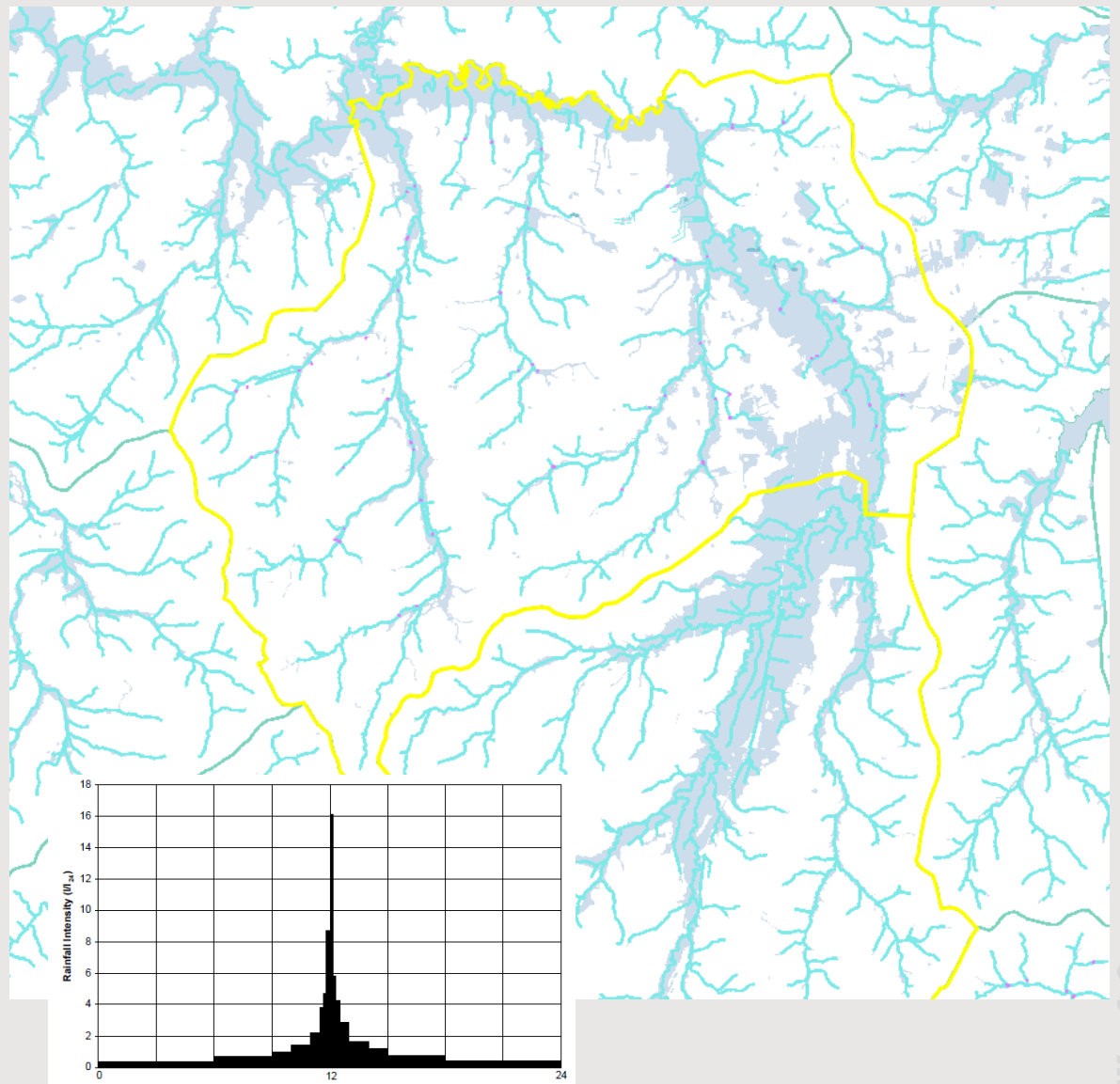
Prepared for Auckland Regional Council by Beca Carter Hollings & Ferner Ltd

Legend: — 90 — Rainfall Contour (mm)
 — State Highways

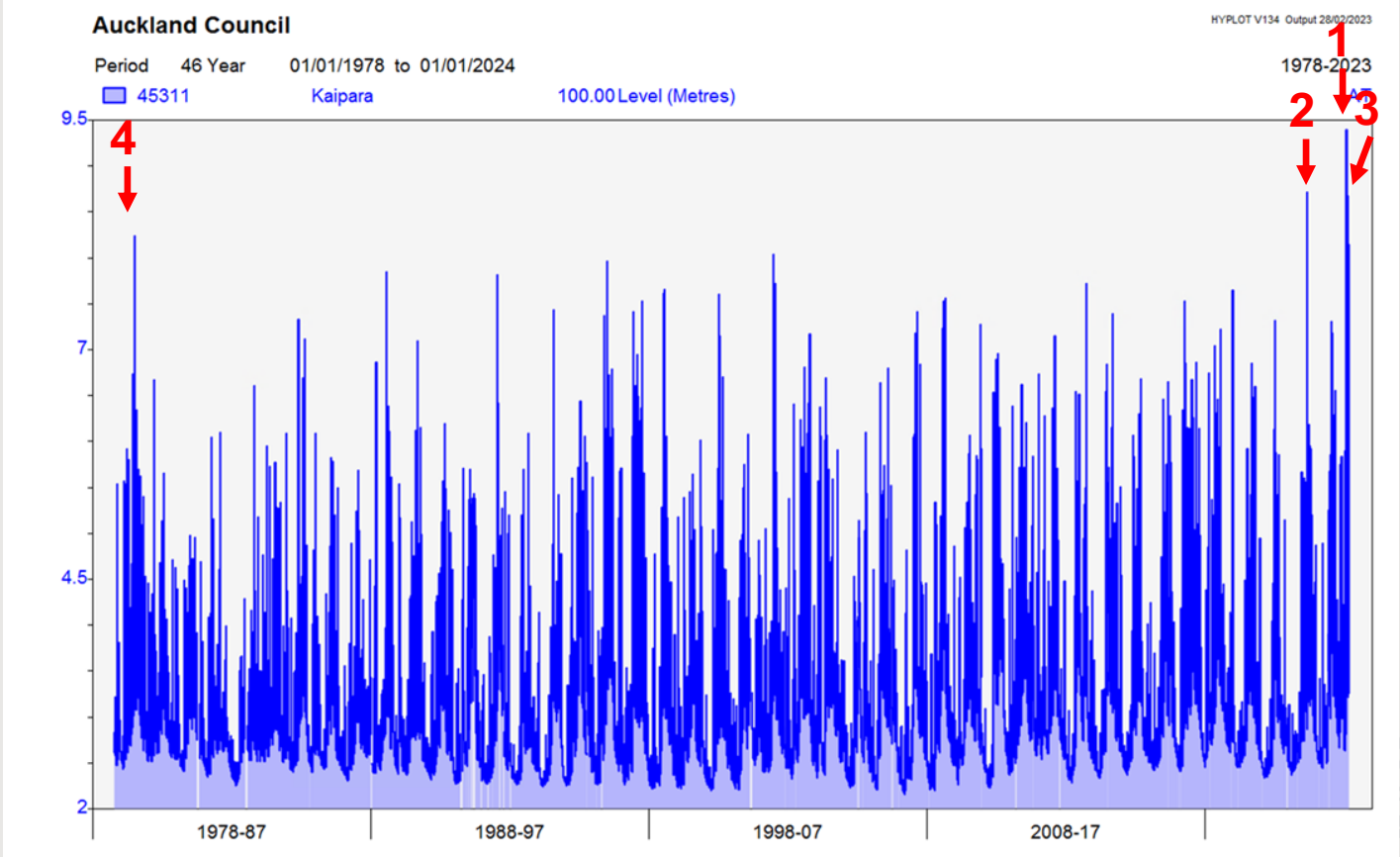
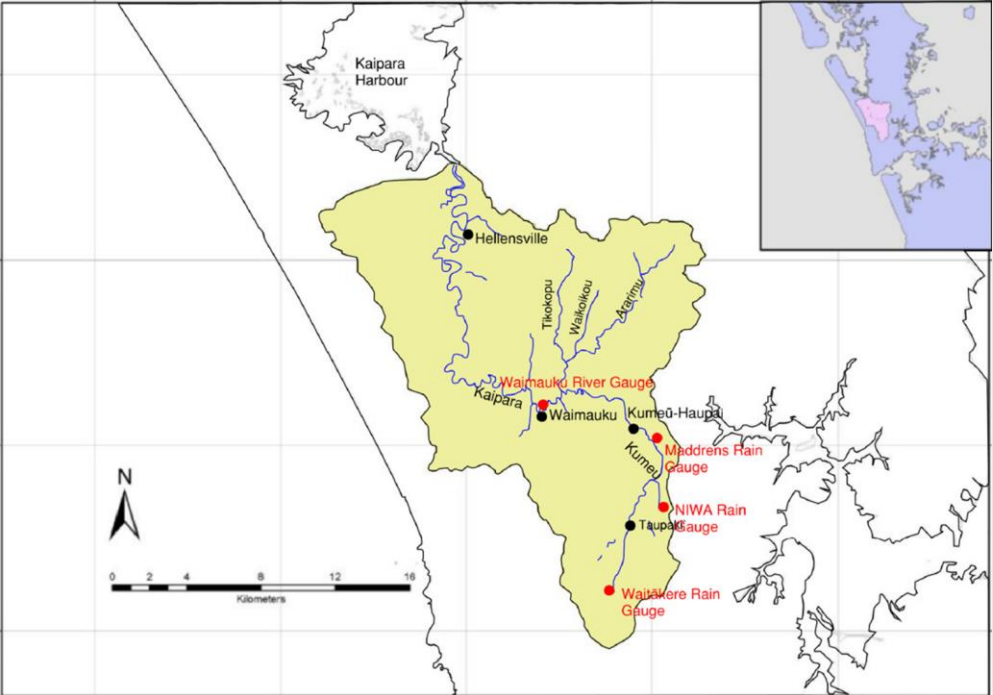


Figure A.6
100 Year ARI
Daily Rainfall Depth
 Scale: 1:600,000 (at A4)
 (Revised 25/08/1999)

'100 Year' Floodplain

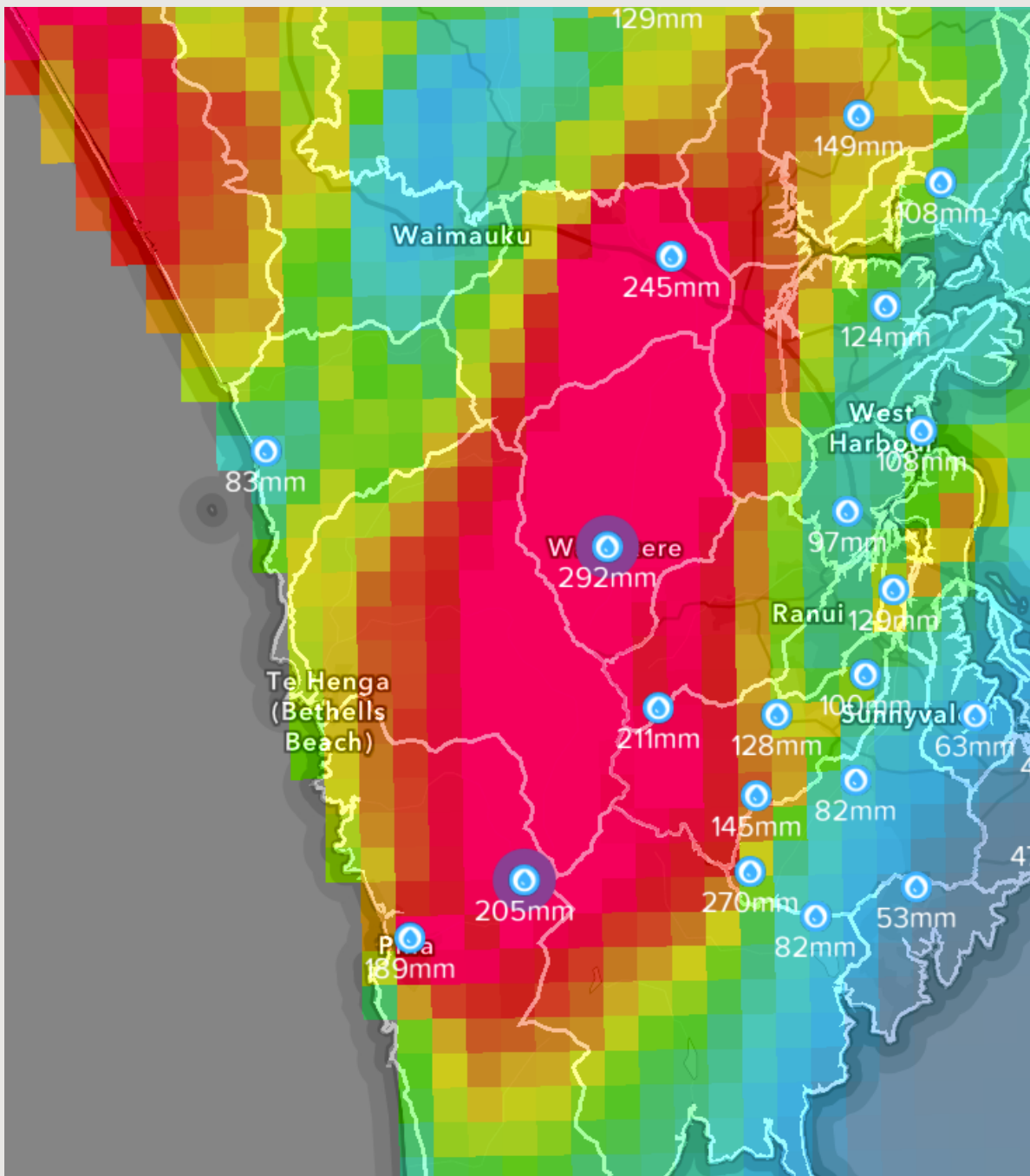


Kumeū River – flooding data



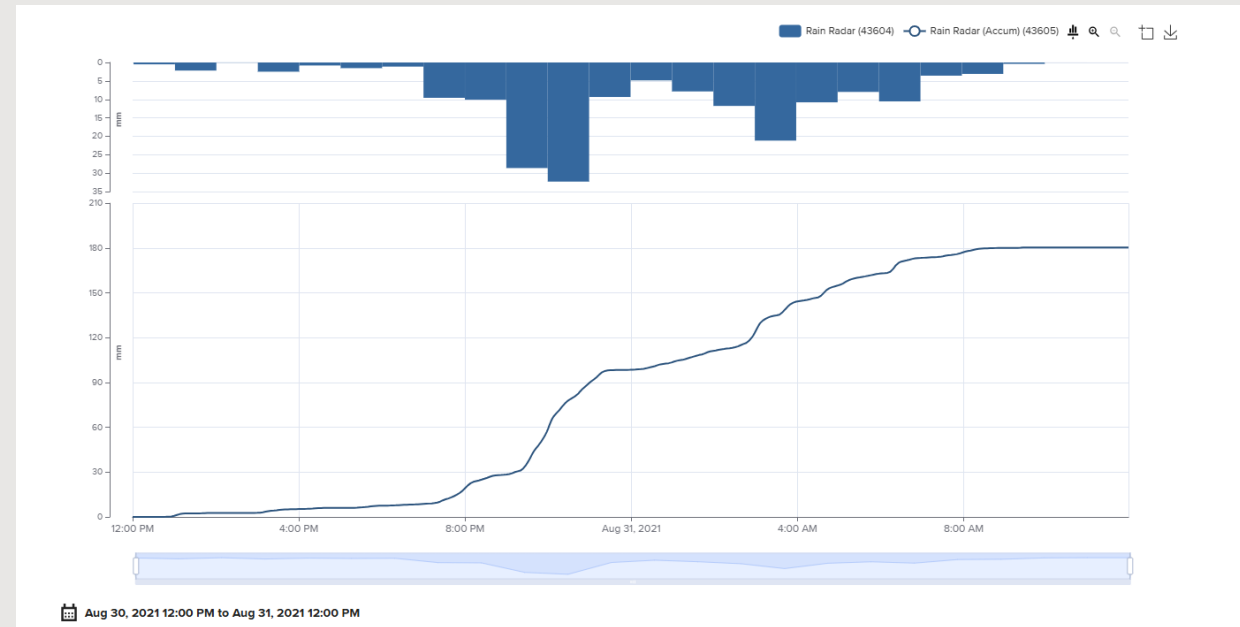
Event	Level (Waimauku gauge)	Rank (since 1971)
30 th June 1979	8.24 m	4
31 st August 2021	8.71 m	2
27 th January 2023	9.38 m	1
14 th February 2023	8.62 m	3





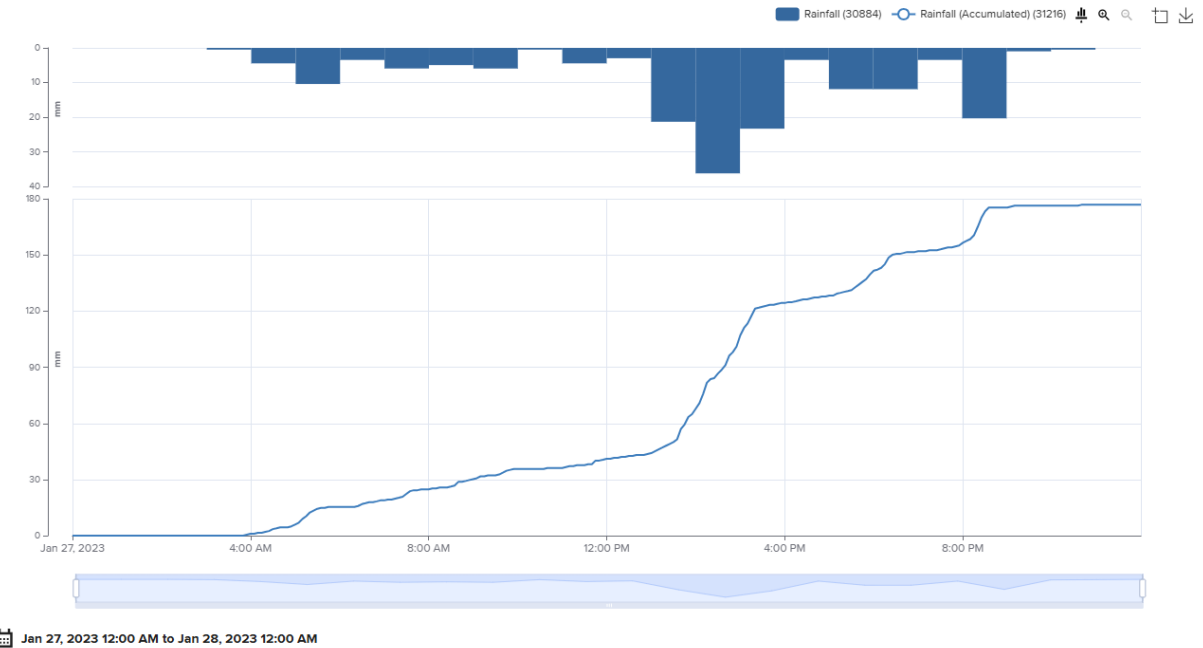
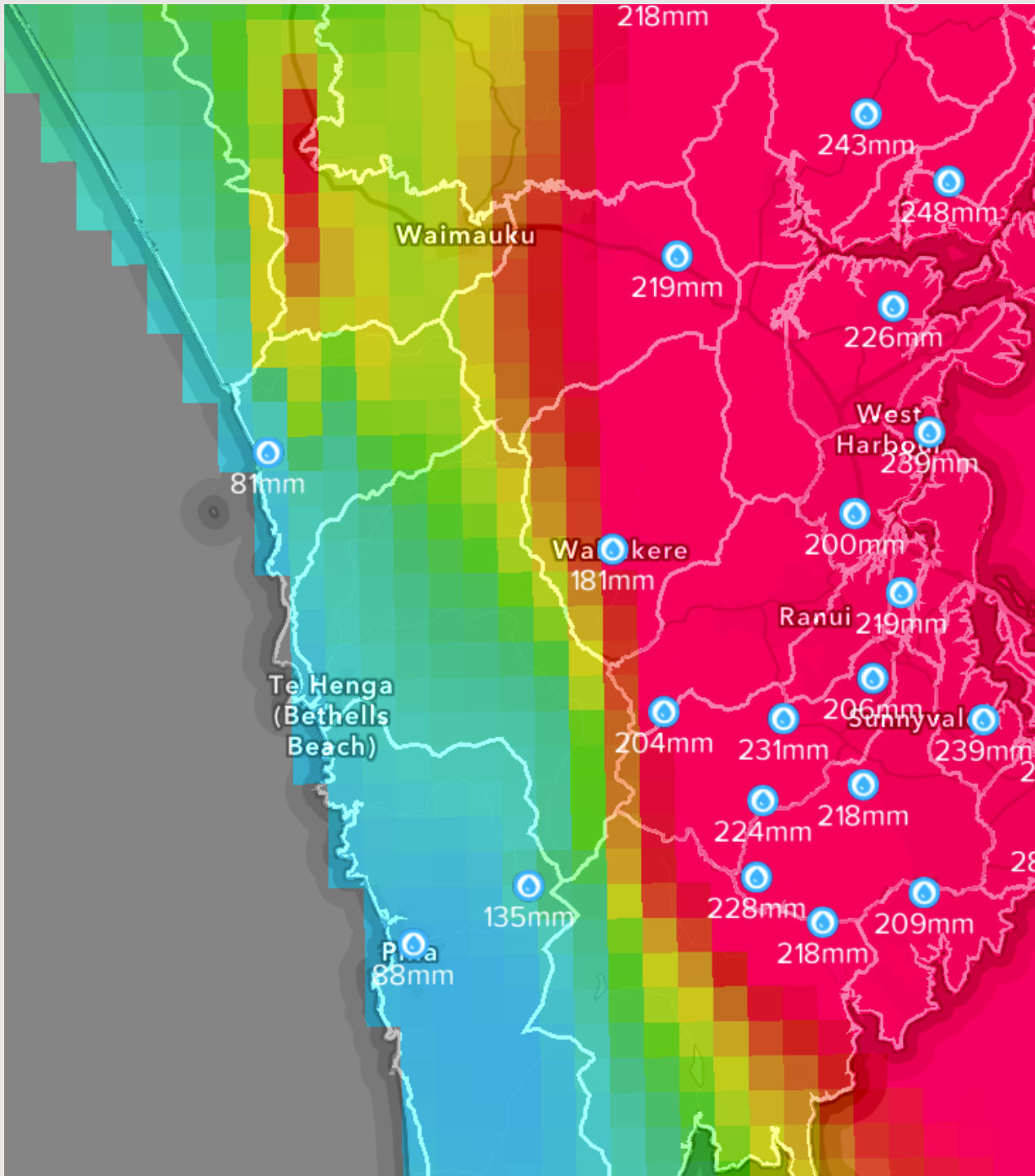
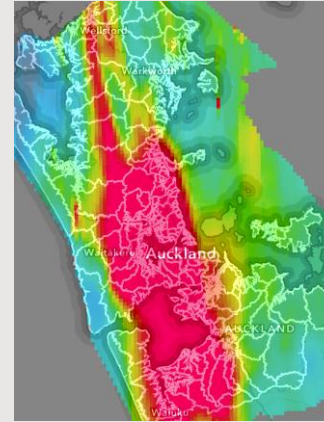
31st August 2021

- 2nd largest recorded level of Kumeū River
- 292 mm recorded over 24 hours at Waitakere Domain rain gauge over 24 hours
- 176 mm recorded over 12 hours



27th January 2023

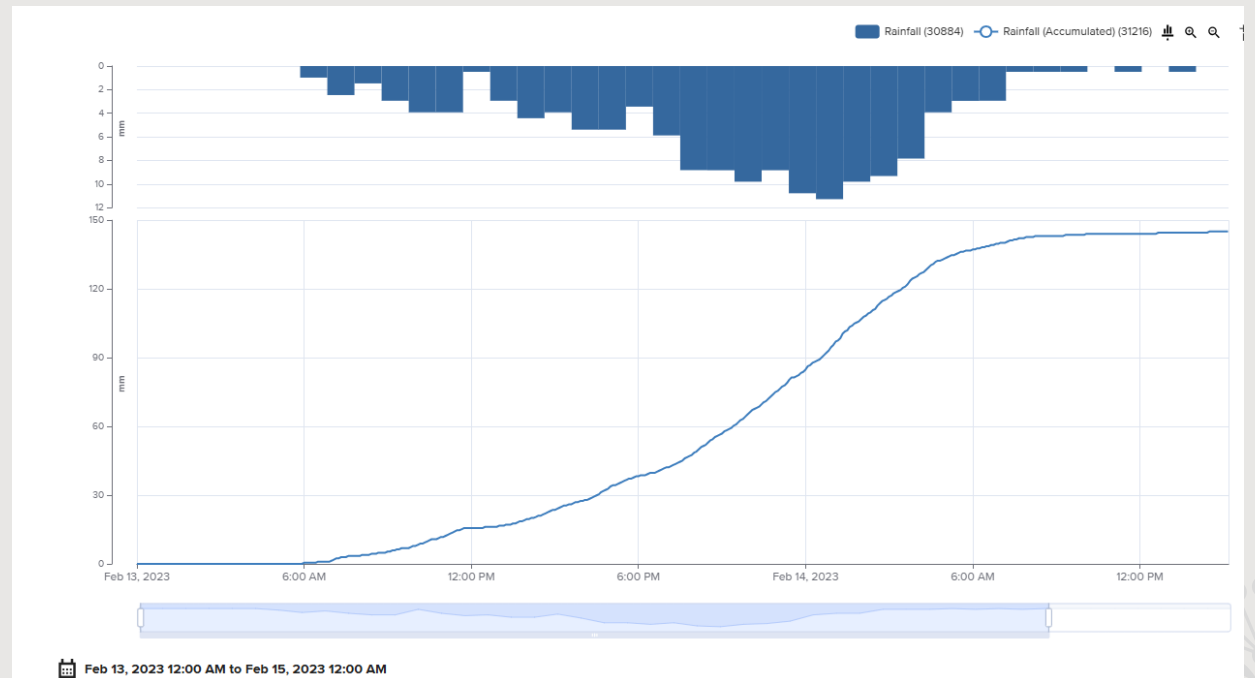
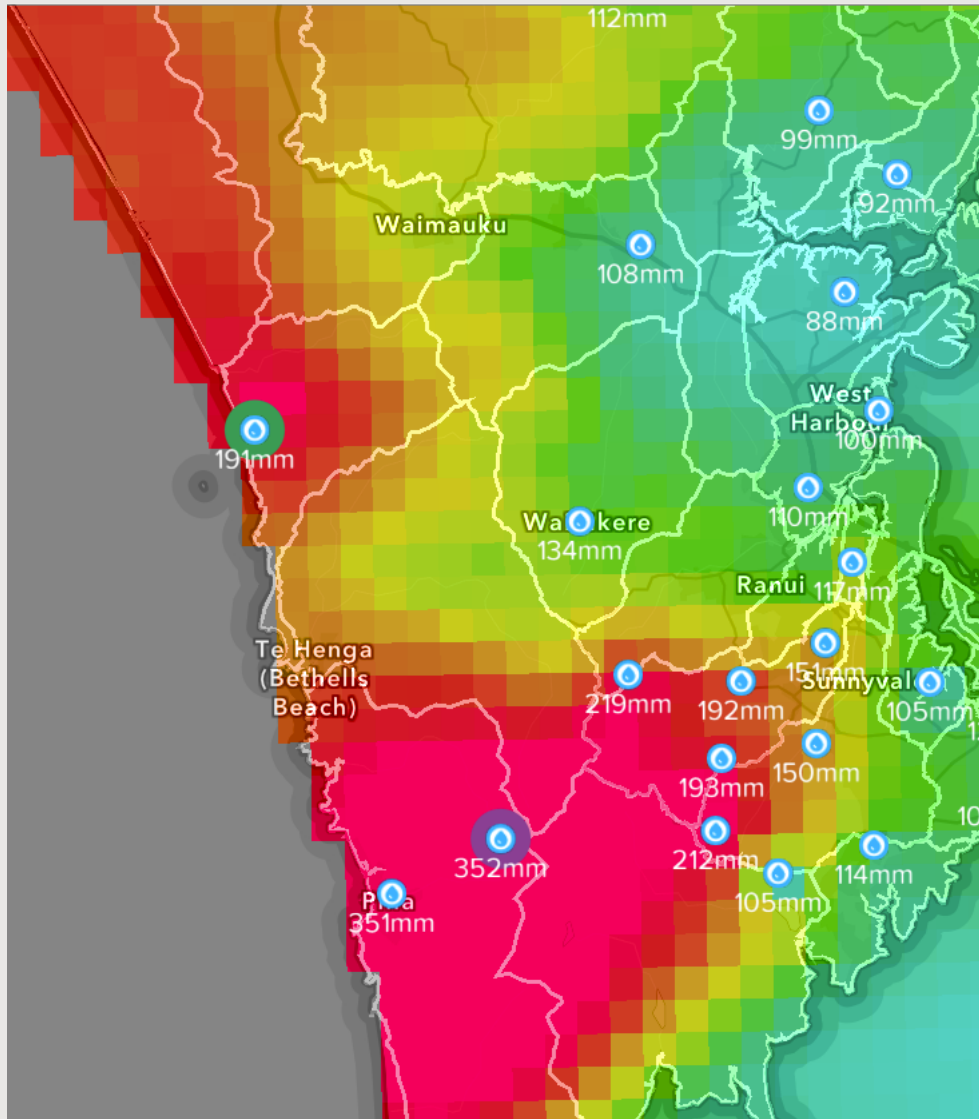
- Largest recorded level of Kumeū River
- 181 mm recorded over 24 hours at Waitakere Domain rain gauge over 24 hours
- 135 mm recorded over 8 hours



Jan 27, 2023 12:00 AM to Jan 28, 2023 12:00 AM

14th February 2023

- 3rd largest recorded level of Kumeū River
- 134 mm recorded over 12 hours at Waitakere Domain rain gauge



Floodplain updates

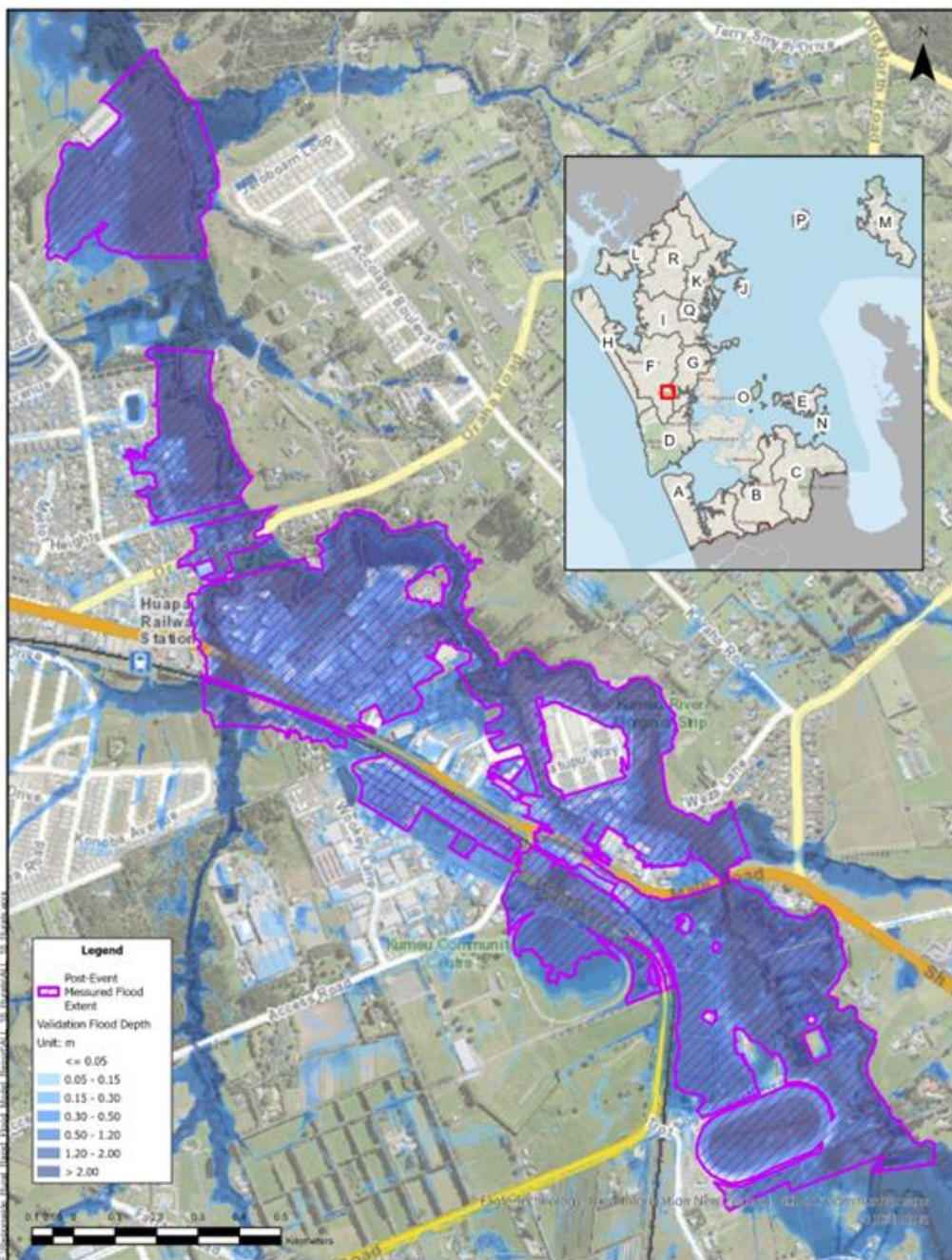
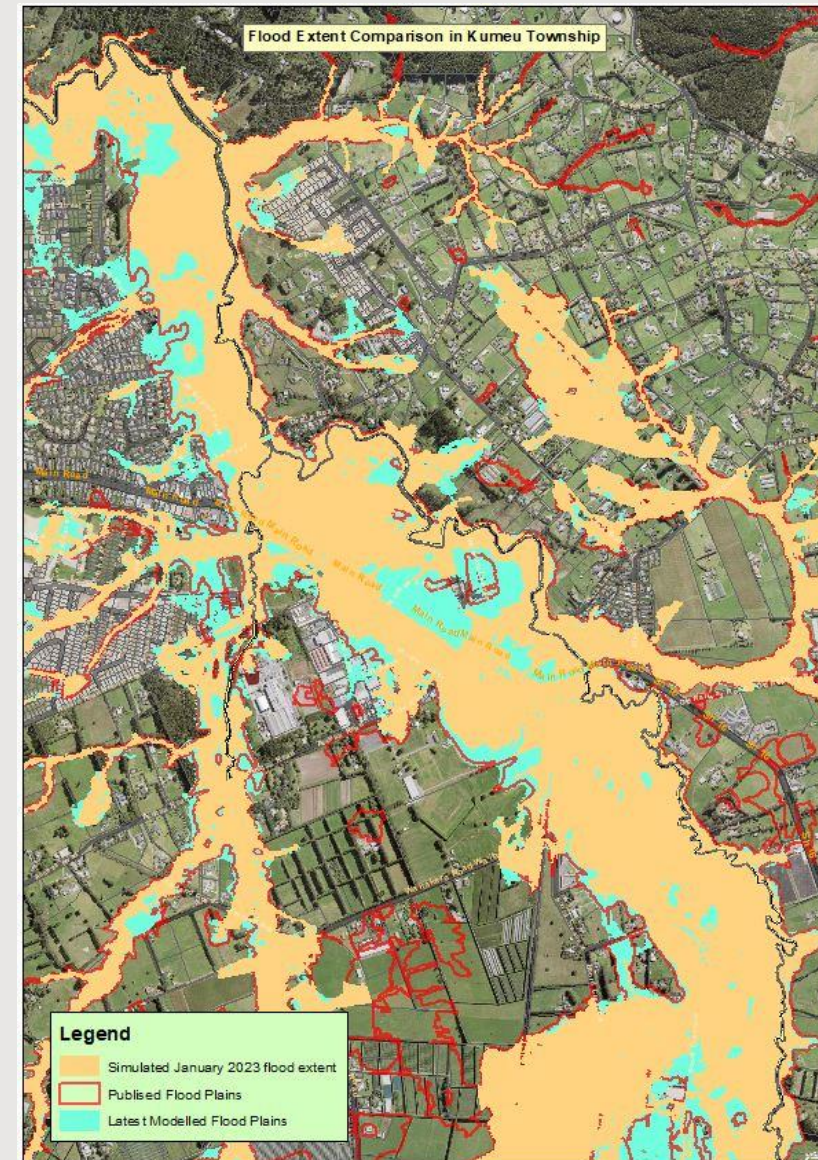
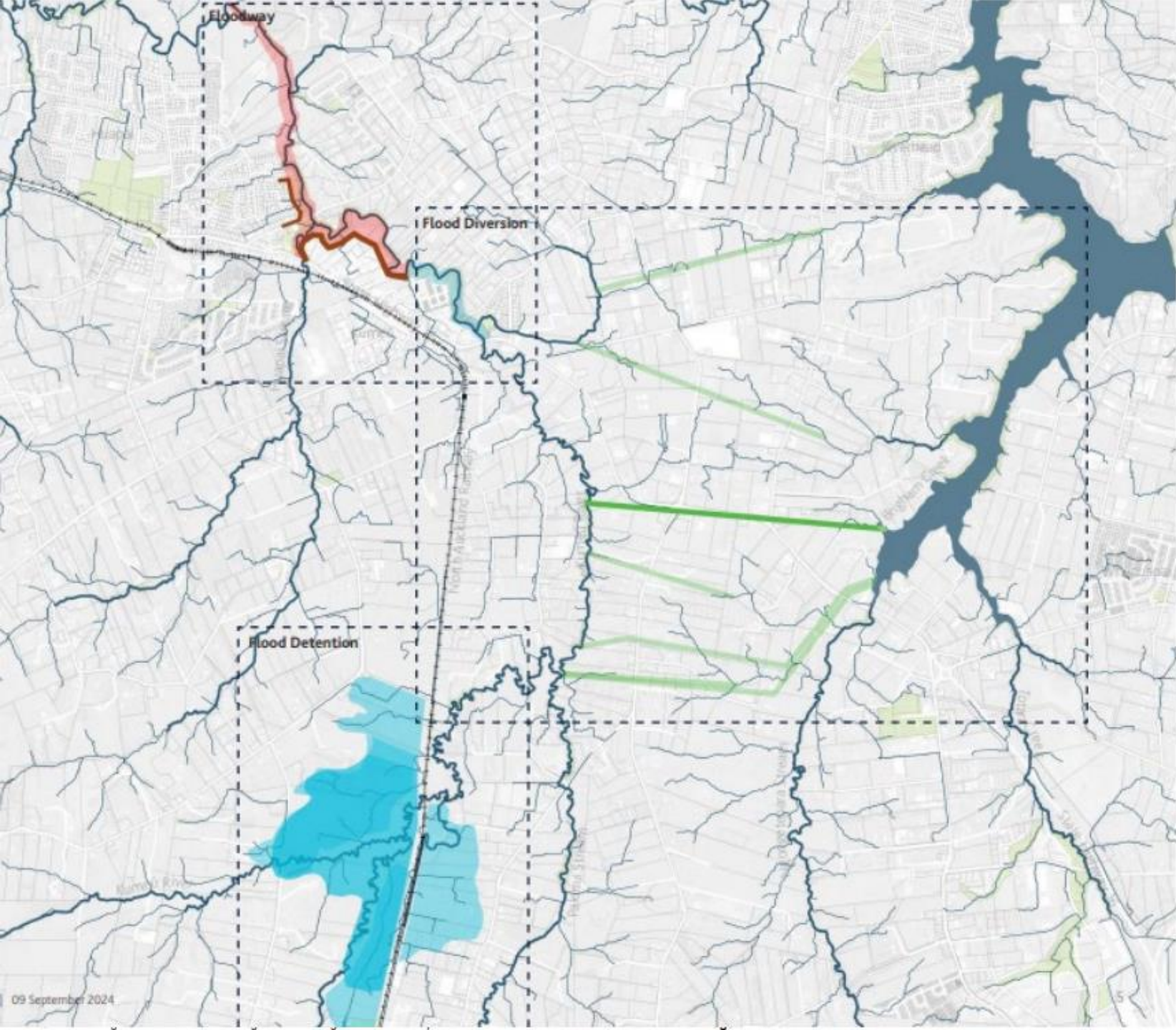
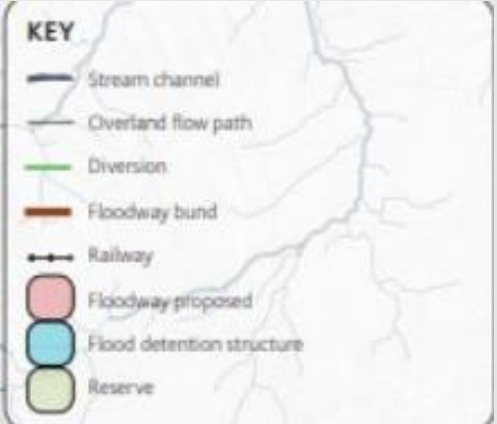


Figure 09. Flood Extent Comparison in Kumeu Township



Options Assessment



Options Assessment

Option	Cost	Outcome
Floodway (Stream Widening) Extension to existing Kumeū floodway (70m wide x 2.8km long)	\$379 M - \$573 M	<ul style="list-style-type: none"> • 30 – 100 properties solved • 70 – 140 properties unsolved • Increases flood risk downstream – esp. Waimauku
Diversion - Divert flow upstream of Kumeū Village to Waitematā Harbour through 4.5m diameter 1.9km long tunnel.	\$214 M - \$295 M	<ul style="list-style-type: none"> • 65 -30 properties solved • 40 – 105 properties remain unsolved • Reliant on inlet not blocking - requires long-term(forever) operational management of blockage risk. • Likely to experience opposition during consenting process.
1,800,000 m ³ storage basin on the main channel of Kumeū River	\$107 M - \$163 M	<ul style="list-style-type: none"> • <i>ca.</i> 270 properties solved • <i>ca.</i> 230 properties remain unsolved • Residual risk to 500+ properties for any event greater than 100 yr (or dam breach) • Encourages further development in the existing flood plain which would also be at risk if the dam failed or overflows • Requires long-term (forever) maintenance and operation of dam with associated operational costs



Options Assessment

Floodway

- Not cost effective for benefit provided
- Increases flood levels downstream

Diversion

- Not cost-effective for benefit provided
- Significant reliance on inlet remaining clear to manage risk forever

Dam

- Would leave over 230- 500 properties at risk
- Residual risk very high from events larger than 100 yr
- Costs of operation and maintenance of dam forever



Resilience

- Significant debris removed from river (quarterly inspections next due March 2025)
- Weed spraying completed – continue to work on as reported basis
- Maintaining Conveyance
- Renewing at-risk assets
- Extended community support from Recovery Team for 2025

Report flooding risks like blocked drains, culverts, catchpits or grates on [09 301 0101](tel:093010101)



River Clearing



Before



After





Monitoring



- Community pilot for near-real-time monitoring camera and river level monitoring.
 - Key locations in the community
 - Provide insights into river "flood" conditions
 - Cameras
 - WL sensors
- Piloting a Machine Learning model for flood forecasting within the Kumeū township



Preparedness

- Completed Rodney Local Board Emergency Readiness and Response Plan
- Working on Natural Hazards Plan Change
- Providing technical advice on flood risk for future urban zone and other spatial planning opportunities
- Will work with NZTA to explore stormwater management opportunities resulting from SH16 upgrade.



What you can do

- Follow the Kumeū Emergency Network on Facebook
- Get a copy of the Rodney Emergency Readiness and Response Plan
- Create a household or business plan for key information to use in an emergency.
- Use Flood Viewer to identify at risk areas
www.aucklandcouncil.govt.nz/floodviewer
- Phone us on 09 301 0101 to report blocked culverts, catchpits, waterways.



Review — Infrastructure Providers and Developers



Influence of Flooding on the Council's Plans for the Future Growth of Kumeū-Huapai

John Duguid, General Manager Planning and Resource Consents



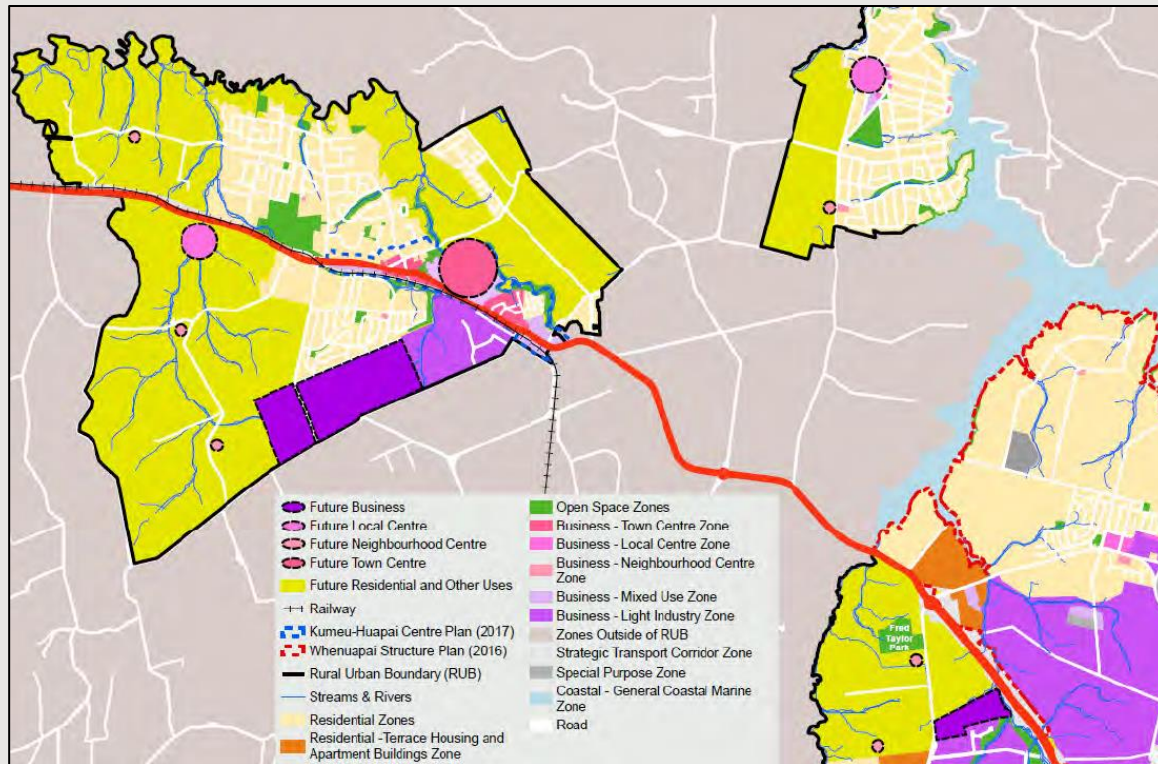
Kumeu-Huapai Centre Plan (2017)



- There is no longer potential for the existing town centre to expand into the Industrial area on SH16
- Any expansion was *dependent* on the Kumeū Floodway being built through the area



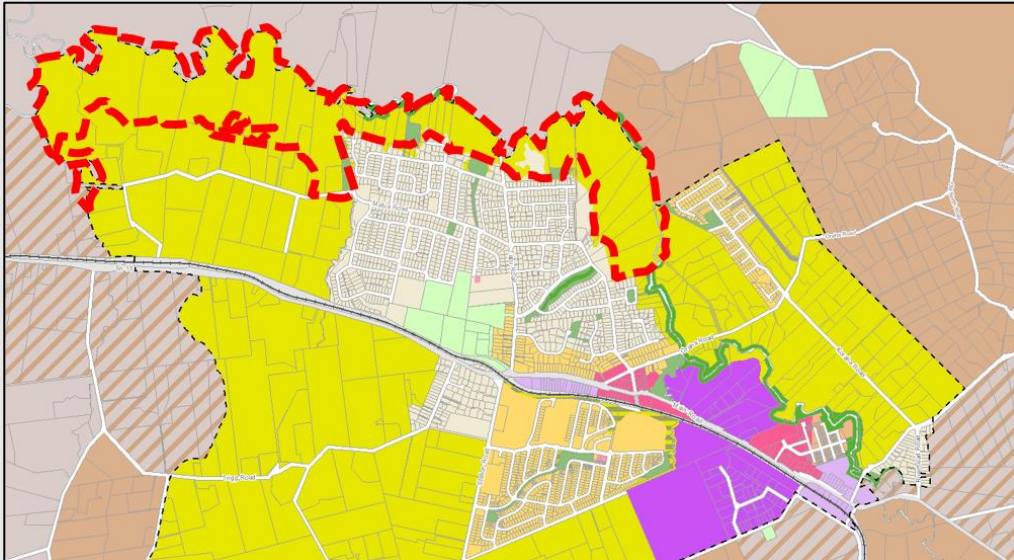
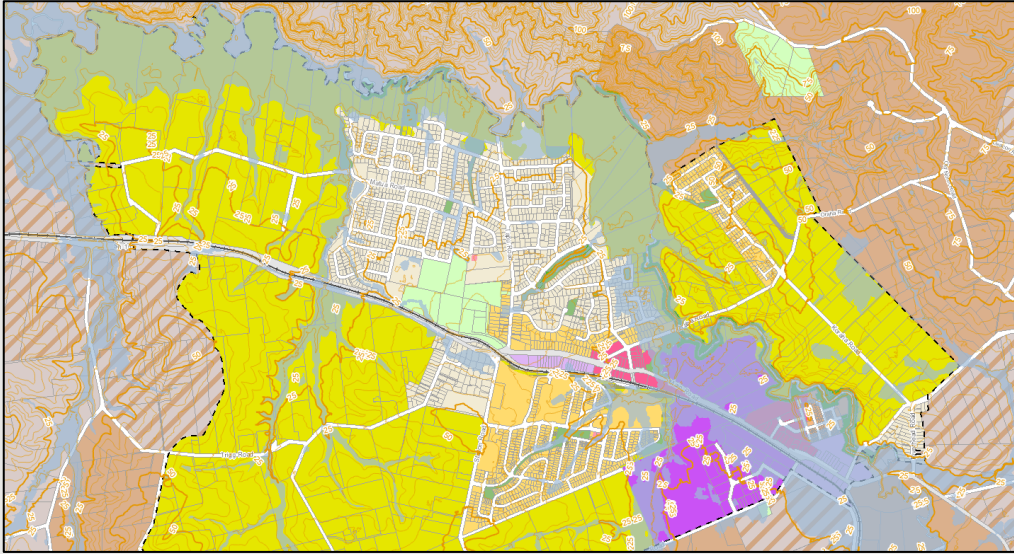
North West Spatial Land Use Strategy (2021)



- Future Urban zone (bright yellow) confirmed in the **Auckland Unitary Plan** in 2016
- A new centre is identified in the west of the Future Urban zone
- Industrial expansion identified on Access Road



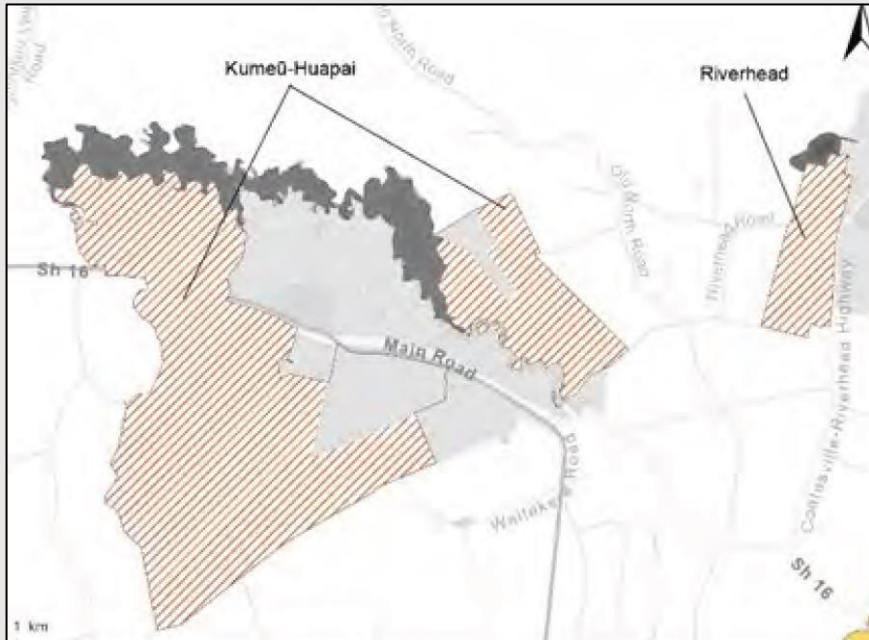
Removal of areas of floodplain from the Future Urban Zone



- The council's **Future Development Strategy** directs that areas that are the most affected by natural hazards are removed from the Future Urban zone
- The northern portion of the Kumeū-Huapai-Riverhead Future Urban zone is **not** appropriate for development due to the risks to life and property
- The council will notify a change to the **Auckland Unitary Plan** to remove the Future Urban zone in this location



Balance of Future Urban zone 'red flagged'



- The rest of the Kumeū-Huapai and Riverhead Future Urban zones are retained but **'red flagged'** to ensure that specific requirements are met for development to occur
- Due to the extensive nature of the upstream catchments, development could exacerbate flood risk downstream if it is not well managed
- The purpose of the 'red flag' is to place particular emphasis on flooding and the critical need for an integrated approach
- Specific requirements need to be considered from the start of the development process



Timing of development of Future Urban zone

- The Kumeu-Huapai and Riverhead Future Urban zones are anticipated to be ‘live zoned’ “**Not before 2050+**”.
- Key bulk infrastructure projects to support development readiness (prerequisites) include:
 - Brigham to Waimauku SH16 Upgrade
 - SH16 Main Road Upgrade
 - Alternative State Highway
 - Access Road upgrade
 - Coatesville-Riverhead Hwy upgrades
 - Northwest Rapid Transit extension to Huapai
 - Riverhead separation from the KHR WW Main

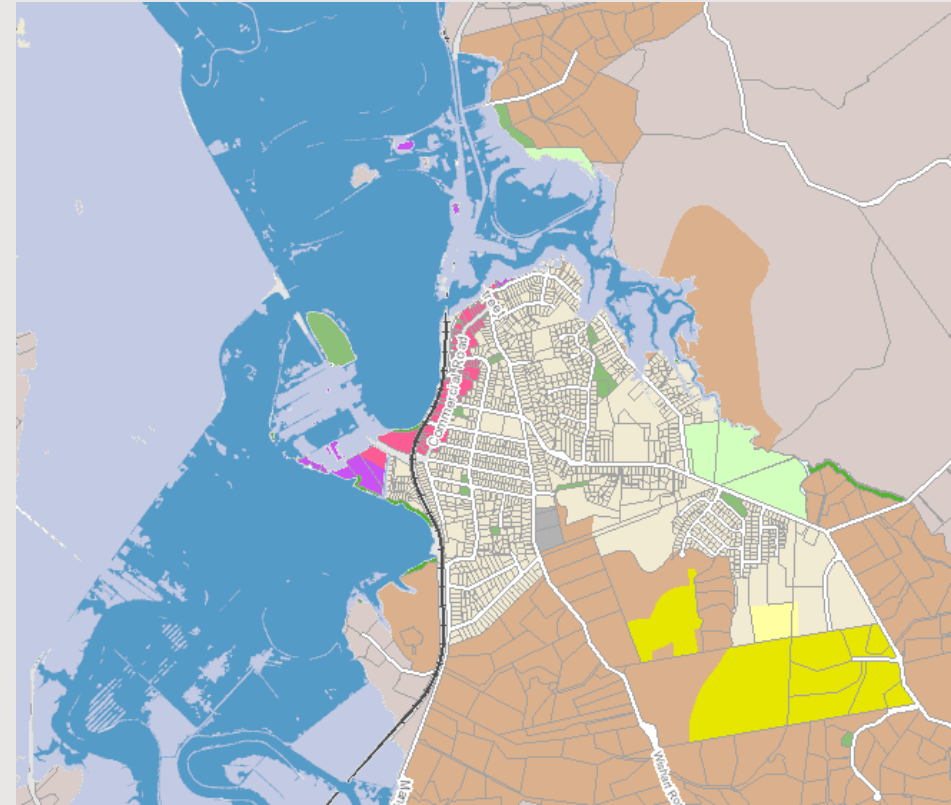


Questions?

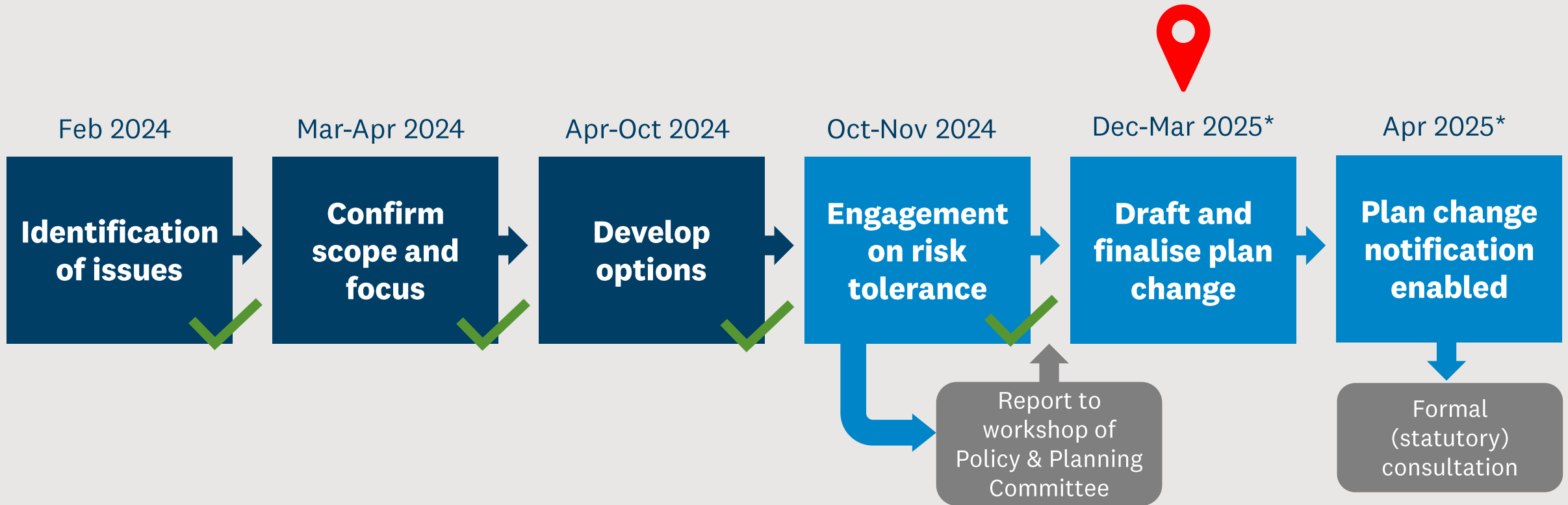


How does the Auckland Unitary Plan manage development in flood hazard areas?

- The AUP has rules and standards that manage subdivision, use and development in areas subject to flood hazards – most activities require a resource consent
- A hazard risk assessment is required to support any resource consent application
- The AUP also has other relevant rules and standards e.g. setting maximum impervious areas to manage stormwater runoff

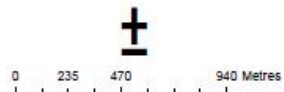
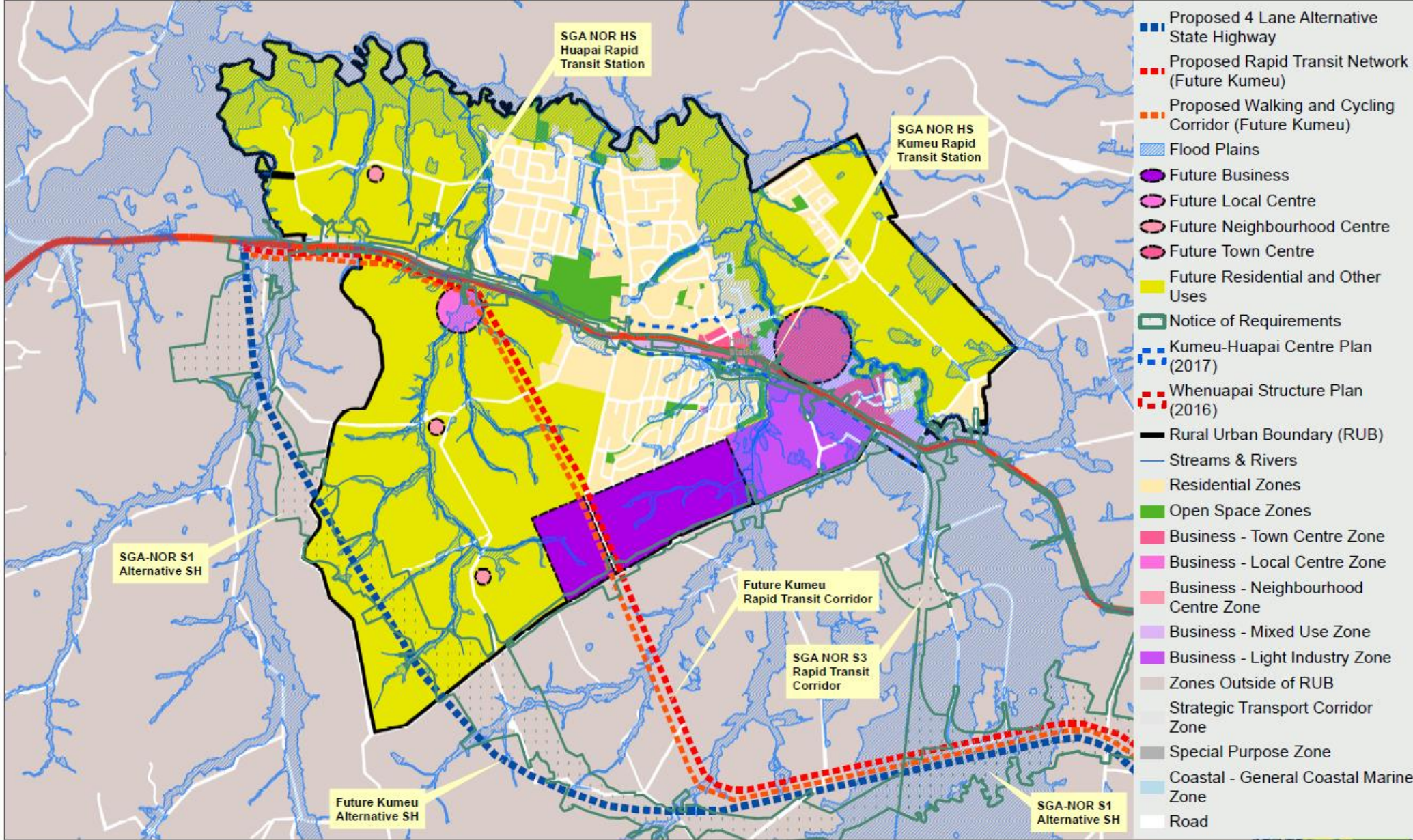


Strengthening the Auckland Unitary Plan - Overall timeline for process



*Timings likely to change because of new central government policy direction expected in the first half of 2025.





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Date: 31/12/2024

North West Spatial Land Use Strategy (2021) with Flood Plains, NORs (SGA), and 'Future Kumeu' proposal overlaid



Q&A

February 2025

