



Stormwater Management
South Wairarapa District
Councillors
Workshop

7 August 2024



Our water, our future.

Introductions

Stormwater Management - South Wairarapa District Council Councillors Workshop

Objectives

1. Provide detailed understanding of stormwater management in the District
2. Stimulate deeper discussions on how to manage stormwater issues for the long term
3. Prepare for informed investment discussions in the upcoming Long-Term Plan

Stormwater – Agenda

Part 1 – Information Sharing

- Overview of Stormwater Management
- Management Responsibilities
- Challenges in Stormwater Management
- Township Characteristics/Modelling
- Investment Opportunities
- Summary

Break

Part 2 – Activity

- Case Study
- Group Activity
- Feedback and Discussions
- Individual Reflections
- Next Steps



Stormwater Management
in South Wairarapa

Part 1

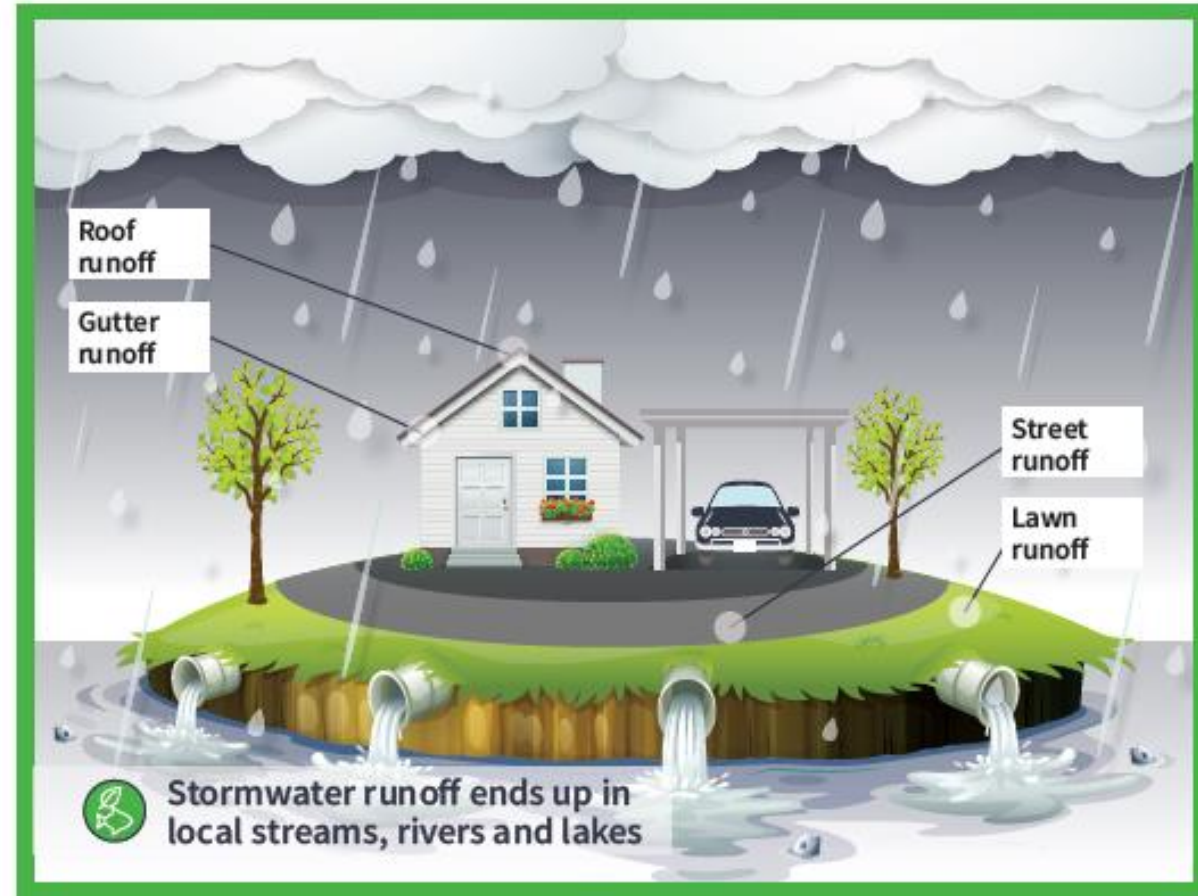
Understanding Stormwater
Management



Our water, our future.

Overview - Understanding Stormwater

- Stormwater is rainwater runoff from hard surfaces.
- A byproduct of development
- Improper management can lead to damage and death
- Management responsibilities are spread among different parties



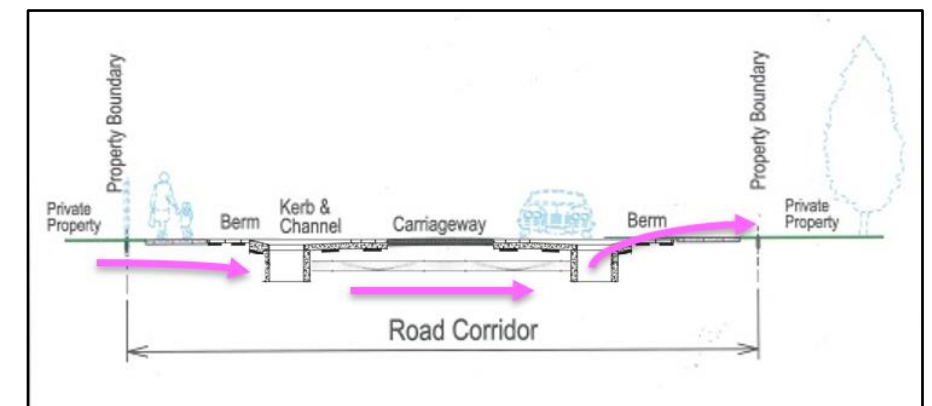
Stormwater Management

- Network – for low to medium rainfall events. (1 in 5 or 1 in 20-year storm event)
- Overland flow paths - for heavy rainfall events
- Flooding - network capacity exceeded and overland flow paths are blocked



Challenge - Level of Service Requirement Vs Expectations

- SWDC Residents Satisfaction = 24% (KPI=60%)
- Insufficient/Limited Network – Private soak pits
- Overland flow paths - Unreliable
- Flooding - Habitable floors protection
- Stormwater Quality – Consent driven level of service (New)
- Responsibilities – Unclear ownership and management



Responsibilities – Complex and Diverse

Figure – Maintenance responsibilities associated with Brandon Street Flooding

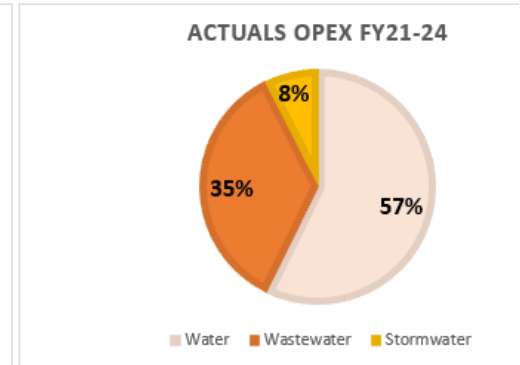
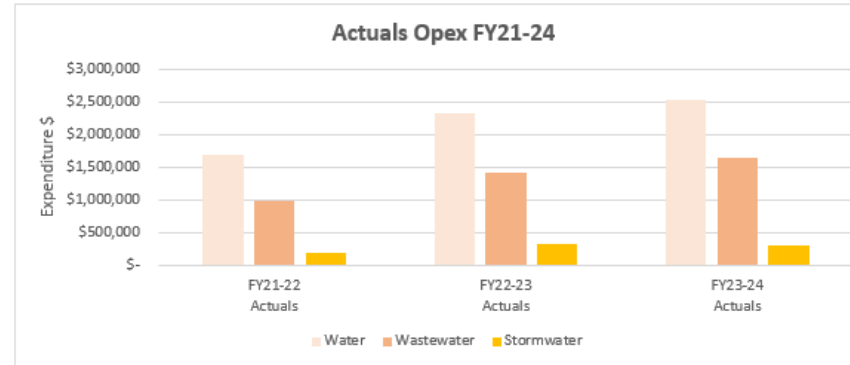
Asset	Ownership	Maintenance Responsibilities
State Highway: Culverts/sumps	NZTA	SWDC Roding Team
Local Roads: Culverts/sumps	SWDC	SWDC Roding Team
Stormwater Network: Manholes/intakes/hard infrastructure	SWDC	Wellington Water
Roadside open channels/drains	SWDC	SWDC Parks & Reserves Team
Open channels/drains on private property	Property Owner	Property Owner
Driveway Culverts	Property Owner	Property Owner
Water Races	SWDC	Property Owner
Streams & Rivers	GWRC	GWRC or Property Owner



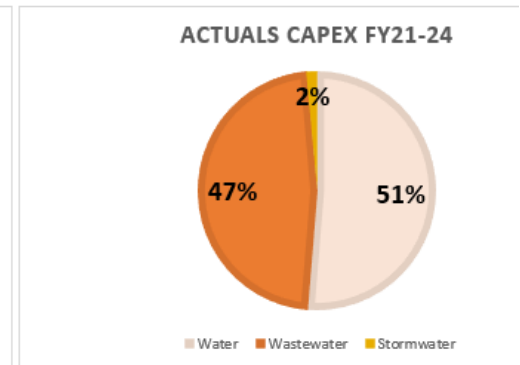
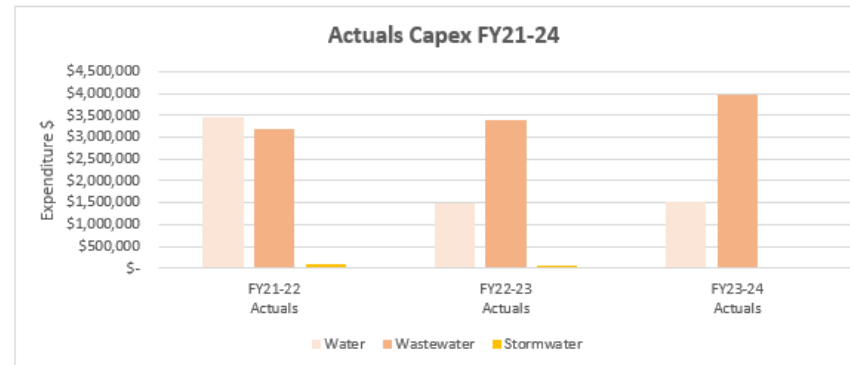
Challenge – Historical Under Investment

- Limits operations and planned maintenance activities
- Increasing flood risk and reactive expense
- Increasing backlog of flooding investigations
- Setbacks in readiness to maximize councils limited budget

SWDC - FY21-24 Opex Actuals and Forecast

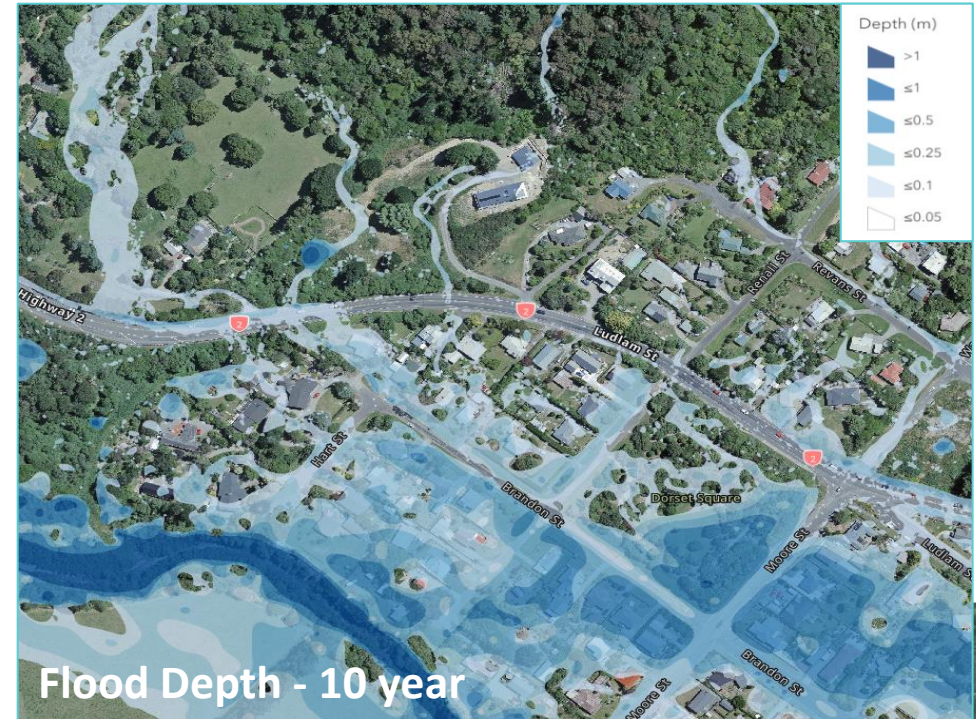


SWDC - FY21-24 Capex Actuals and Forecast

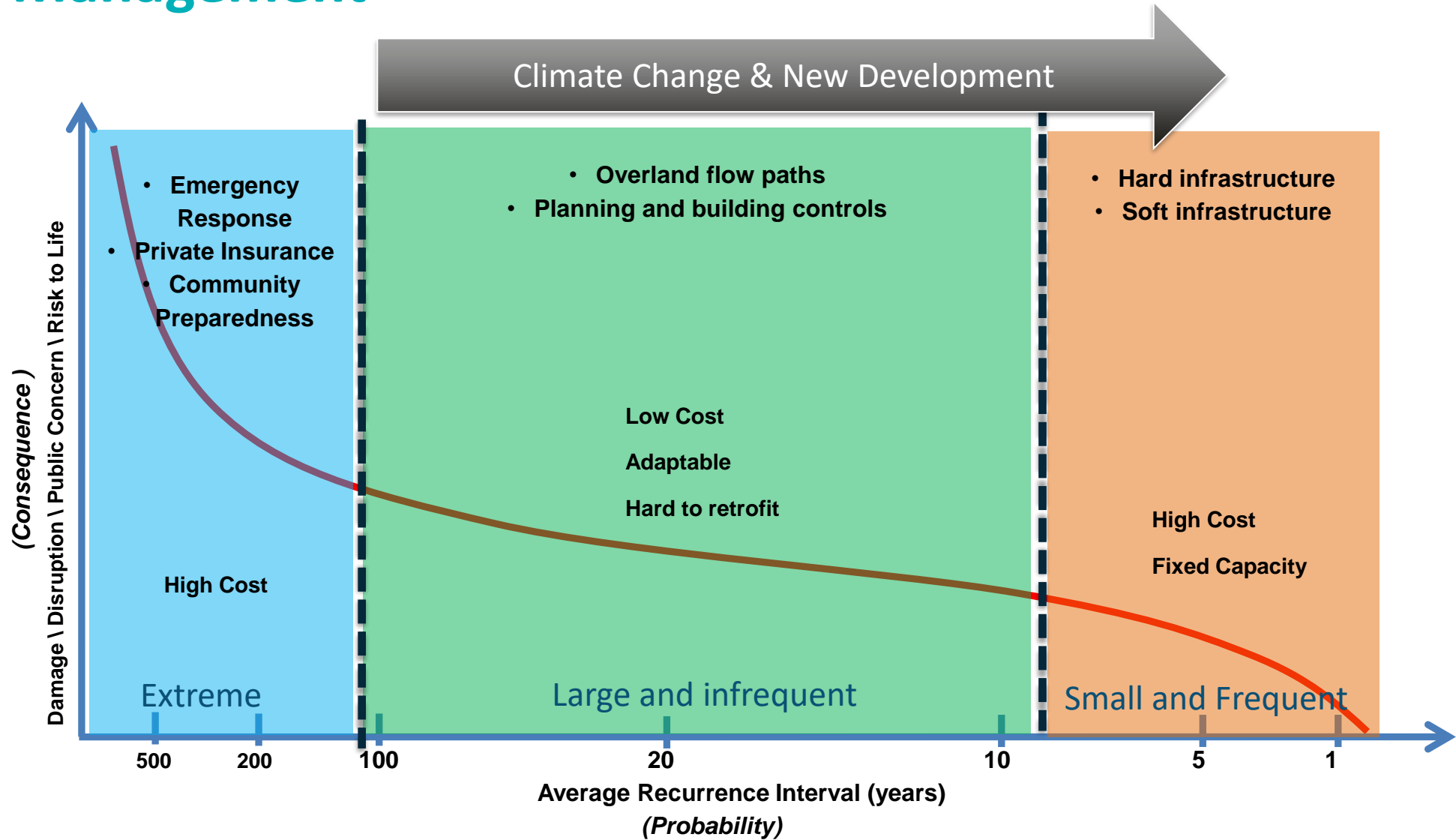


Challenges - Flooding and Infrastructure

- Flooding - most significant stormwater investment challenge
- Infrastructure pressures - Aging, growth, climate Change and groundwater
- Critical works - flood hazard mapping and planned maintenance
- Level of flood protection for existing issues - Example: Karehana/Plimmerton Flooding (Porirua City Council)



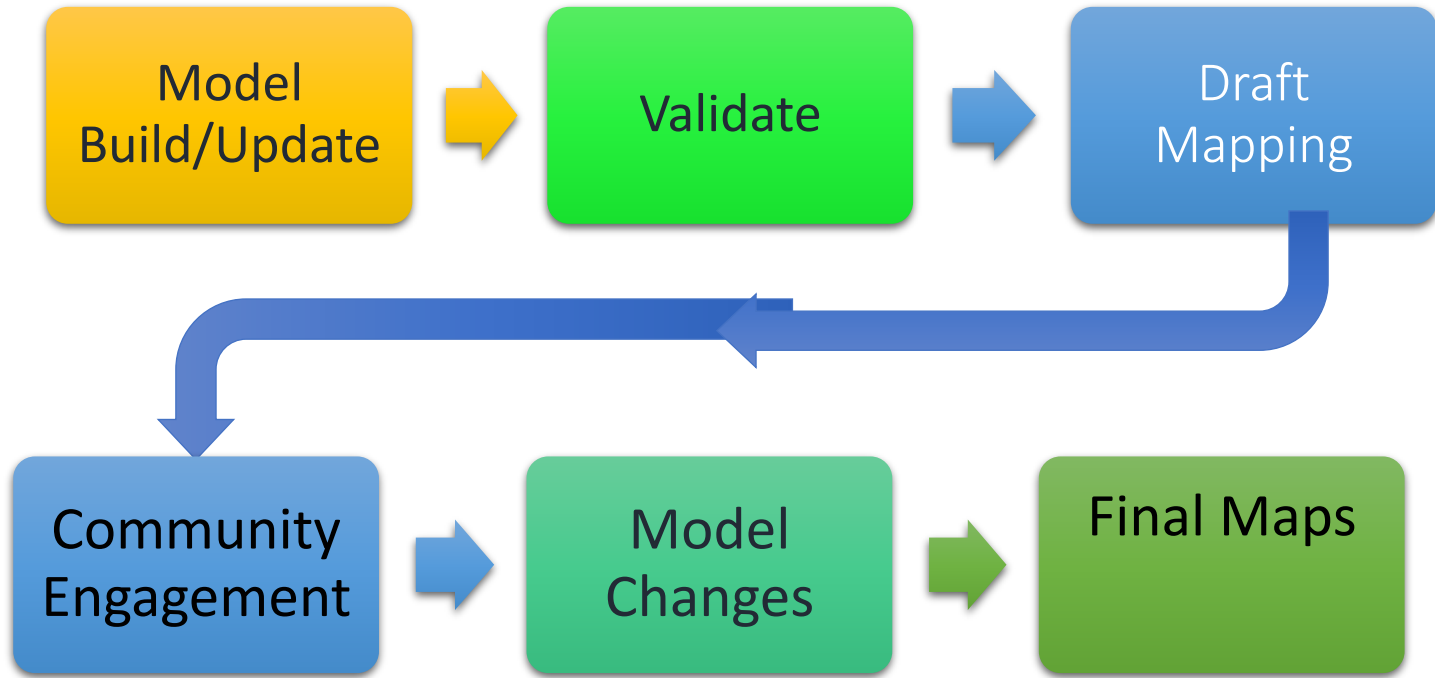
Stormwater Management



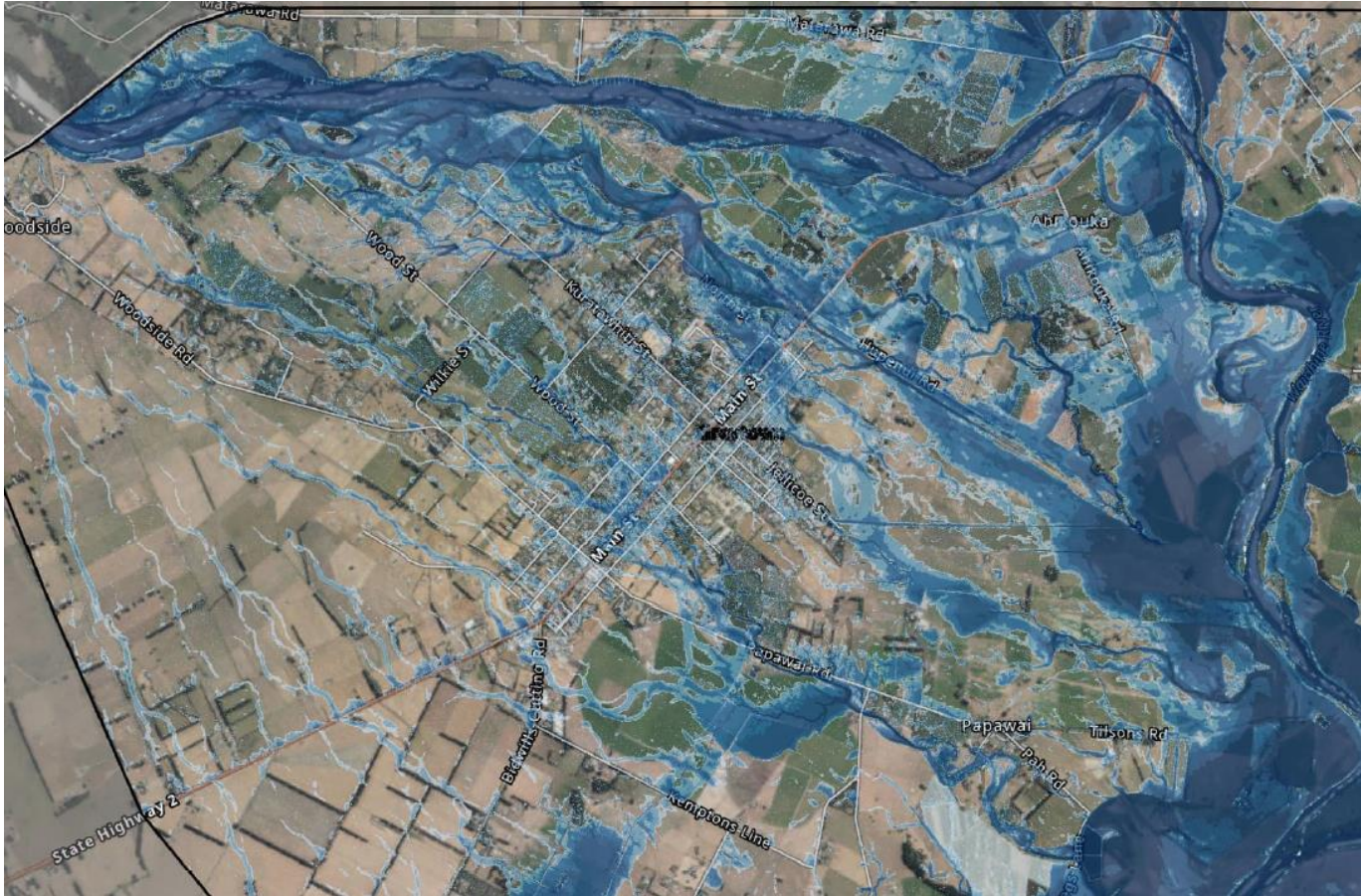
Stormwater Modelling – why?

- Provide a more holistic view and understanding of the stormwater system
- Increase understanding of flood prone areas
- Support planning decisions
- Understand risk
- Help inform decision making and identify improvements

Flood Model Process



Greytown



Catchment specific

- Water races, interaction with Waiohine River

Modelling Completed

- Soil and landuse mapping
- Preliminary Surface Flood Modelling and Draft Maps

Challenges for Modelling

- Asset Data
- Urban Rainfall Data

Next steps for Modelling

- Community engagement
- Detailed Modelling

Featherston

Catchment specific

- Flooding influenced by hillside streams, high groundwater table, mixed stormwater assets, Kiwirail line, SH2

Modelling Completed

- Soil and landuse mapping
- Preliminary Surface Flood Modelling and Draft Maps

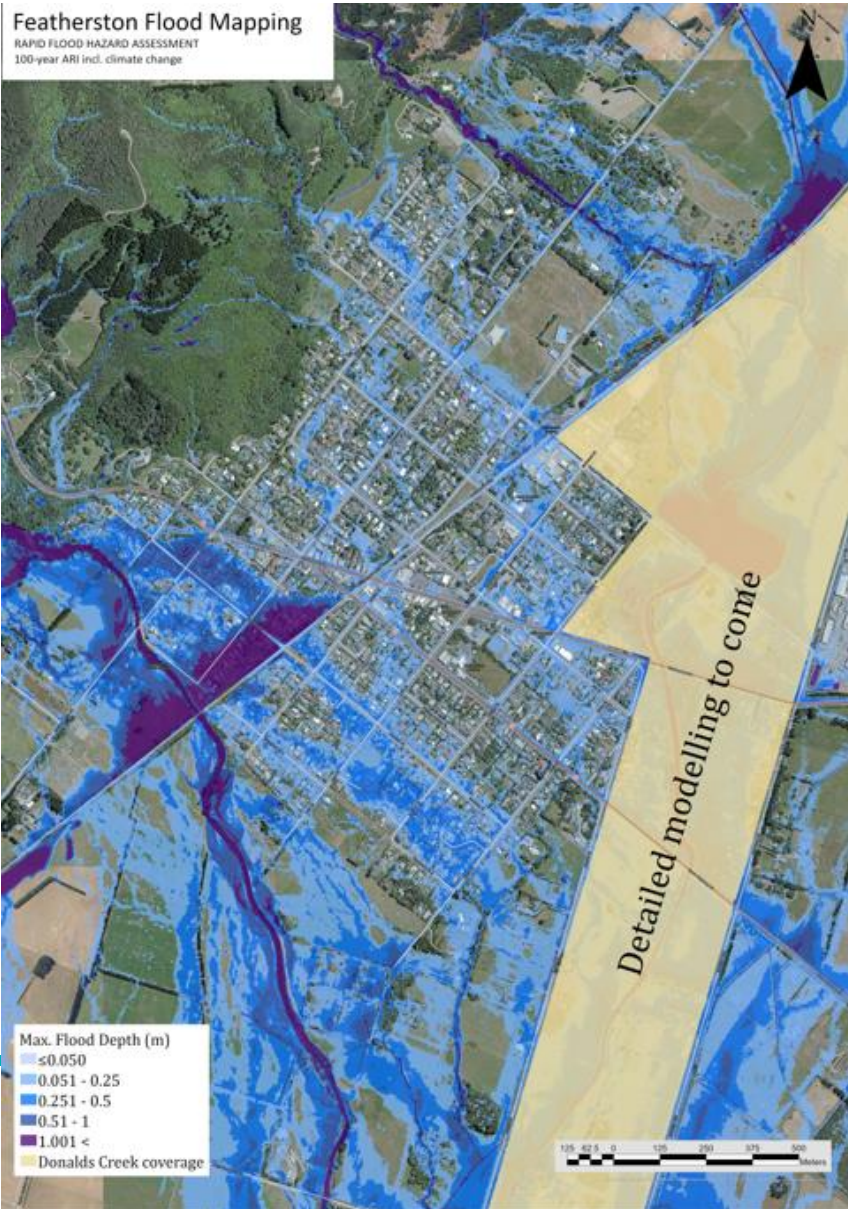
Challenges for Modelling

- Asset Data
- Urban Rainfall Data
- High Groundwater Table

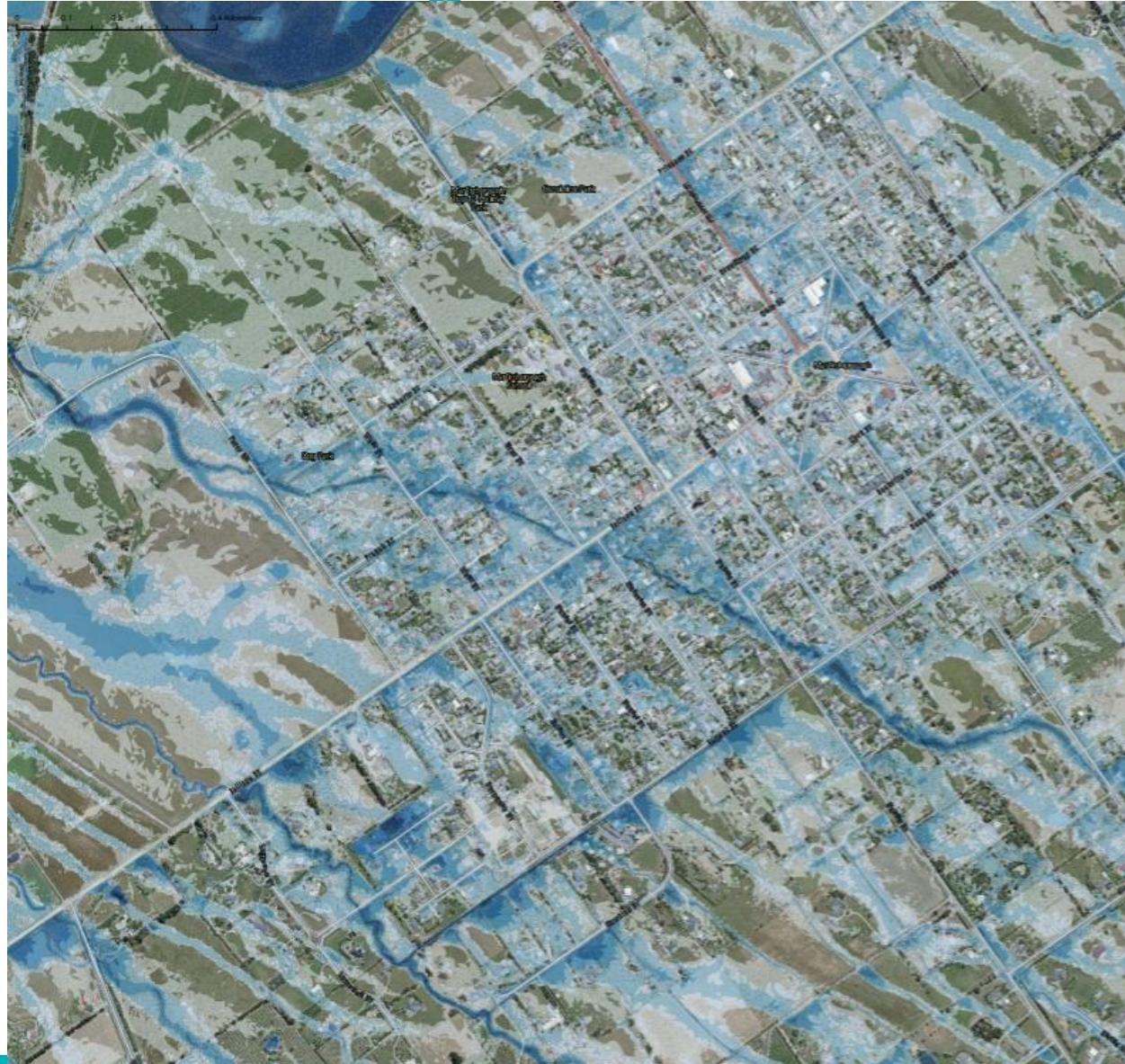
Next steps for Modelling

- GWRC – underway with Donalds and Abbots creek
- Detailed Modelling
- Final Maps

Our water, our future.



Martinborough



Catchment specific

- Flat topography, mixed stormwater assets, groundwater, overland flowpaths

Modelling Completed

- Soil and landuse mapping
- Preliminary Surface Flood Modelling and Draft Maps
- Detailed Modelling underway

Challenges for Modelling

- Asset Data
- Urban Rainfall Data
- Groundwater Table

Next steps for Modelling

- Draft Maps
- Community Engagement

Investment Opportunities

Short term(0-1yr)

- Clarify maintenance responsibilities and expectations
- Increase planned maintenance to reduce risk and reactive maintenance expense
- Investment in condition assessments and network investigations
- Public education and awareness

Medium term(1-3yr)

- Catchment wide assessment to understand problems and inform appropriate solutions
- Detailed modelling to inform growth and design solutions
- Integrating flood risk with landuse planning

Long term(>3yr)

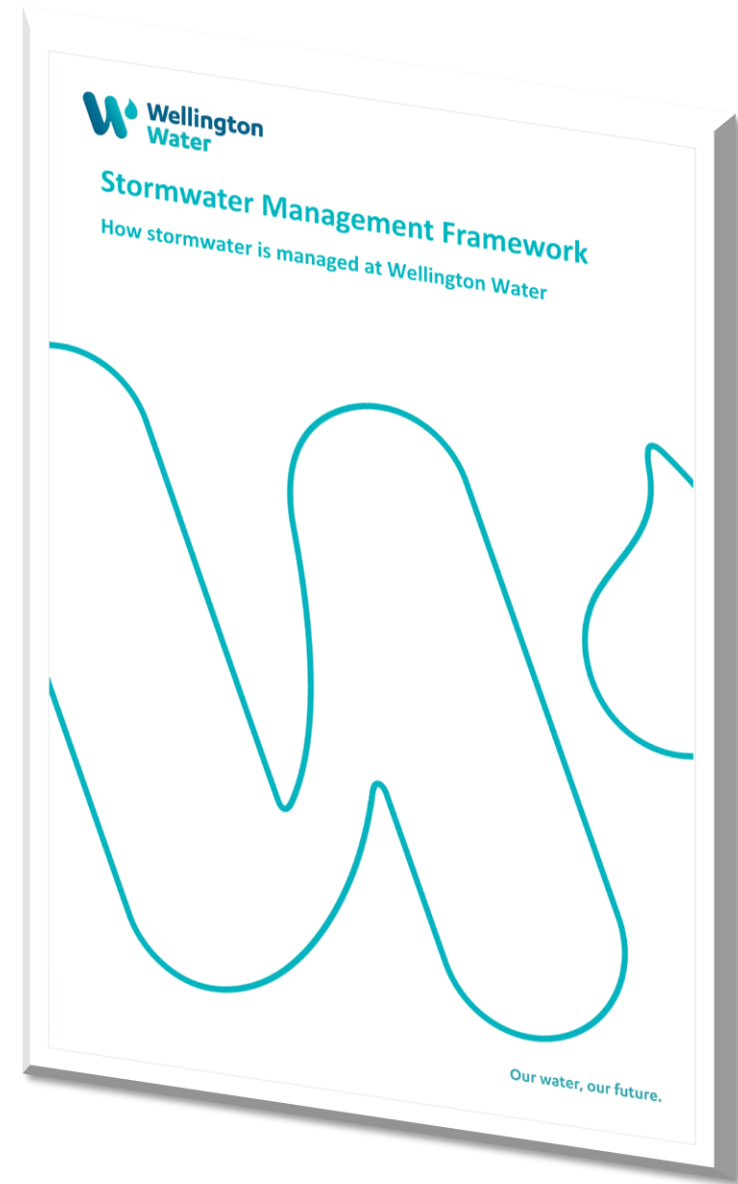
- Stormwater Network improvements - Capital Projects
- Stormwater global consent (stage 1) – 5yr monitoring programme
- Land use planning

Considerations

- What do you feel are the communities priorities for stormwater management?
- How is council keeping up with community's increasing expectations for stormwater management?
- How can we focus on those areas for the community?
 - In the LTP?
 - For the transition/Local Water Done Well?

Summary

- Complexity of stormwater management responsibility adds tension
- Level of service for flood protection & consent is increasing while funding is not
- Challenges in flood management necessitates reframing to maximize Opex and Capex resources efficiently



Questions?

Break Point





Stormwater Management
in South Wairarapa

Part 2

Workshop Activity



Our water, our future.

Introduction

We're going to look at a specific case study in Feathston and work in groups to identify possible solutions



Case Study – Brandon Street Flooding

Presented by Merieke Mulling in April 2024:

- Regular flooding – multiple times per year
- High flows from the hillside with debris and sediment
- Mix of pipe sizes and open channels
- System frequently blocks and no regular maintenance



Case Study – Brandon Street Flooding

Wellington Water investigation into issues:

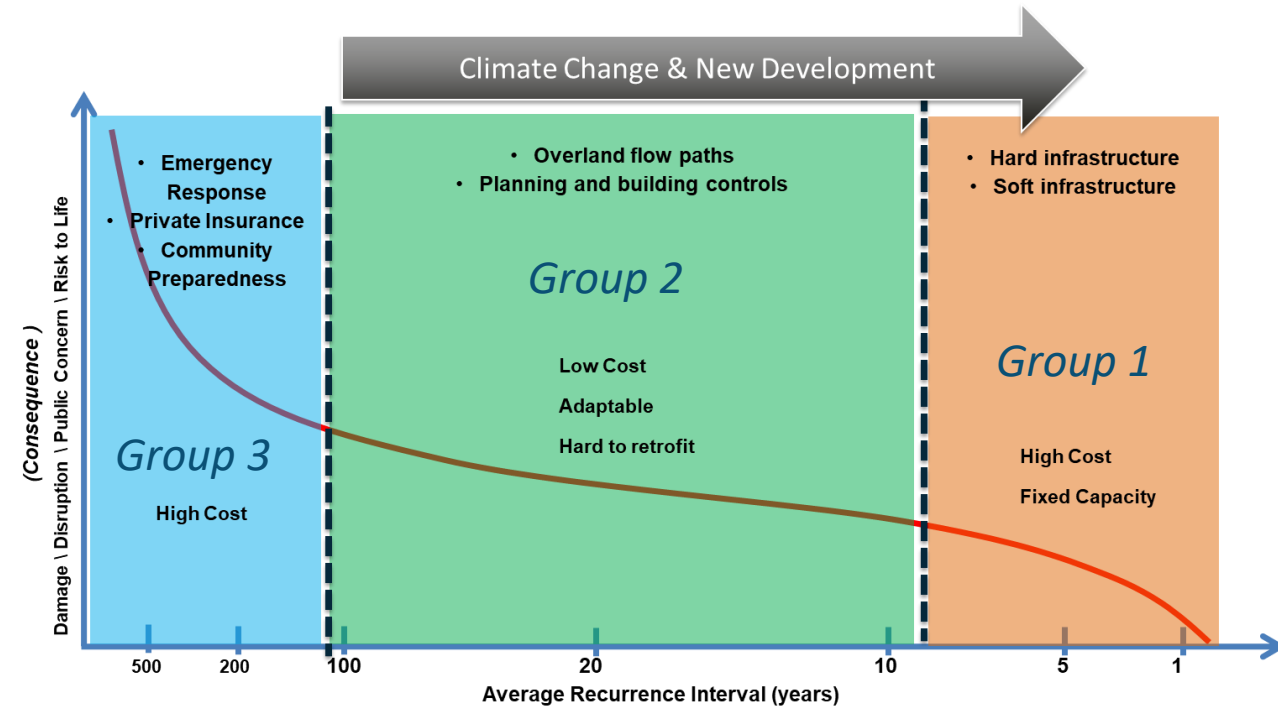
- Flooding events discussed were small (20% to 50% AEP)
- Large hillside catchment concentrated through SH2 culvert
- Network decreases capacity downstream
- Properties are located below road level



Workshop Activity - Introduction

Work in groups to identify possible solutions to the flooding at Brandon Street.

- Split into 3 groups
 - One group will look at small events that cause localised, frequent flooding
 - Second group will look at larger events that cause more widespread flooding less frequently
 - Third group will look at extreme events
- 20 minutes to identify solutions
- Feedback to everyone



Workshop Activity

In your group:

- Use information provided to understand flooding problems at Brandon Street
- List possible solutions – no idea is a stupid idea
- Discuss potential challenges and opportunities with your solutions (hint: is it realistic, affordable, who would need to be on board)
- Agree a preferred solution



*** Remember which type of event and solution you are looking at***

Workshop Activity - Feedback

Each group will now provide feedback on what they discussed:

- Overview of solutions discussed
- Recommended solution
- Key considerations

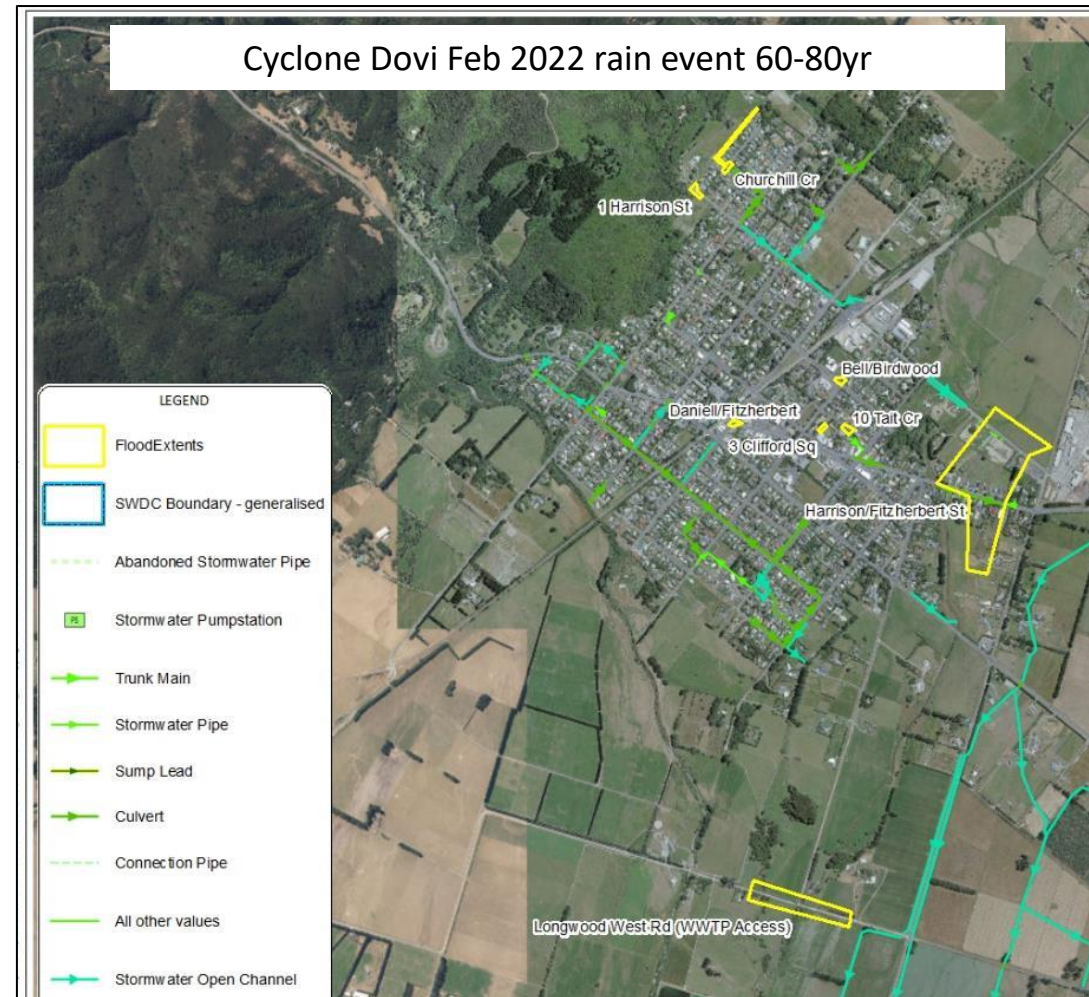


Flood impacted areas - Featherston

Cyclone Dovi – Feb 2022

1. Harrison Street West
2. Churchill Crescent
3. Cr. Daniell/Fitzherbert Streets
4. Tait Street
5. Clifford Square
6. Cr. Bell/Birdwood Streets
7. Harrison Street East
8. Longwood Road West

**Funding needed to progress
to flood investigations**



Photos



Harrison Street



Harrison/Fitzherbert



Harrison/Fitzherbert



Daniell/Fitzherbert



Churchill Crescent



Key Takeaways

What is your key takeaway from the session?

- 1 to 2 sentences only



Summary

Have we met the objectives?

1. Provided detailed understanding of stormwater management in the District
2. Stimulated deeper discussions on how to manage stormwater issues for the long term
3. Prepared for informed investment discussions in the upcoming Long-Term Plan

Next Steps

- Based on investment decisions in Long-Term Plan

Considerations

- What do you feel are the communities priorities for stormwater management?
- How is council keeping up with community's increasing expectations for stormwater management?
- How can we focus on those areas for the community?
 - In the LTP?
 - For the transition/Local Water Done Well?

Questions?





Thank you
*for spending time on
stormwater
management*