



RESOURCE CONSENT RENEWAL PROJECT

TECHNICAL FOCUS GROUP

Meeting 3
16 July 2021



Multi Criteria Decision Making Framework

	Assessment Process	Input from
1	Develop information and knowledge about the issues and process.	Core Team, Technical Team
2	Discuss relevant issues and values.	Core Team, Technical Team, TFG
3	Develop technically feasible alternative options for more detailed analysis.	Technical Team
4	Consider, discuss and where possible agree assessment criteria and interpretative notes.	Core Team, Technical Team
5	Agree to an overall objective for the project.	Core Team, Technical Team, TFG
6	Assign weight to the assessment criteria.	Core Team, Technical Team, TFG
7	Debate and “negotiate” a score for each option for each assessment criterion. The reasons for the scores given will be agreed and recorded.	Core Team, Technical Team, TFG
8	Calculate the “raw scores” and the overall weighted scores for each option to get a total score and overall ranking of options under the methodology.	Core Team, Technical Team
9	Ravensdown as site owner will use the advice and outputs from the MCDA process to assist with its decision making including in developing the discharge strategy for water.	Ravensdown Final Decision

Next Steps

Option for consenting confirmed by Ravensdown

Discharge Strategy and Project Description

AEE Assessments

Application and AEE

Application Lodged 30-November-2021

Proposed Project Objective

To establish the most sustainable long-term solution for the treatment and discharge of stormwater and process water from the Ravensdown Napier Works to enable the continued operation of the site.

Multi-Criteria Analysis (MCDA)

- “MCDA is a way at looking at complex problems that are characterised by any mixture of monetary and non-monetary objectives, of breaking the problem into more manageable pieces to allow data and judgements to be brought to bear on the pieces, and then of reassembling the pieces to present a coherent overall picture to decision makers. **The purpose is to serve as an aid to thinking and decision making, but not to take the decision.**”

Quote from UK Government Manual on Multi-criteria

Proposed Weighting

Criterion	Weighting <i>1 = lower importance</i> <i>3 = higher importance</i>
<u>TECHNICAL</u>	
Land storage requirement	1
Safety in design	2
System / technological complexity and reliability	2
<u>CONSENTING AND ENVIRONMENTAL</u>	
Consistency with regional / national planning framework	3
Ability to meet receiving environment limits / guidelines	3
Future proof (climate / other unpredictability / stakeholder and community expectations)	2
<u>FINANCIAL</u>	
Capital cost	2
Operational cost	2
<u>STAKEHOLDER</u>	
Mana Whenua values	3
Other stakeholder considerations / concerns	3

Presentation outline

Receiving environments

Potential stormwater management options

Assessment framework

Options matrix

Your feedback

*Bringing ideas
to life*

Ravensdown Awatoto – High Level Stormwater Options Review



aurecon

What level of treatment would you like to see?

What rainfall event should we be treating?

Your feedback

Any 'black flag' receiving environments for discharges?

Matrix scoring and weighting

We will review these at the end

Baseline Ecological & Water Quality Assessment

Discharge quality

high level of compliance for most discharge parameters

Receiving environment quality

Monitored parameters

Some water quality parameters are elevated downstream of the discharge during rainfall events and exceed guidelines

Process chemicals

Based on worst case, some process chemicals present a potential risk, particularly at low tide

Ecological effects

Ecotoxicity

The discharge consistently shows no toxicity in laboratory tests at the compliance level of 100:1 dilution

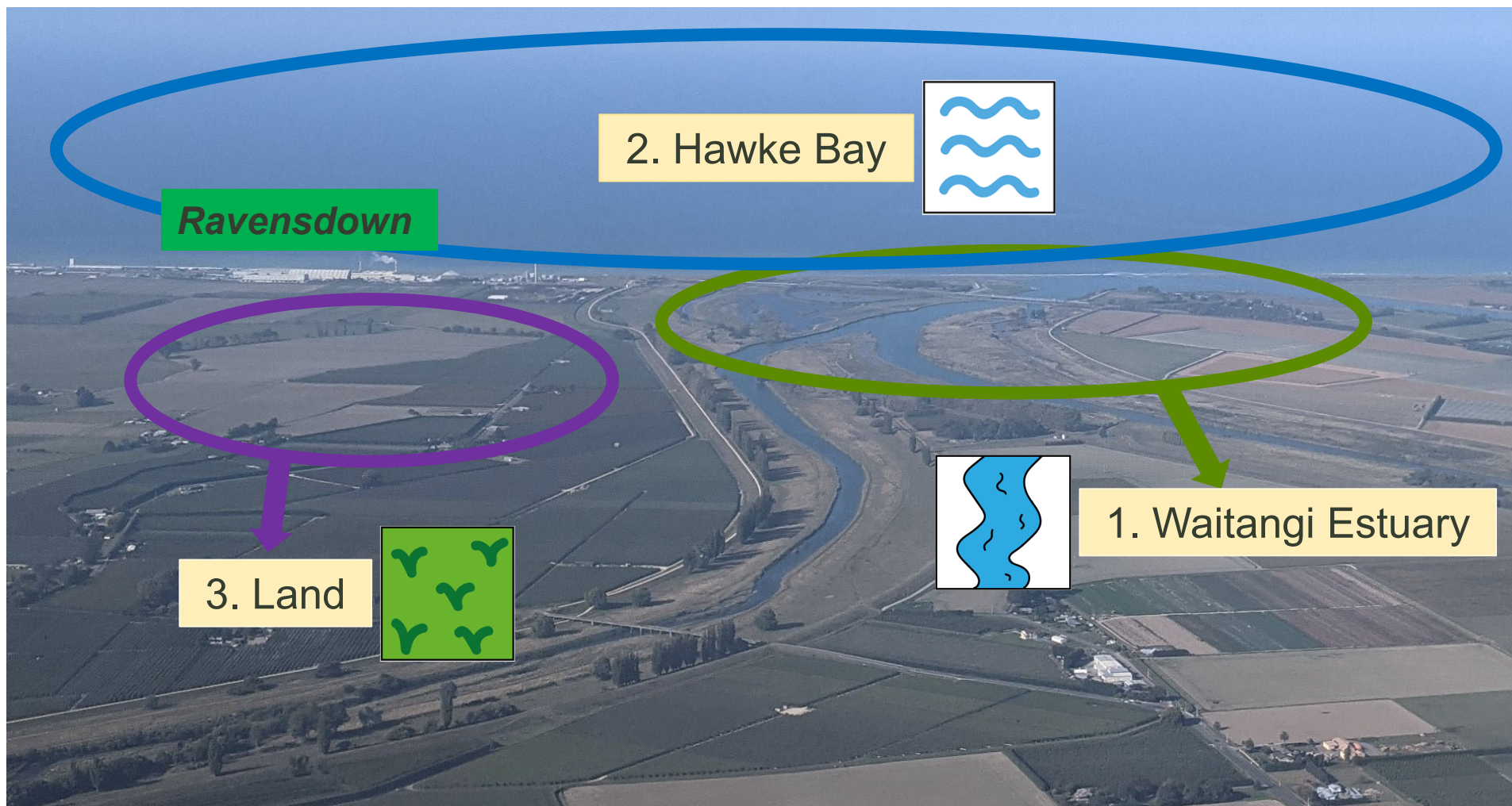
Potential effects may be tidally influenced

Marine ecology

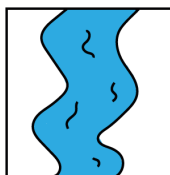
Marine benthic communities are likely to be impacted by the discharge within the mixing zone. However there is little evidence of effects beyond the mixing zone

Using a weight of evidence approach, the overall effects from the current discharge are likely to be minor

Receiving environments



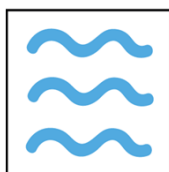
1. Waitangi Estuary



- The Tūtaekurī River is an important waterway to Tangata Whenua who have extensive interests along the river.
- Classified as **estuarine environment**.
- Existing point of discharge for Ravensdown site



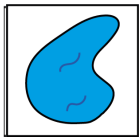
2. Hawke Bay



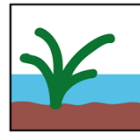
- Large bay on the east coast less than 100m from Ravensdown Napier site
- Classified as a **Marine environment**



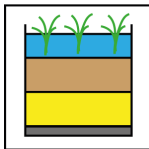
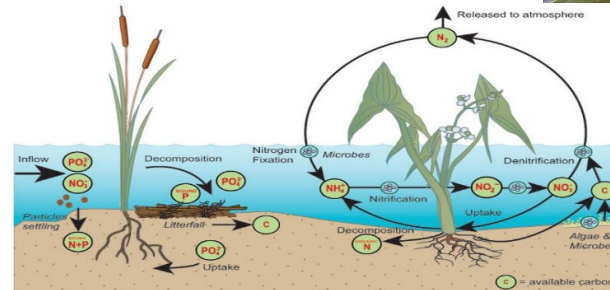
Storm and process water treatment devices investigated



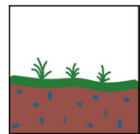
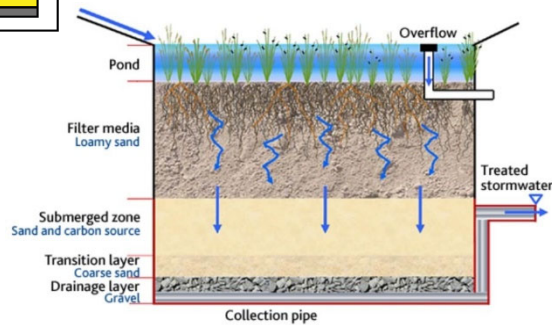
■ Settling pond



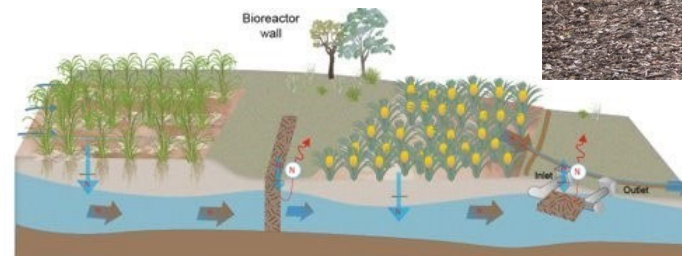
■ Wetland



■ Bioretention basin



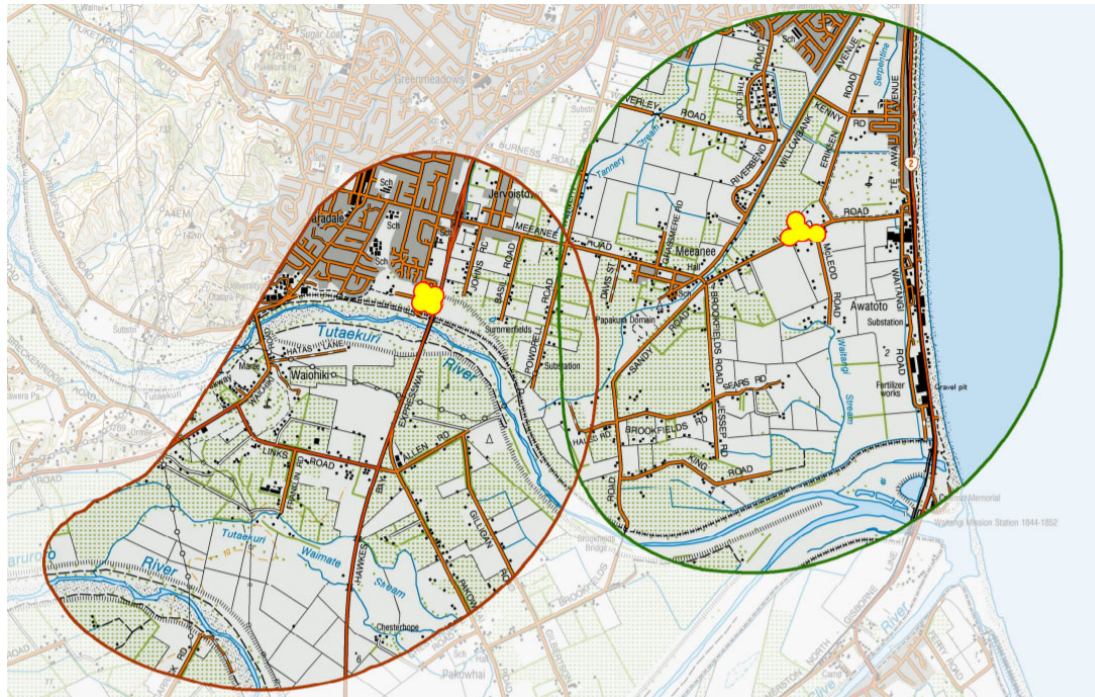
■ Bioreactor



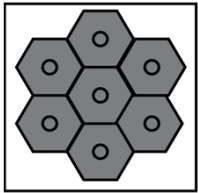
3. Land



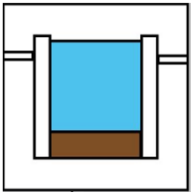
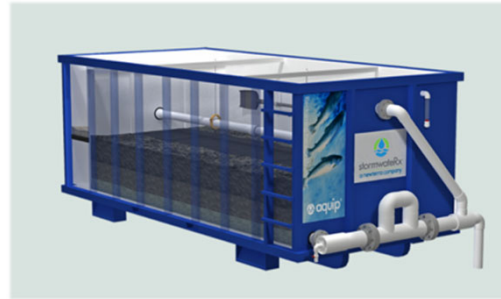
- Ravensdown owns the land directly west of the site and this is available to use
- Site/land located in **Napier source protection zone**



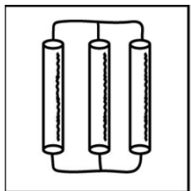
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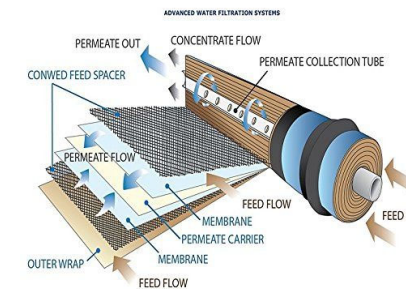
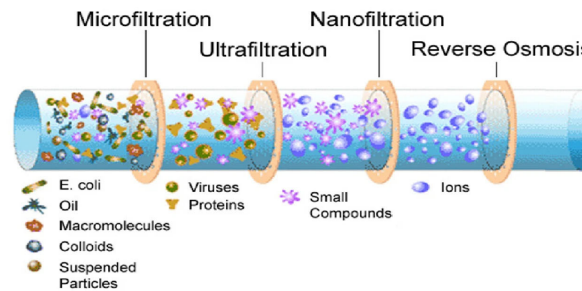
■ Filter media



■ Clarifier



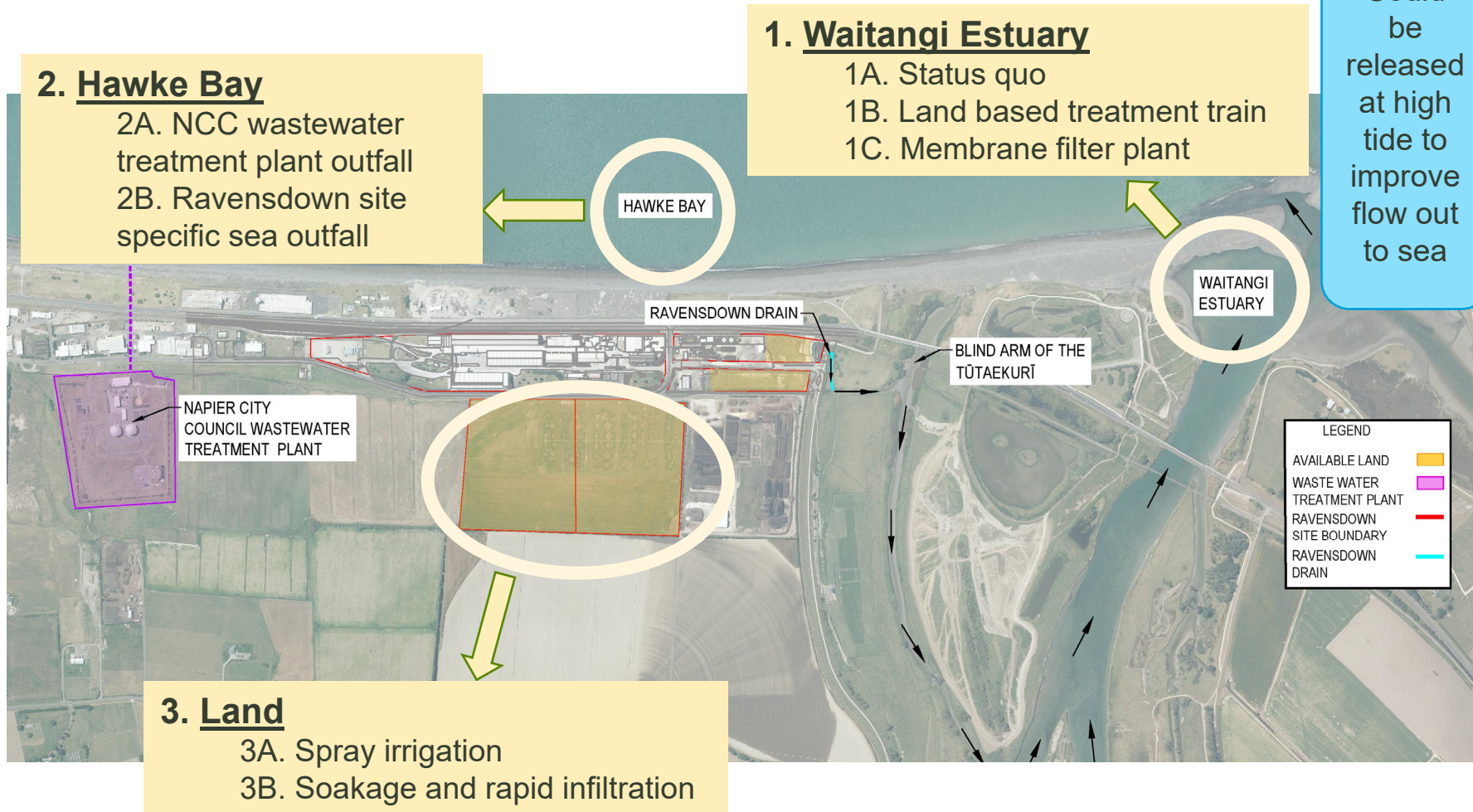
■ Membrane filter plant



REVERSE OSMOSIS MEMBRANE

*Bringing ideas
to life*

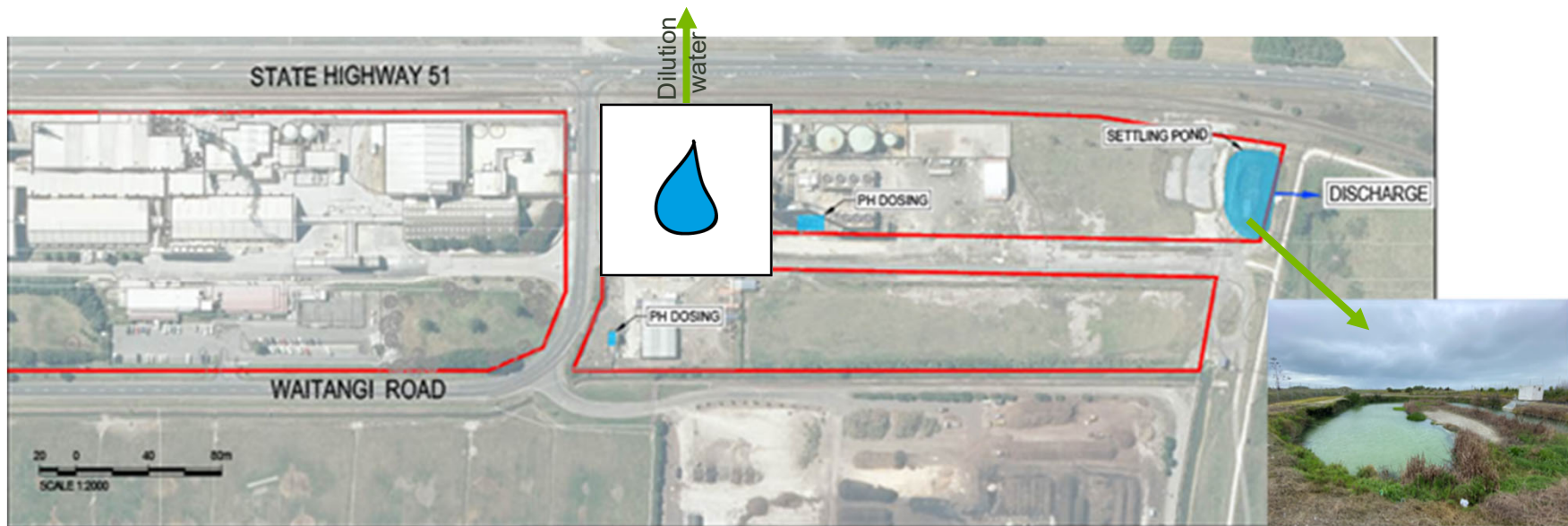
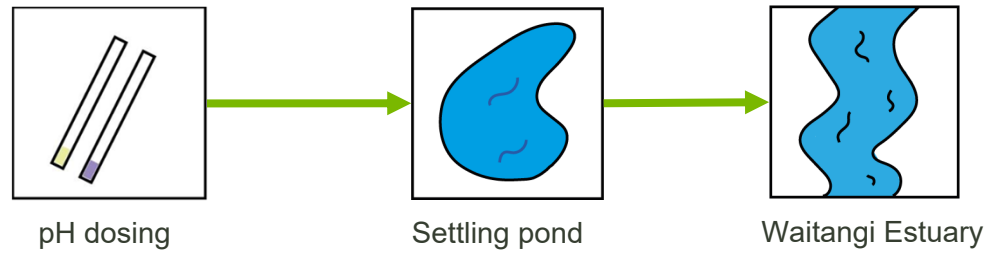
Potential site management options



Enhancing the environment (e.g. planting, habitat restoration) is being considered on top of all of these

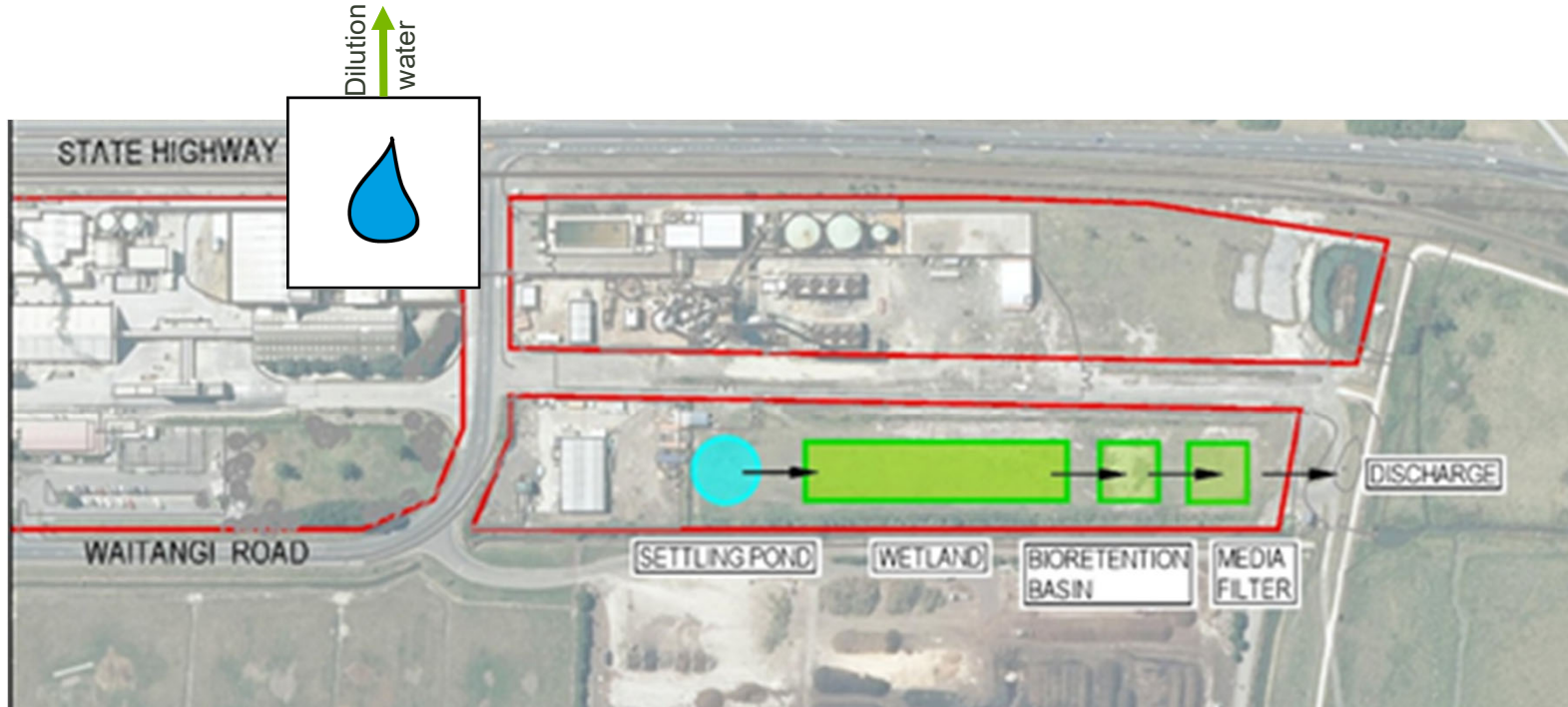
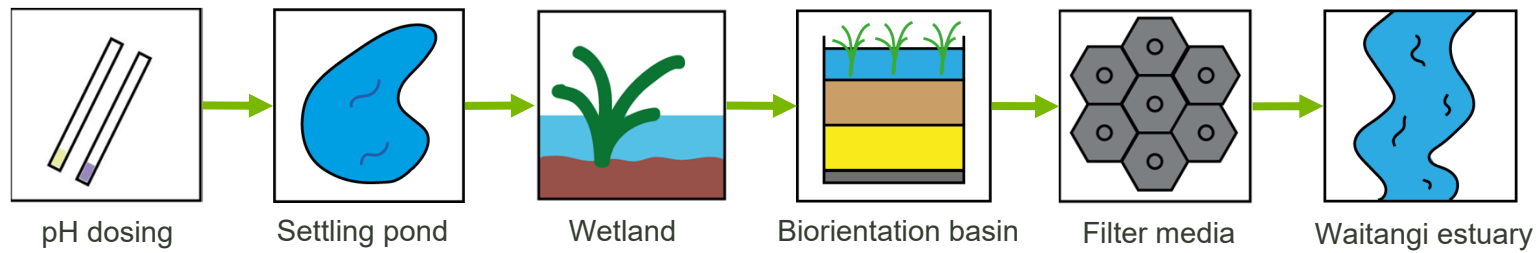
1. Waitangi Estuary

1A. Status quo



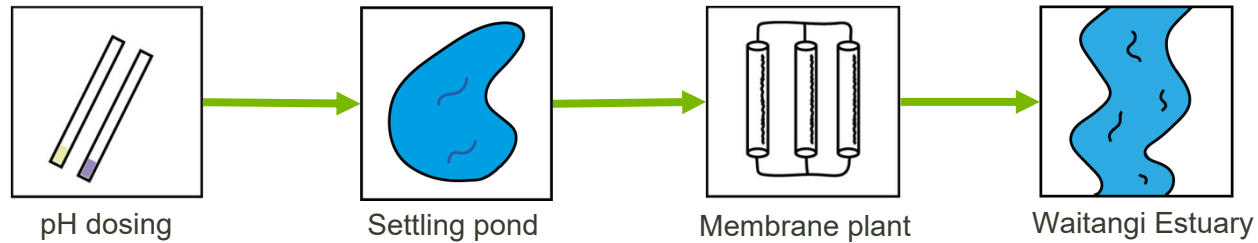
1. Waitangi Estuary

1B. Land based treatment train



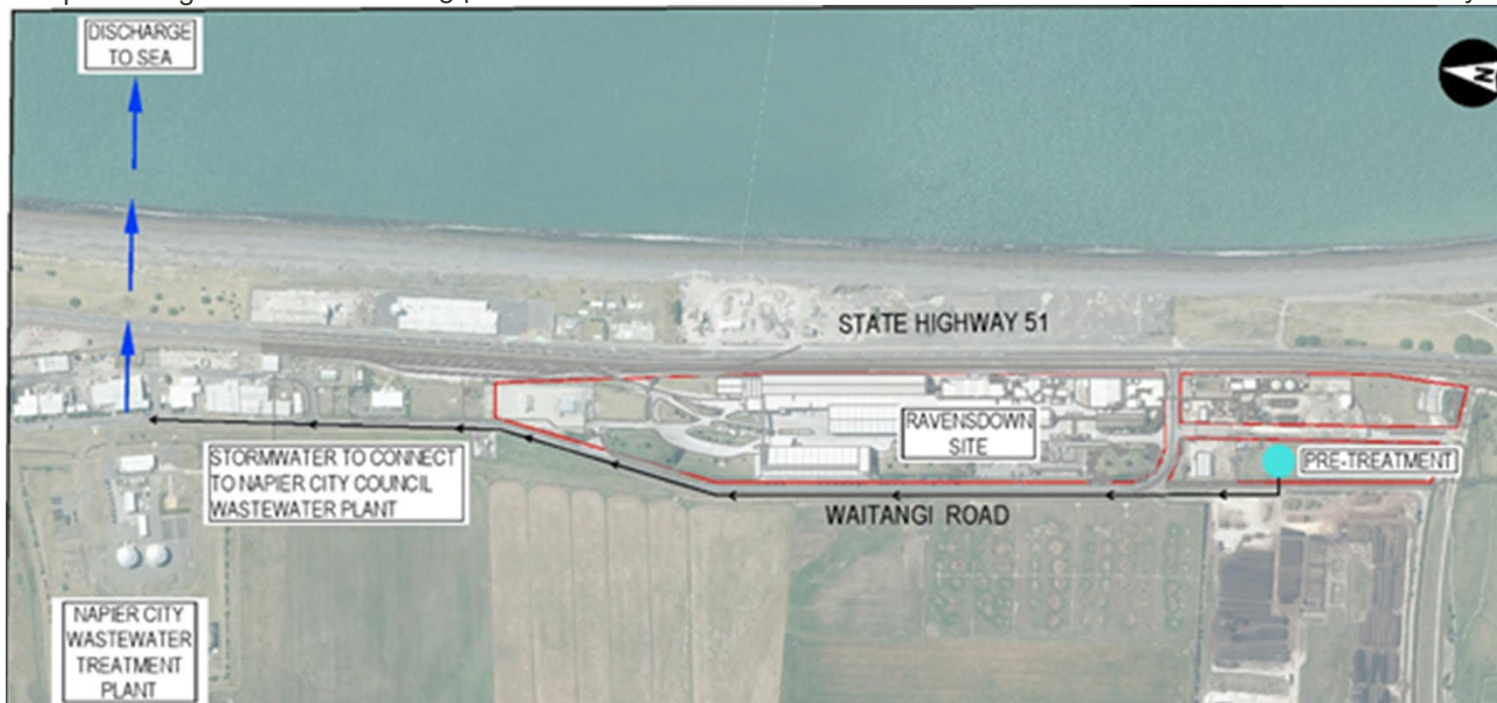
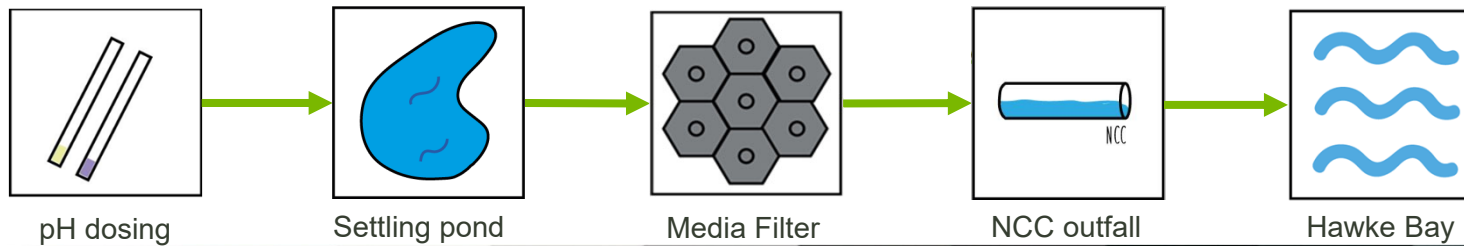
1. Waitangi estuary

1C. Membrane plant



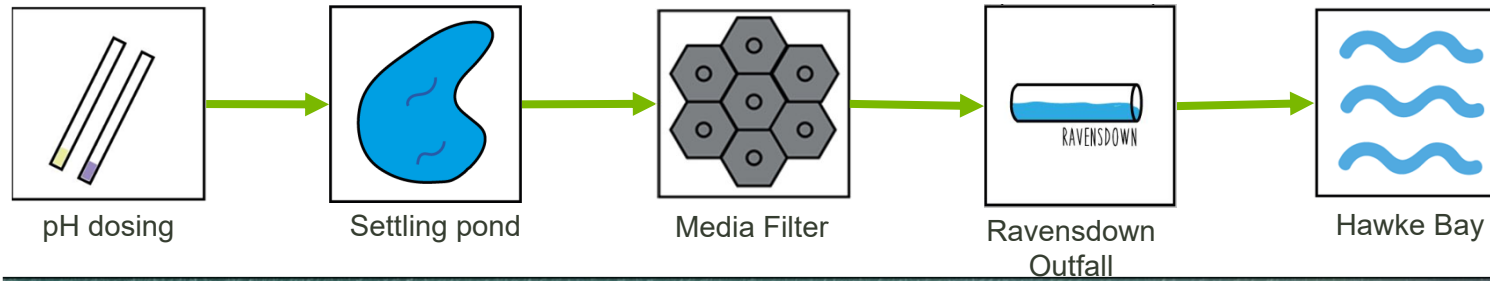
2. Hawke Bay

2A NCC wastewater treatment plant - connect directly to sea outfall



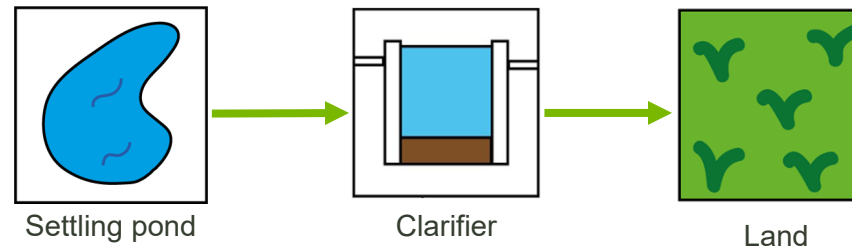
2. Hawke Bay

2B. Ravensdown site specific sea outfall



3. Land

3A. Spray irrigation or 3B. Soakage and rapid infiltration



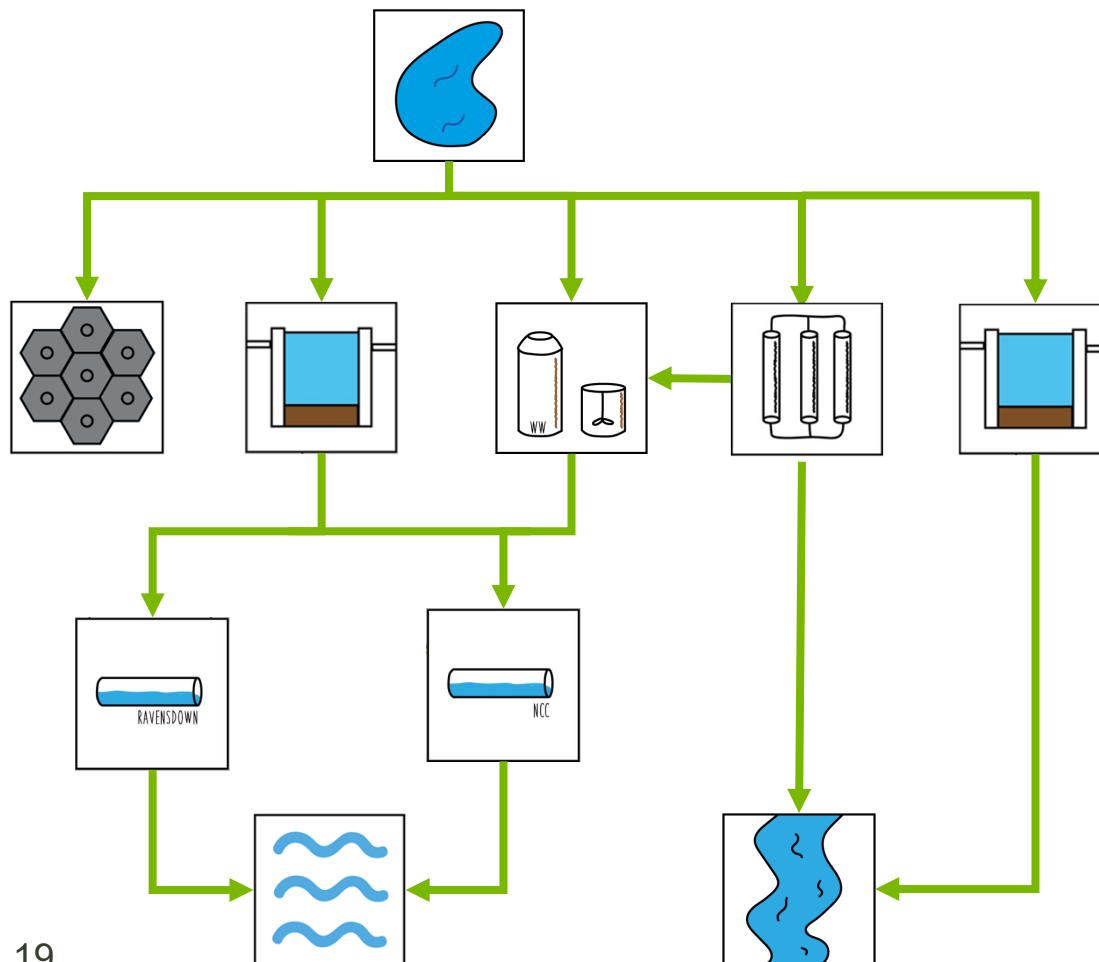
Combination of options

Split of high and low risk contaminant areas – Discharge high contaminants to NCC Wastewater Treatment plant and the rest of the site to the Waitangi Estuary

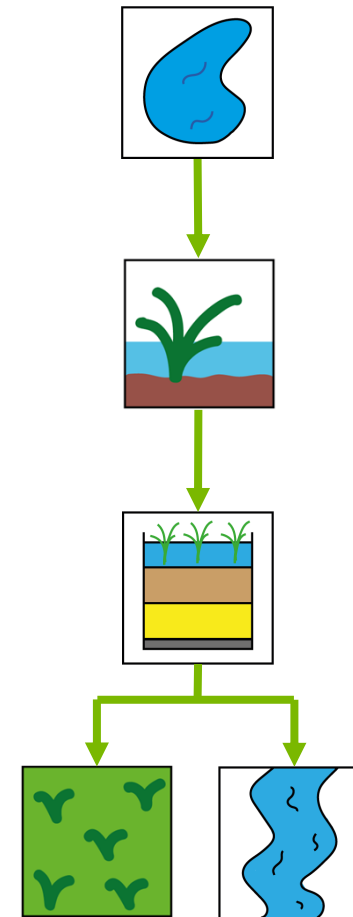


Split of high and low risk contaminant areas

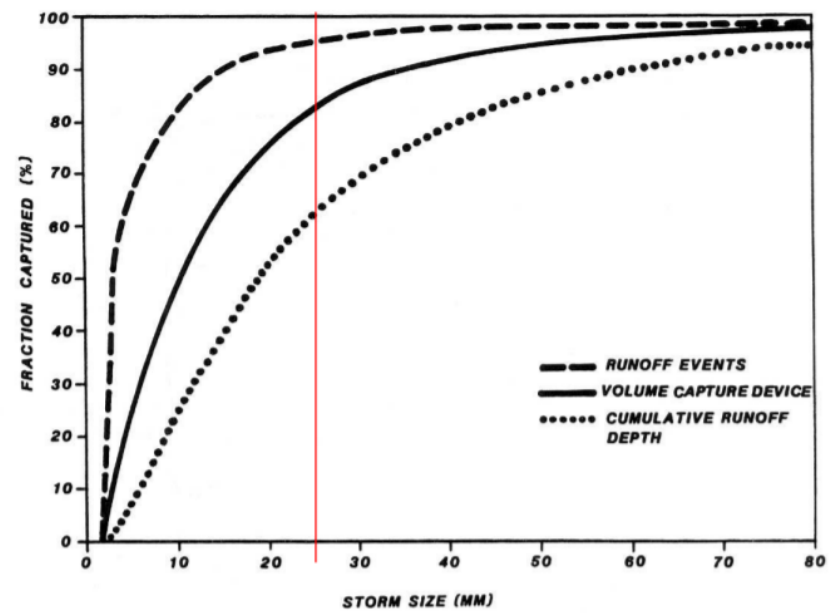
High contaminants



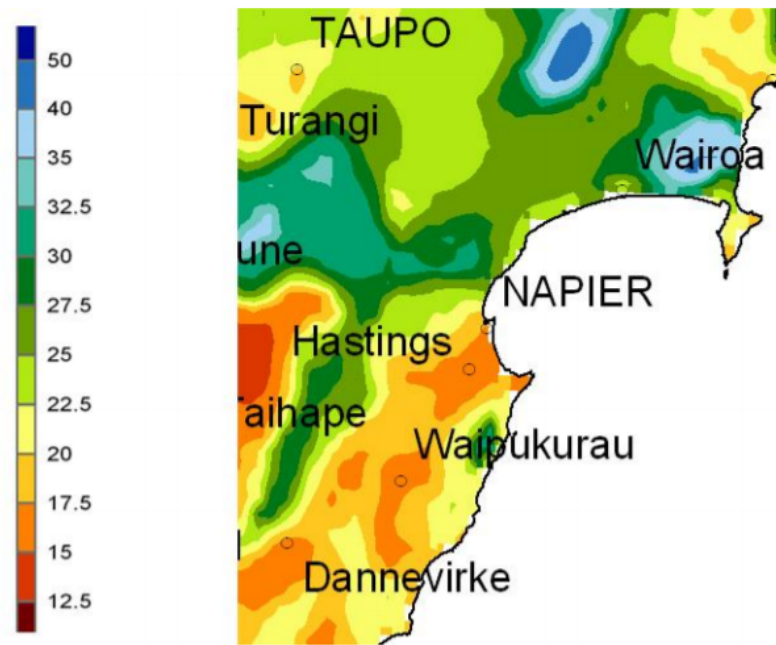
Low contaminants



System sizing



90% rainfall event depth for the Hawke's Bay Region



Options assessment



Discharge options assessment matrix

CRITERIA									
Technical			Consenting & Environmental			Financial ²		Stakeholder ³	
<i>Land/Storage requirement</i>	<i>Safety in design</i>	<i>System / technological complexity and reliability</i>	<i>Consistency with regional / national planning framework (RMA or NCC permits for trade waste / stormwater)</i>	<i>Ability to meet receiving environment limits / guidelines</i>	<i>Future-proof (climate / other unpredictability)</i>	<i>Capital cost</i>	<i>Operational costs</i>	<i>Mana Whenua Values</i>	<i>Other Stakeholder Considerations / Concerns</i>

Criteria Score	0 Not Acceptable / Fatal Flaw	1 Lowest Score	2	3	4	5 Highest Score
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What level of treatment would you like to see?

What rainfall event should we be treating?

Your feedback

Any 'black flag' receiving environments for discharges?

Matrix scoring and weighting

Thank you



*Bringing ideas
to life*