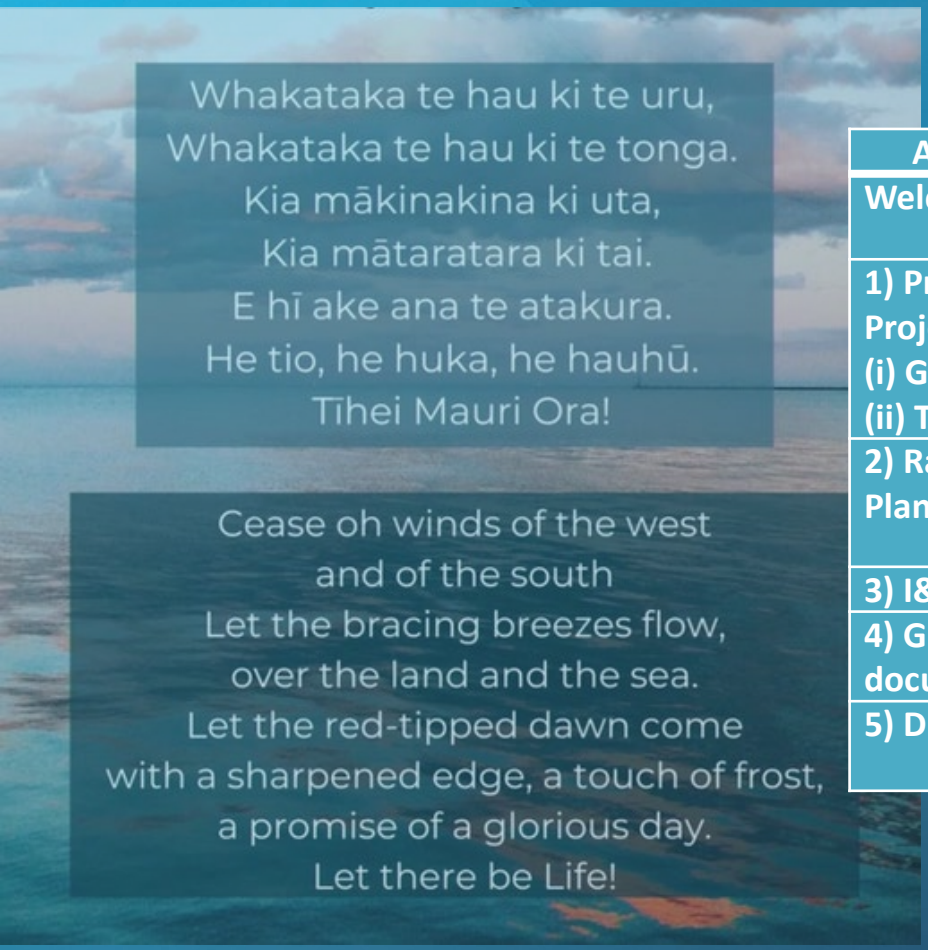
Raglan WWTP Discharge Consent Application Project

May 2023– Technical update



Agenda		
Welcome/ Introductions/ Overview	Cllr	5m
1) Project update & Re-iteration of Project Scenarios for discharge, covering (i) Governance decision phases & (ii) Technical and RMA processes	Steve	10m
2) Raglan Membrane Bioreactor (MBR) Planning Overview	Steve/Richard	5m
3) I&I – Raglan Network Summary	Richard	10m
4) Groundwater Expert Studies to document Location Characteristics	Steve	10m
5) Discussion and Q/A time	Cllr	

Waikato DISTRICT COUNCIL
Te Kaunihera aa Takiwaa o Waikato

1) Project Update/Project Scenarios/WGB Reporting

PROJECT UPDATE

April 2023 slide

Summary: the Investigation site : 20 hectares of the area have suitable soil pockets, winter storage, and a relief valve.

Activity 1: conveyance studies in coordination with wider corridor planning, such as Waikato 2070/PDP.

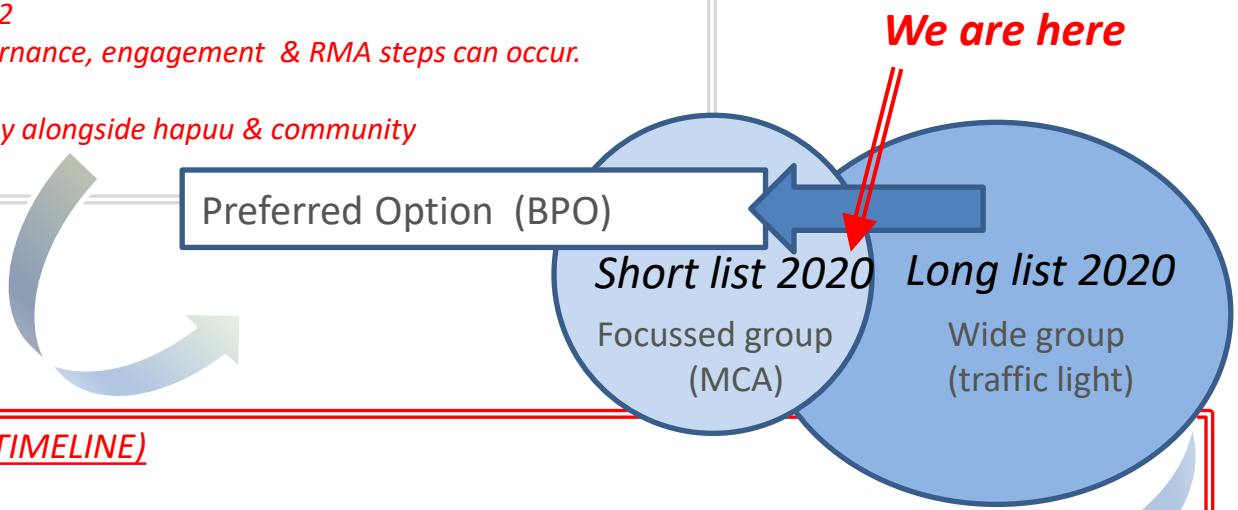
May Update: Act 1: BoD still under preparation (ETA End June); conveyance finalisation; costing thereafter

Activity 2: WDC led activity: MOU

May Update: Act 2: MoU still under review

Activity 3*:* Best Practical Option:
Status: *Feasibility is dependent on activities 1&2*
ETA: *with feasibility established necessary governance, engagement & RMA steps can occur.*

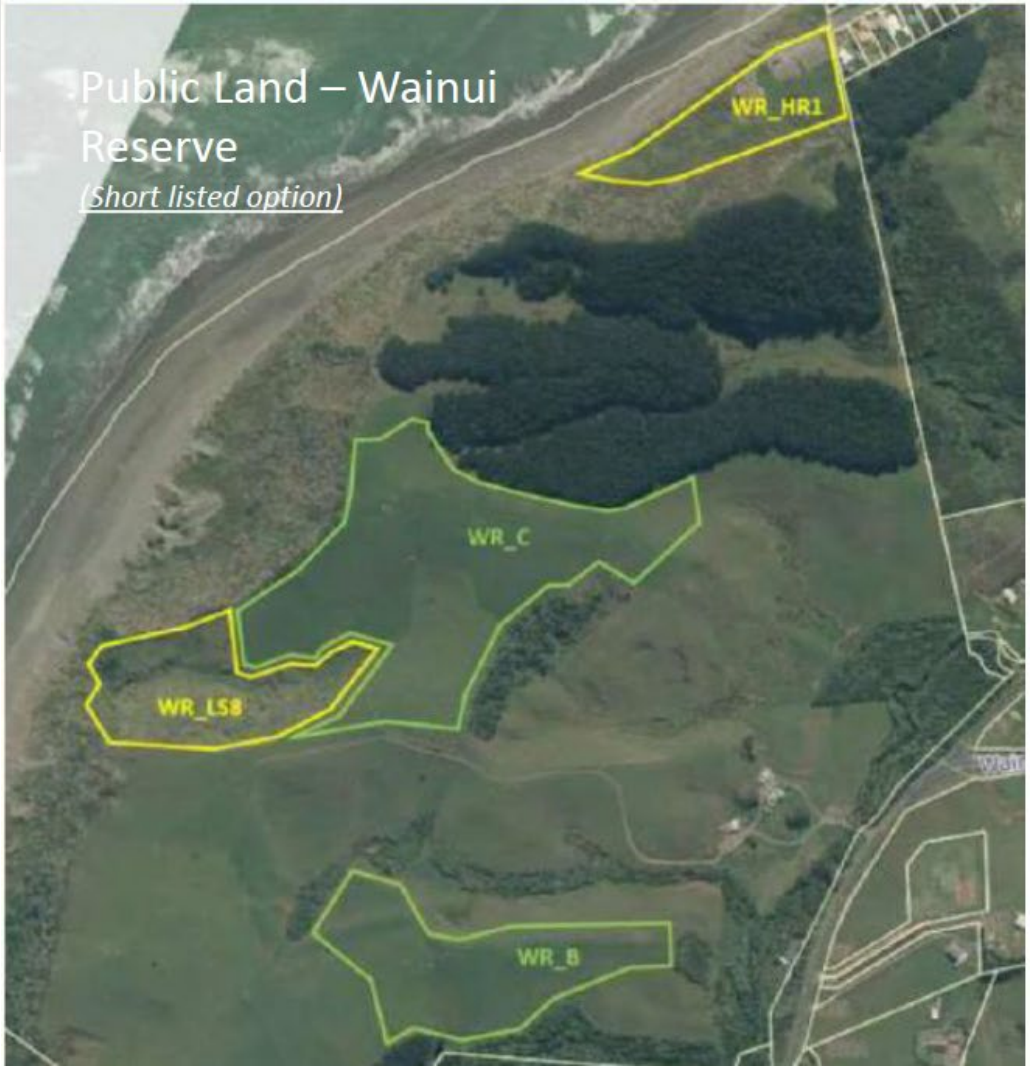
Critical Associated Work Package: *BPO strategy alongside hapuu & community*



- *PHASE PROJECT STEPS (ESTIMATED TIMELINE)*

- ***Feasibility:*** of any theoretical private land solution determined - **TBD *(ESTIMATE July);***
- ***Governance:*** *advice* on 'Next Steps' still to be received *(paper to board needed –* ***ESTIMATE July/Aug);***

- ***Critical Milestone:*** *Short List Multi criteria Analysis Phase (MCA) - Process alongside Community & Hapuu using outputs from above processes, and other criteria that are derived from project objectives* ***TBD difficult to predict given variables***



The Wainui Reserve is considered:

i. A potentially useful addition in combination with another parcel of land to provide a complete land disposal solution; or,

ii. A standalone solution if nutrient disposal to the Tasman Sea, of effluent which has passed through the land options of the Wainui Reserve first, is acceptable;

There are however other important considerations offered by the Wainui Reserve, being:

i. The land is already owned by Council;
ii. The elevation of the highest point is in the order of just 80m – i.e. considerably lower & with lower pumping pressure requirements than either the Bensemen Road or Maungatawhiri Road Land parcels;
iii. The land is close to the Raglan WWTP, hence reduced conveyance is required; and,
iv. Uniquely, the conveyance would go west of the WWTP – while all other land disposal options would be fed from conveyance going east of the WWTP.

March 2022 Slide

Public Land Investigation Status: Paused: Level: Conceptual :

Discharge Update: Sub surface drip irrigation

To inform the Council and Water Governance Board of the progress that the Consenting Project Team in investigating a theoretical workable land discharge within Raglan via sub surface drip irrigation (SDI)

AND

To seek their feedback in respect to the principle of co-utilisation of public recreation reserve to contribute to such a solution

AND

To seek support for greater engagement with the wider Whāingaroa community on the opportunity for co-use.

Next Step: Seek advice from KSH/Community Board/Haapu on best manner to introduce scenario

March 2022 Slide: WGB Reporting

ALTERNATIVES CONSIDERED SINCE 1997 FOR RESOURCE CONSENT HEARING

13. Deep bore disposal Injection of treated wastewater to a series of deep disposal bores along the harbour foreshore.	$ 5.1M	✣ High cost. ✣ remote chance of finding a suitable rock layer for ground injection. ✣ Tangata whenua concern about risk of groundwater contamination. ✣ High probability of bore failure by clogging.
14. Land disposal to sand dunes (spray irrigation) Develop treatment plant as proposed. Pipe across harbour to spray irrigate sand dunes at Horea on northern side. Re-vegetate dune area.	$ 6.1M	✣ High cost. ✣ Maori burial grounds in the area, exact location unknown.
15. Infiltration along coastal shoreline (Kaikoura) Infiltration of effluent from a single oxidation pond through porous coastal soils (pea gravel) to the sea.	Not assessed	✣ Antiquated system with likely adverse effects on coastal waters. ✣ No gravel soils on Raglan foreshore.
16. Dual disposal (Wainui Reserve/sea outfall) Develop treatment plant as proposed and construct overland flow irrigation over eastern slopes of Wainui Reserve. Irrigation during dry periods, sea discharge during winter/wet periods.	$ 5.5M	✣ High cost. ✣ Unsuitable soil types in Raglan area. ✣ Risk of runoff from disposal site to sensitive inner harbour estuarine areas. ✣ Risk of erosion and land instability at irrigation site. ✣ Sea outfall still needed.
17. Land disposal at Te Uku (spray irrigation) Develop treatment plant as proposed and construct spray irrigation over farmland in the Te Uku	$11.9M	✣ High cost. ✣ Unsuitable soil types in Raglan area. ✣ Risk of runoff from disposal site to sensitive inner harbour estuarine areas.
18. Land disposal at Te Hutewai (spray irrigation) Develop Wainui Road treatment plant as proposed. Construct spray irrigation over farmland in the Te Hutewai area approximately 5 km south of treatment site.	$ 8.8M	✣ High cost. ✣ Unsuitable soil types in Raglan area. ✣ Risk of runoff from disposal site to sensitive inner harbour estuarine areas.
19. Tokoroa Develop mechanical treatment plant as at Tokoroa with discharge to shallow gravel-filled trench to stream	$ >6M	✣ High cost. ✣ Sea outfall still needed. ✣ Not perceived as a "natural" treatment system. ✣ Less suited to Raglan's highly variable wastewater flows. ✣ Tangata whenua do not support trench disposal concept.
20. Whangamata, Rotorua Develop land disposal as per Whangamata and Rotorua. Spray irrigation to established pine forest.	$12M	✣ High cost. ✣ Unsuitable soil types in Raglan area. ✣ Risk of runoff from disposal site to sensitive inner harbour estuarine areas.

https://www.waikatodistrict.govt.nz/docs/default-source/services-and-facilities/water/wastewater/raglan-wastewater-discharge-consent/historic-documents/1999-option-summary.pdf?sfvrsn=90198ac9_2

2) Raglan Membrane Bioreactor (MBR) Planning Overview

Figure: Hollow-fibre membrane cassette

The treatment plant upgrade is progressing in the design stage such that:

- High quality treated wastewater will be produced,
- The plant will have ample capacity for growth well into the future,
- Known, reliable processes are chosen (such as MBR in image),
- Compact plant within the current footprint of the ponds;
- Ample buffer storage capacity for wet weather events

3) I&I – Raglan Network Summary

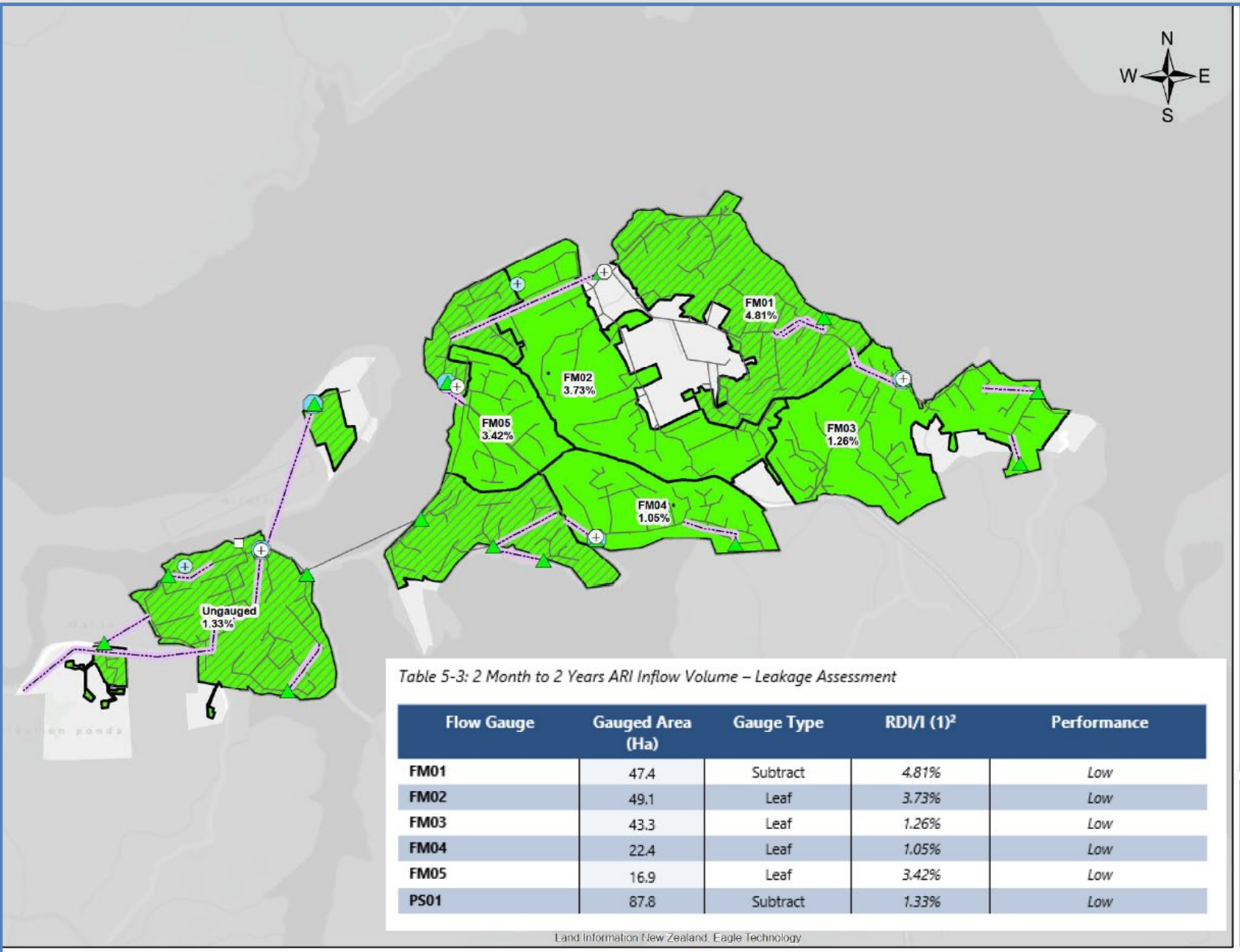


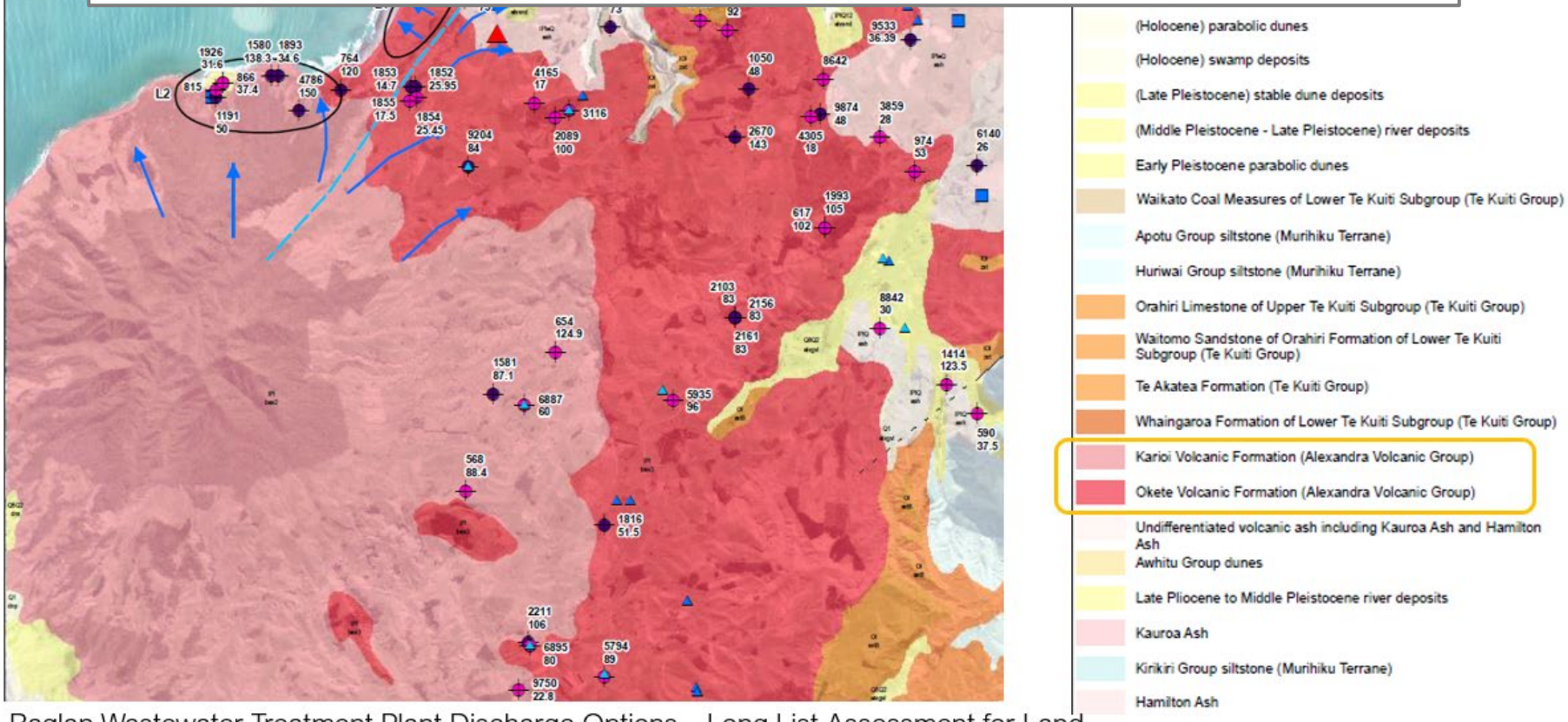
Table 5-3: 2 Month to 2 Years ARI Inflow Volume – Leakage Assessment

Flow Gauge	Gauged Area (Ha)	Gauge Type	RDI/I (1)[2]	Performance
FM01	47.4	Subtract	4.81%	Low
FM02	49.1	Leaf	3.73%	Low
FM03	43.3	Leaf	1.26%	Low
FM04	22.4	Leaf	1.05%	Low
FM05	16.9	Leaf	3.42%	Low
PS01	87.8	Subtract	1.33%	Low

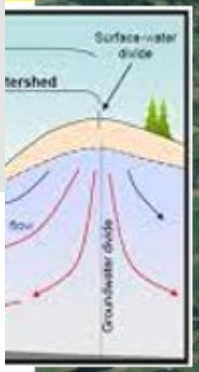
Land Information New Zealand, Eagle Technology

4) Groundwater Expert Studies to document Location Characteristics

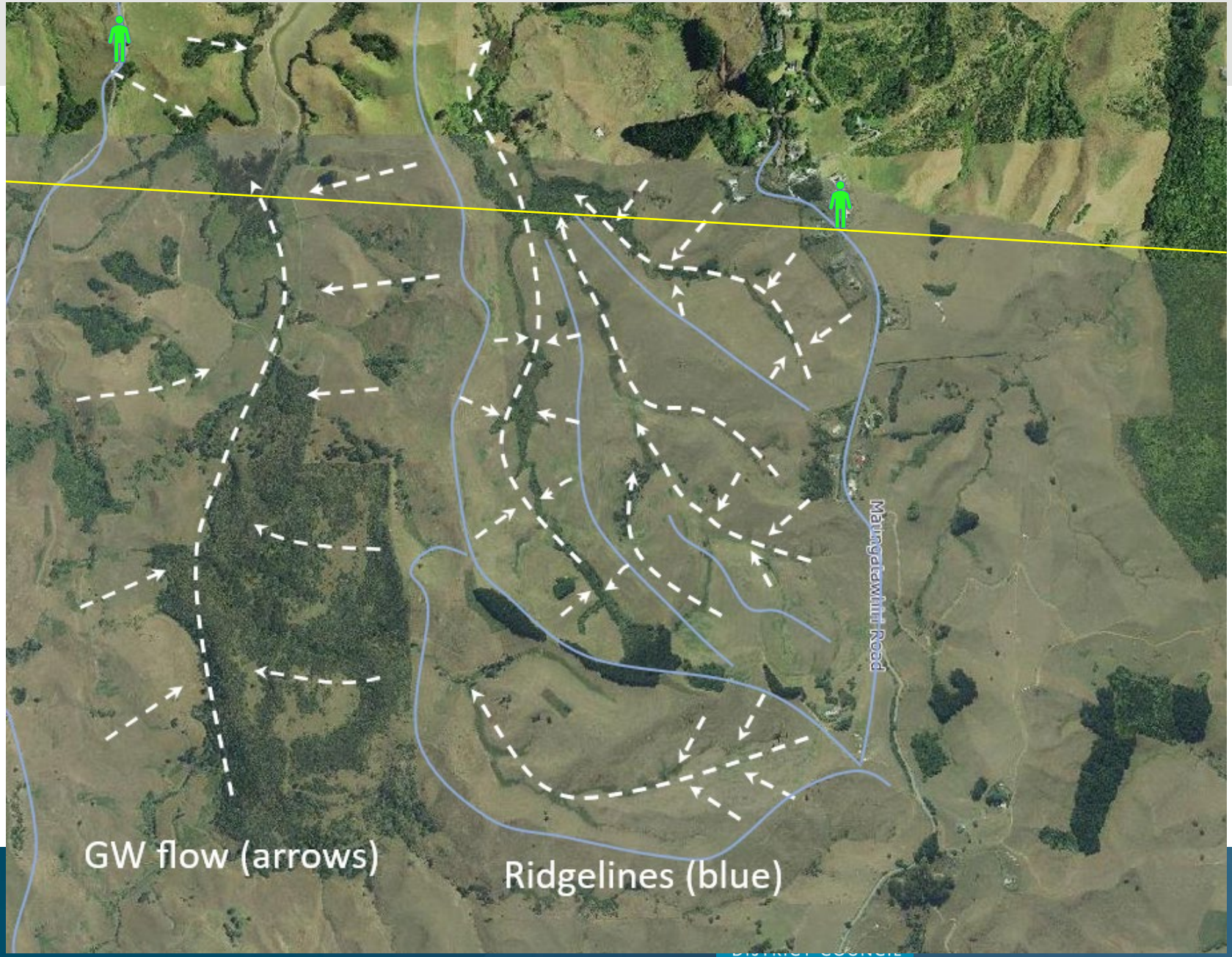
Who: *Technical Lead – Mauricio Taulis – Associate – Hydrogeology*
What: *Desktop Study for Groundwater in the region*
Why: *Project documentation to accompany any SDI (land discharge) consenting initiative*
When: *Scope preparation underway (KSH review anticipated)*



Raglan Wastewater Treatment Plant Discharge Options – Long List Assessment for Land Treatment and Deep Bore Injection, PDP 2020


Surface-water divide
Groundwater divide

Raglan Water Supply Spring
Expert Opinion
Okete and Kariori Formations


GW flow (arrows)
Ridgelines (blue)
Matangarewhiti Road

5) Closing:

- Round Up: Technical Project Team: *FAQ Document*
- Chairman: