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Dannevirke Impounded Supply

Public Meeting

28 November 2023

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Presentation Outline

- History of the Impounded Supply
- Leaks and Temporary Repairs
- What is the Problem
- Water Supply Risk Mitigation Measures
- Extraordinary Council Meeting – Key Outcomes including Funding Model
- Detailed Design of Remediation Works
- Expectations for Summer 23/24
- Next Steps

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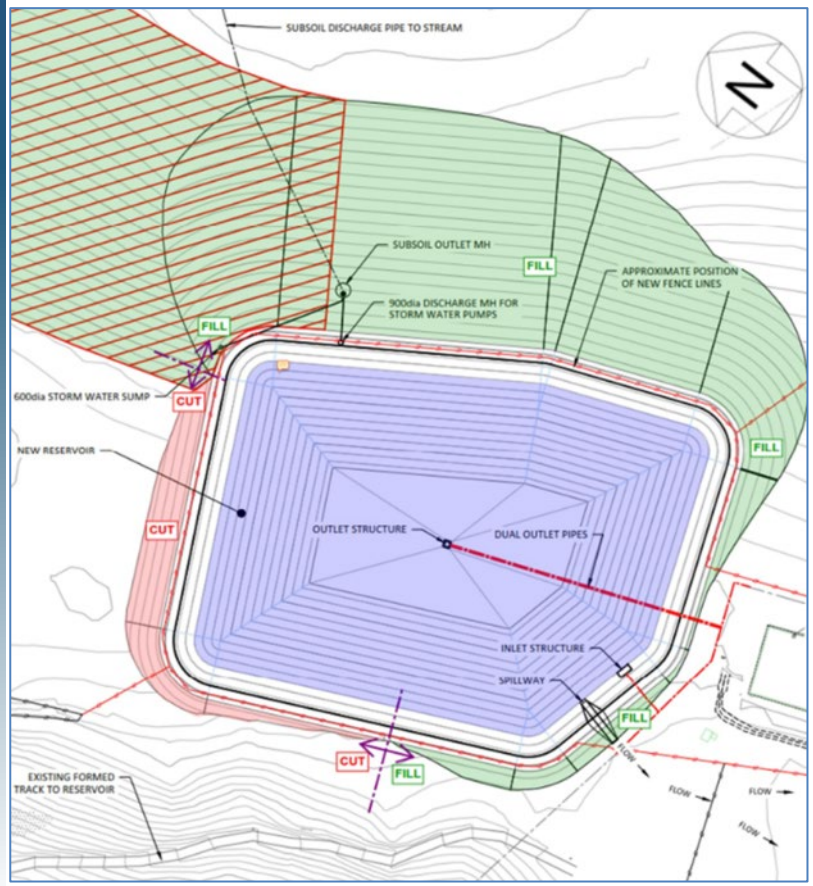
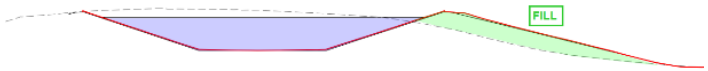
History of the Impounded Supply



Commissioned in 2013

Full supply volume: 120ML
Full supply depth: 12m

Mostly an excavated pond except for a dam fill embankment on the eastern side.



SECTION

Concrete structures = Inlet, Outlet, Spillway.

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Initial Leak

July 2021 to September 2021.

Observations:

- Subsoil outlet flows increased
- Reservoir level started dropping
- After floating cover removed,
  HDPE liner found to be “shredded” near the inlet
- The damaged liner below the inlet was repaired.
- ROV inspections found depressions under the HDPE liner:
  - On the slope below the inlet
  - At two locations on the reservoir floor
- Elevated level of water loss continued

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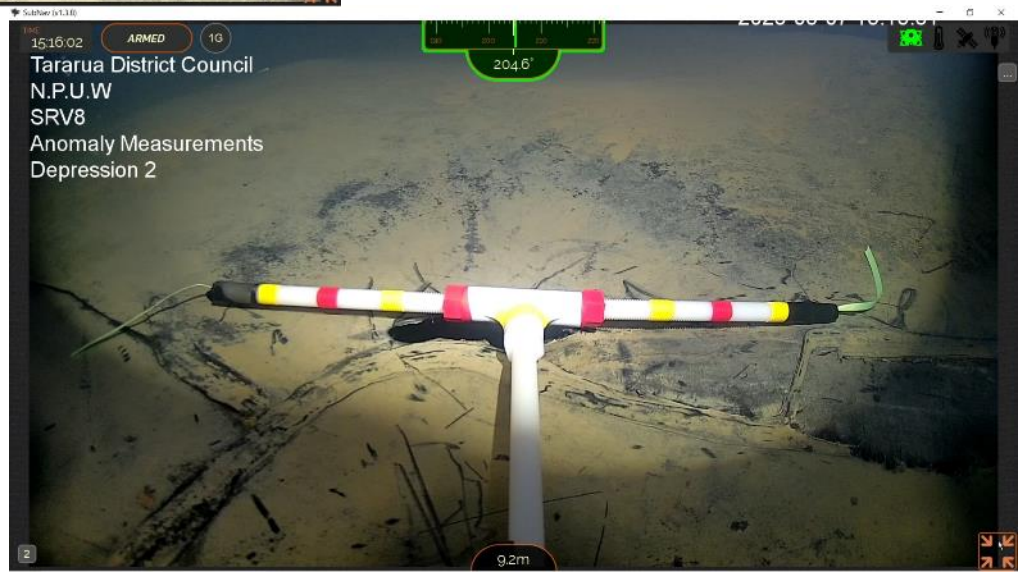
Subsequent Leaks

Two tears located in May 2023



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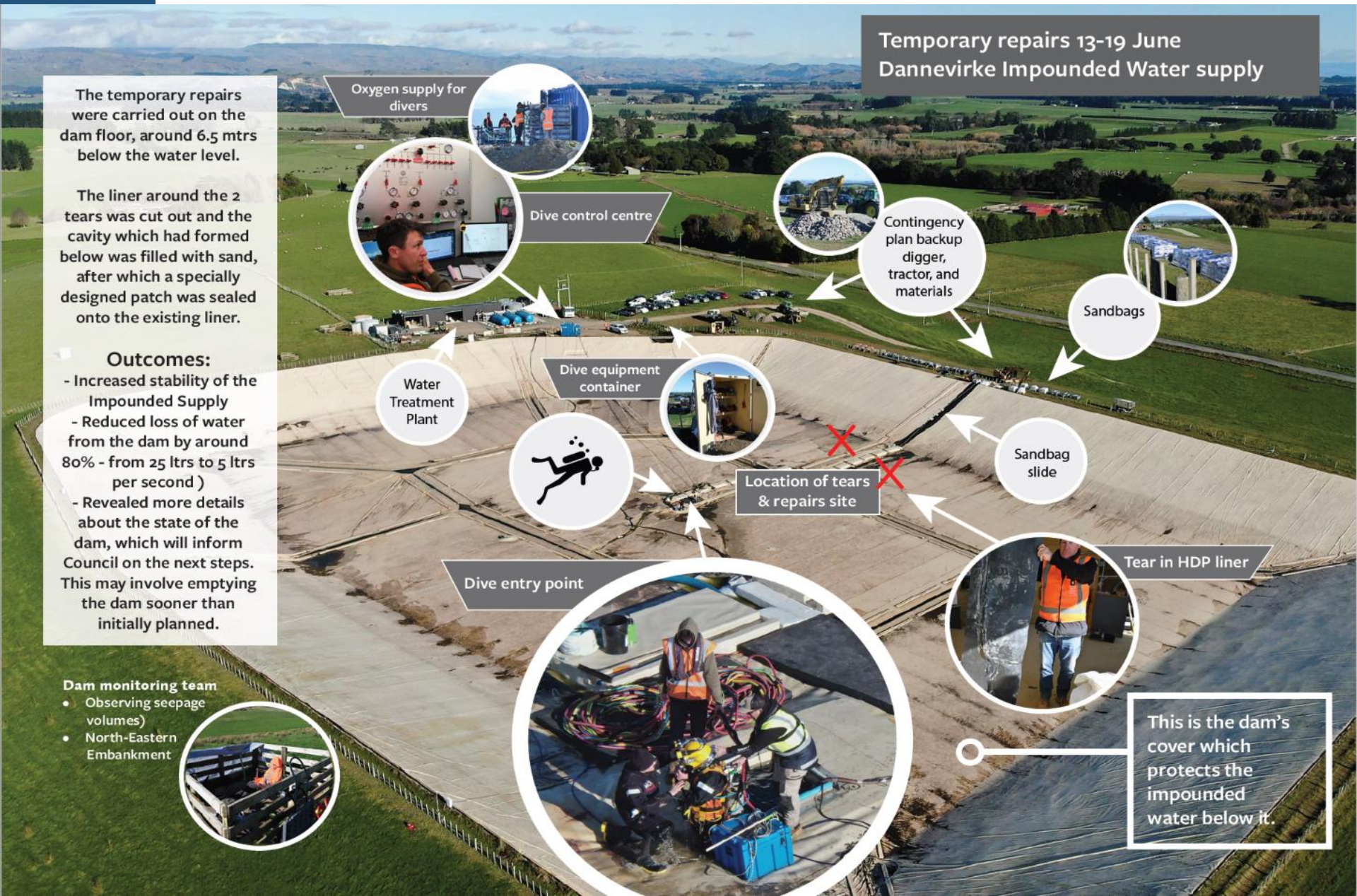
Temporary Repairs



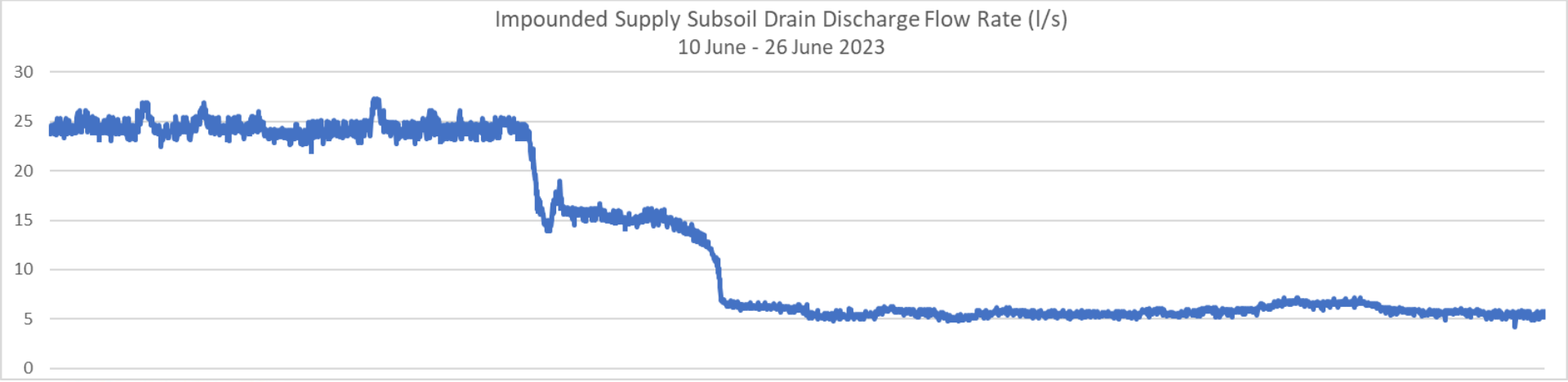
Outcome of Temporary Repairs

Outcomes:

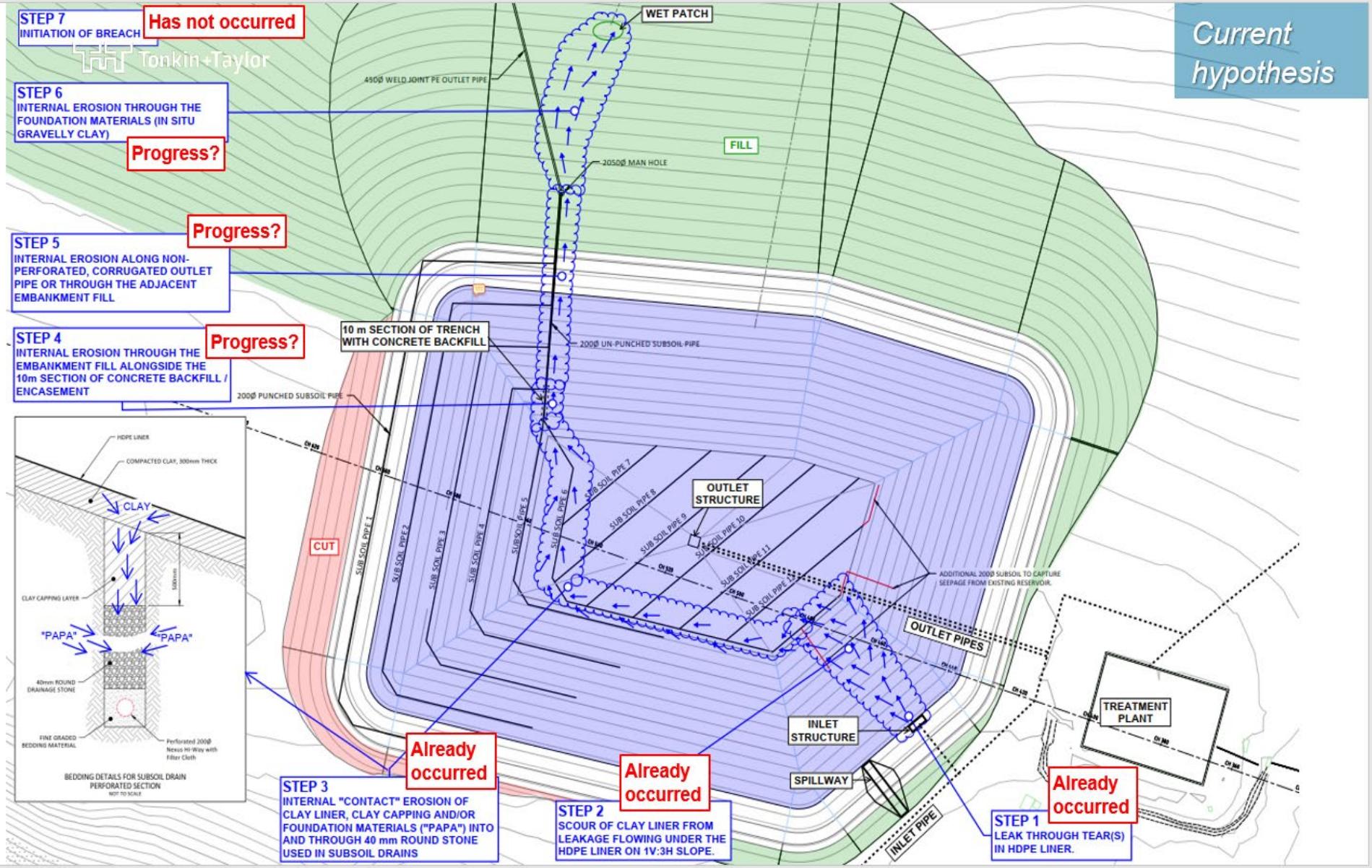
- Minor ongoing deterioration of internal depressions
- No deterioration of the eastern embankment ("dam wall") identified
- Subsoil drain outlet flow has reduced from ~25 litres per second to ~3 litres per second

From… 

To… 



What is the Problem?



Water Supply Risk Mitigation Measures Underway

- Identification of alternative water sources:
  - Alliance Meatworks – test bore unsuccessful
  - Tamaki River southwest of the Impounded Supply
- Leak detection in Dannevirke, Woodville, Pahiatua and Eketahuna. Repairs to the networks are underway.

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Water Supply Risk Mitigation Measures Underway

- Demand Management:
  - Metering connections between the Tamaki River intake / gallery and the Impounded Supply.
- Purchase an underwater remotely operated vehicle
- Maintain Impounded Supply at reduced depth
- Investigating the installation of flow meters on the sub-soil drain outlet pipes
- Investigating the condition of the Tamaki River intake / gallery

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Extraordinary Council Meeting 31 October 2023 – Key Outcomes

- Delayed the decision to commence the remediation works until the design work is complete including geological investigation and liner system confirmation.

- It is likely this will mean a delay to any permanent repairs until the 2024/25 construction season.

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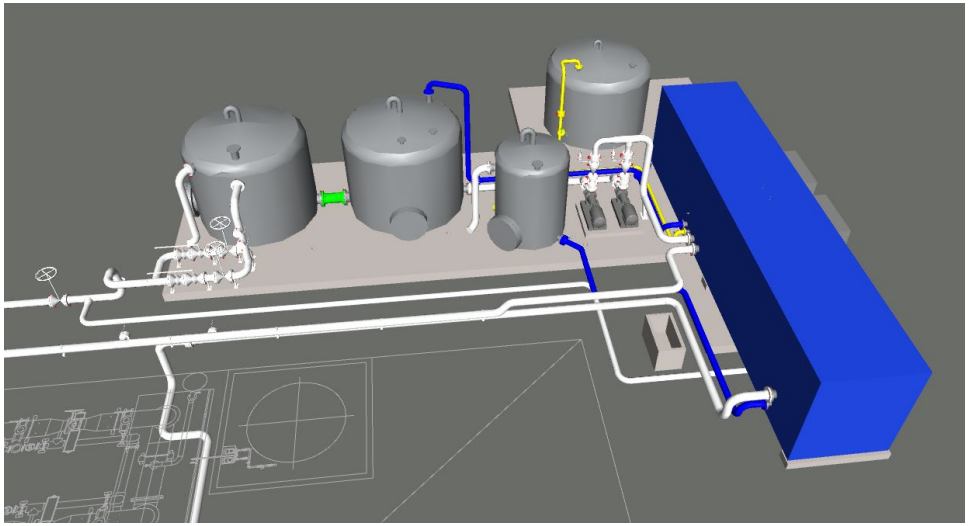
Purchase a Pre-Treatment Plant



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Purchase Raw Water Storage Kliptank

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Purchase a Treated Water Storage Tank

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Budgets Approved and Debt Funding

Budget approved

- Total Funding approved - $8.1M
  - Extraordinary meeting was $6.1m for pre-treatment and water tanks (raw and treated)
  - Spend to date - $1.95m

Debt Headroom

- Headroom following the capital $6.1m is $13.1m for 2023/2024 financial year
- When you consider this in conjunction with borrowings required for year 4 capital projects ($9.789 million) this reduces headroom availability to $2.9m

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Budgets Approved and Debt Funding

Other cost

- Interest cost estimated - $196,000 for first year and $392,000 second year onwards
- Depreciation estimated - $140,000 per year
- Note – yet to determine the operating cost associated with pre-treatment and water tanks

Funding

- Debt funded
- Rates
  - Targeted water rates
  - Estimated increase is $100.33 per year

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Expectations for Summer 23/24

- Water restrictions likely
- Boil water notices are a possibility

What you could do…

- Consider timing for high water use activities
- Consider onsite tanks for gardens
- Repair leaks on your property
- Report other leaks

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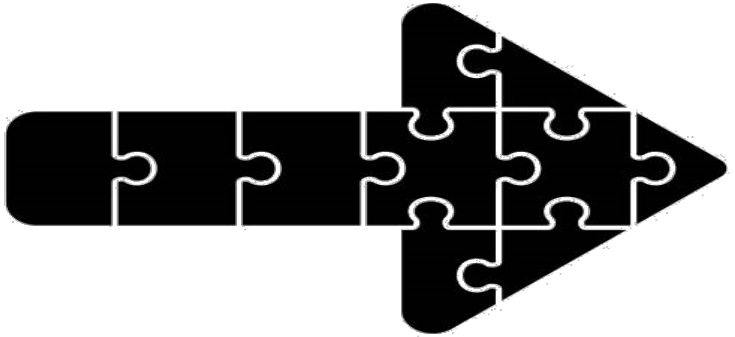
Next Steps

- Continue Monitoring Regimen
- Procurement and installation of:
  - Additional pre-treatment and raw water storage
  - Additional treated water storage
- Consolidation and assessment of geological investigations
- Completion of detailed design
- Preparation for 23/24 Summer



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Questions

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