QLDC Council Workshop

Project: Shotover WWTP Long Term Disposal Solution

Date: 19th February 2026

Presented By:

Simon Mason – Infrastructure Operations Manager – QLDC

Scott Paterson Project Manager – QLDC

Purpose: Workshop on Shotover WW Disposal Options

QUEENSTOWN LAKES DISTRICT COUNCIL

Agenda

120 mins
1.05 pm
1.35 pm
1.50 pm
2.00 pm
2.10 pm
2.25 pm
2.35 pm
2.50 pm
3.00 pm

- Summary of Short List & Preferred Option (5 mins)
- Wastewater Environmental Performance Standards (WEPS) (30 mins)

  Opportunity for Questions (15 mins)
- Land availability for disposal in the Wakatipu Basin (10 mins)
- QLDC Strategy for wastewater management in the Wakatipu Basin (10 mins)

  Opportunity for Questions (15 mins)
- Iwi Engagement (10 mins)
- Consenting Pathways & Communications Strategy (15 mins)
- General Q&A (10 mins)

Summary of Short-List & Preferred Option

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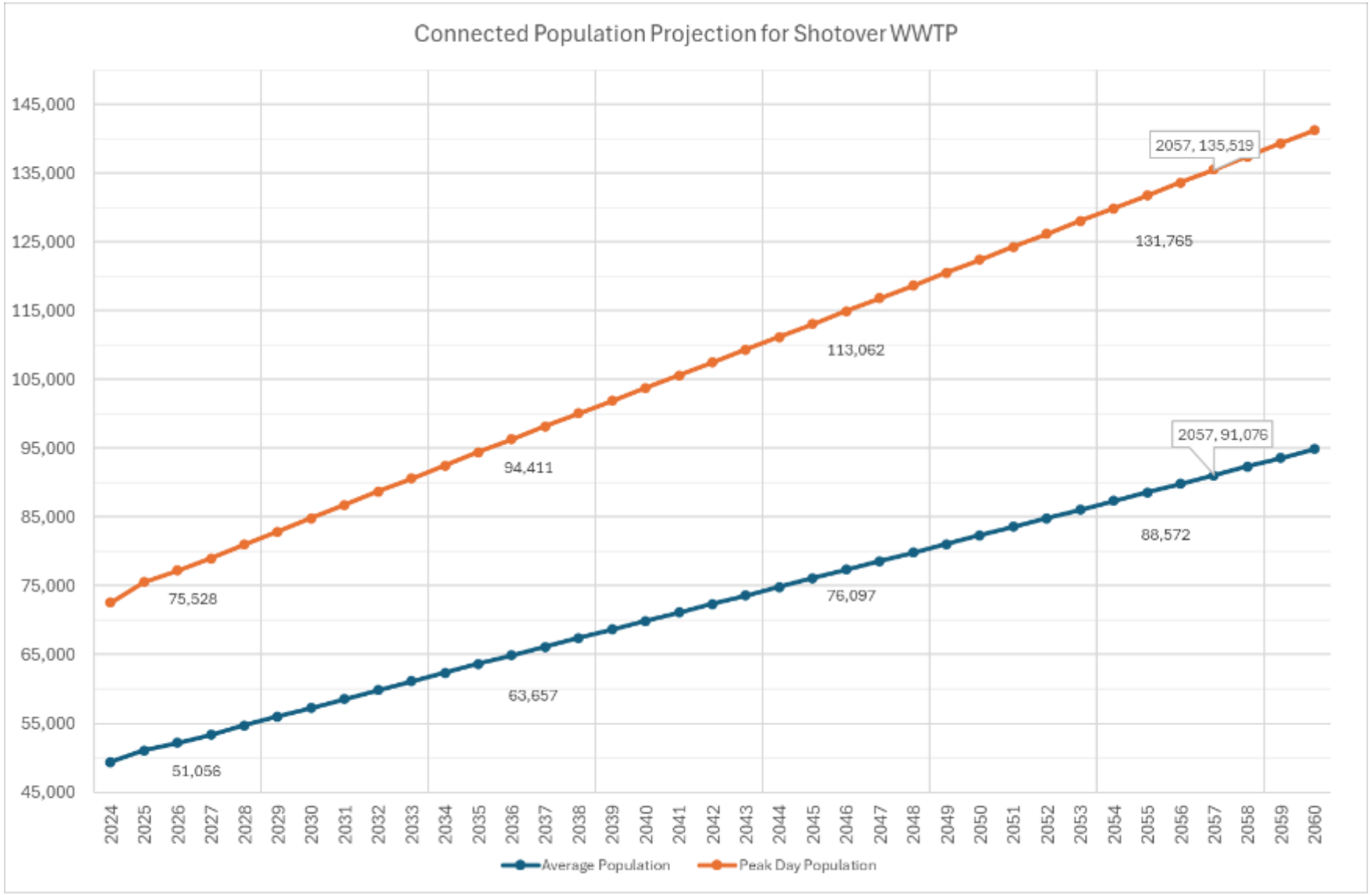
Treated Wastewater Volumes



Shotover Treated Wastewater Volumes

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Stage 3 (Current) – #2 MLE & Clarifier

Future Capacity Upgrade

Current Average Dry Weather Flows (ADWF) :

5 Olympic Swimming Pools Per Day

12.5 million litres per day

2060 Average Dry Weather Flows (AWDF):

10.5 Olympic Swimming Pools Per Day

26 million litres per day

2060 Peak Wet Weather Flows (PWWF) :

24 Olympic Swimming Pools Per Day

60 million litres per day

Scale of treated wastewater that the Wakatipu Basin must dispose of every day.

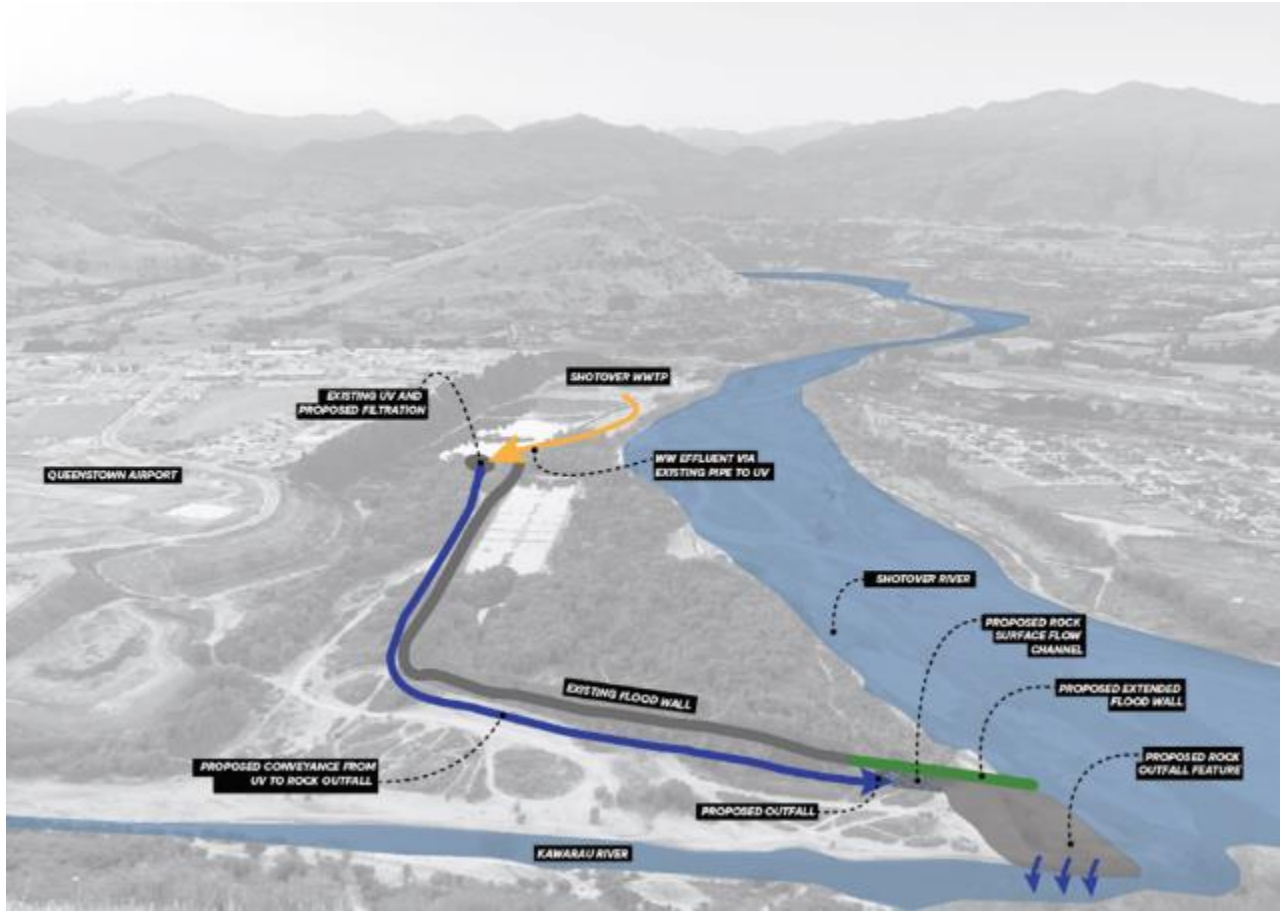
Shotover Treated Wastewater Volumes

	Litres per day	Olympic Pools per day	Litres per minute	Percentage of flow of Kawarau
Kawarau River	18,662,400,000	7,465	1.296e+7	100%
2025 ADWF	12,500,000	5	8700	.00067%
2060 ADWF	26,000,000	10.5	18,000	.0014%
2060 PWWF	60,000,000	24	42,000	.0032%

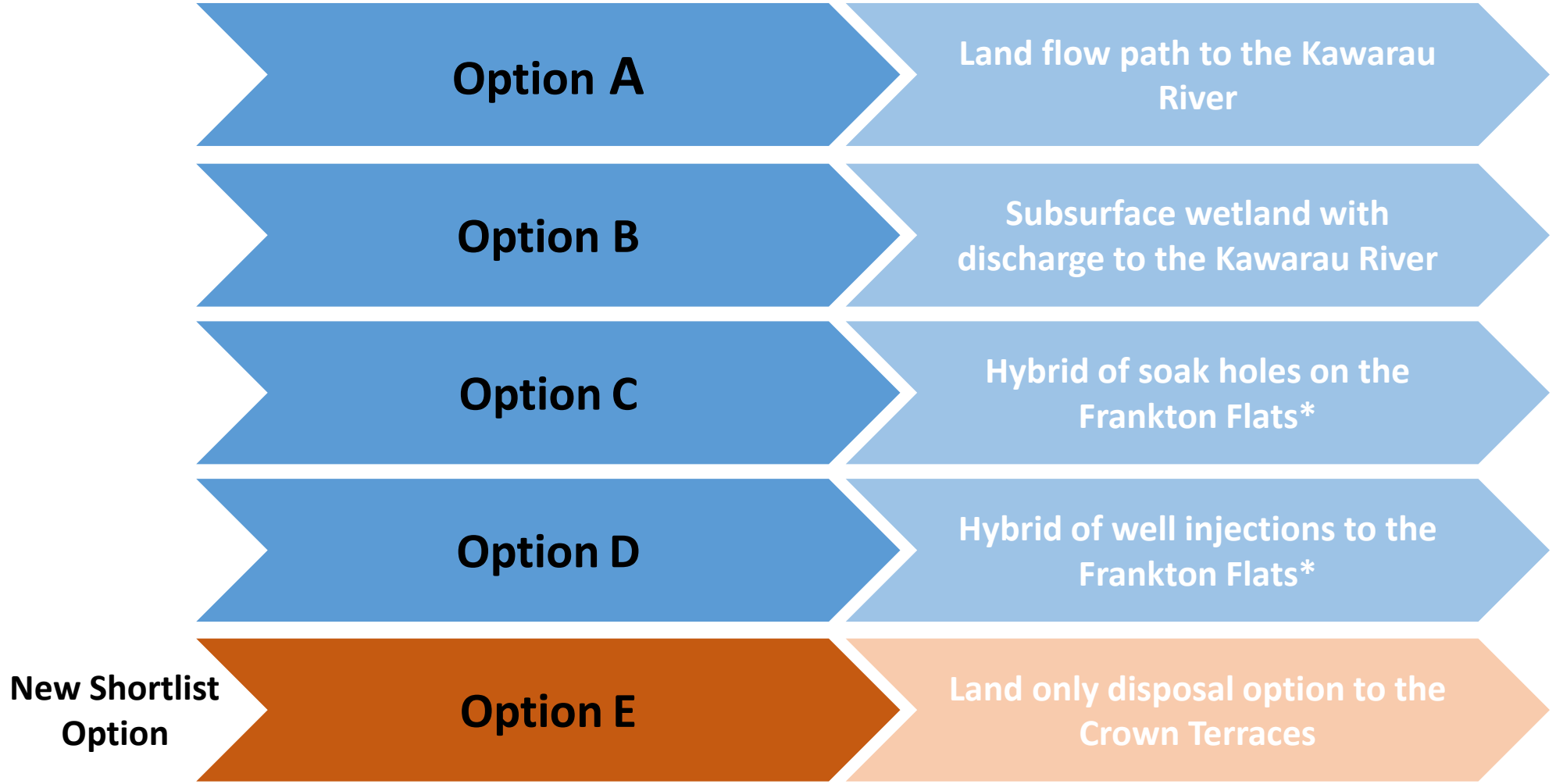
Technically Preferred Option – Option A

Option A – Discharge to the Kawarau

- Greater certainty for accommodating future flows.
- Lowest risk, simplest design and operation.
- Leverages existing QLDC Land and designation.
- Lowest capital, operating and WOL Costs.
- Achievable within timelines set down in Enforcement Order.
- Improved environmental outcomes from current and previous discharges.
- Able to accommodate future treatment upgrades and plant augmentation.



Evolved Short List Options



*Supplemented by discharge to the Kawarau River to meet 2060 wastewater flows.

5 Short List Disposal Options - Overview

Preliminary Capital Costs & NPV– (Provisional)

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	Option A Rock outfall	Option B Wetland	Option C Bores	Option D Soakholes
Construction cost Stage 1	$33M to $38M	$64M to $73M	$97 to $111M	$96M to $109M
Implementation cost Stage 2	-	-	$51 to $58M	$70M to $80M
Consent, investigations, and design	$6M	$7M	$17M	$17M
TOTAL	**$39M to $44M**	**$71M to $80M**	**$165M to $186M**	**$183M to $206M**
Estimated Operating Cost (related to disposal only, includes allowance for contingency and asset renewal)	$320k to $460k	$430k to 620k	Stage 1 (Trial): $790k to $1.1M Stage 2 (Future): $1.4M to 2.1M	Stage 1 (Trial): $740k to $1.1M Stage 2 (Future): $1.5M to 2.2M
Net Present Value - 30yr timeline - (Circa)	$48M	$85M	$188M	$209M

Wastewater Environmental Performance Standards (WEPS)

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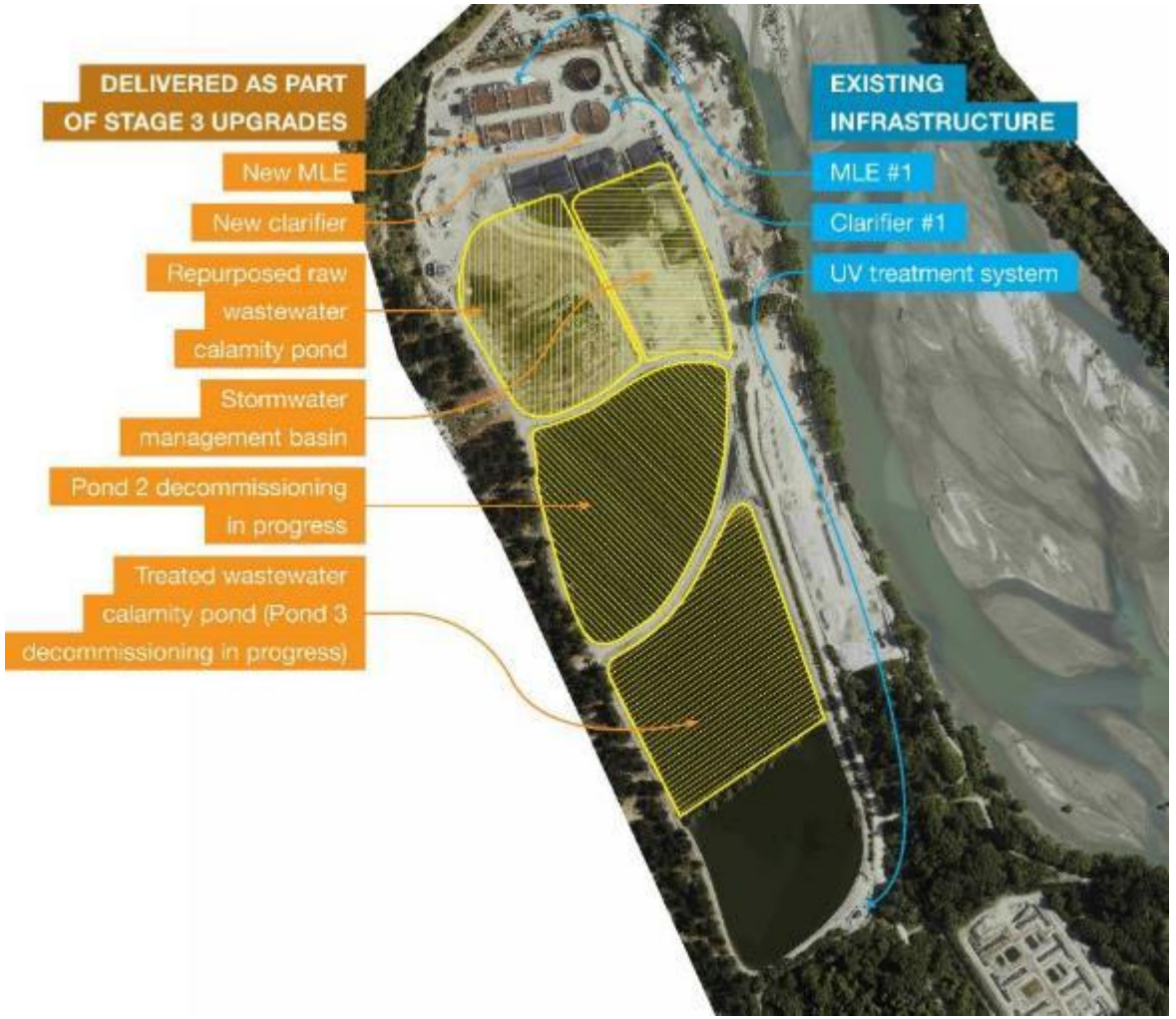
Environmental Assessments

WHAT HAVE WE GOT?

- Water monitoring wells in place and providing data on water levels & water quality in the delta as part of EO.
- March 2025 sampling undertaken of the Kawarau and Shotover Rivers – baseline understanding of effects of WW discharge.
- Detailed understanding of SWWTP treated WW discharge results, over period since the second MLE and clarifier came online.

WHAT WE'RE FINALISING ONCE RECOMMENDATION IS ENDORSED & PRIOR TO APPLICATION?

- Shotover and Kawarau ecological monitoring.
- Kawarau field ecological assessment.
- Hydrological investigation and assessment.
- Water quality investigation of the Kawarau – To confirm 'pristine' water status.
- Water quality assessment for long term consent application – incl. emerging contaminants (PFAS & microplastics).
- Periphyton risk assessment.
- Quantitative microbial risk assessment (QMRA) – TBC



WEPS – What are they & where do they apply?

Wastewater Environmental Performance Standards – Came into effect on 19th December 2025, establish national minimum environmental thresholds for discharges of wastewater to **land and water.**

Short Term Consent	Application lodged May 2025, therefore not legally subject to the new standards	However, still expected to be used by TA as a benchmark when assessing environmental effects
Long Term Consent	Consent planned May 2026, therefore must comply with the WEPS unless an exception applies	Exception expected to apply to any discharge to the Kawarau

Exception 1: Drinking water abstraction <1000m upstream or <100m downstream.

Exception 2: Water Discharge to aquifer.

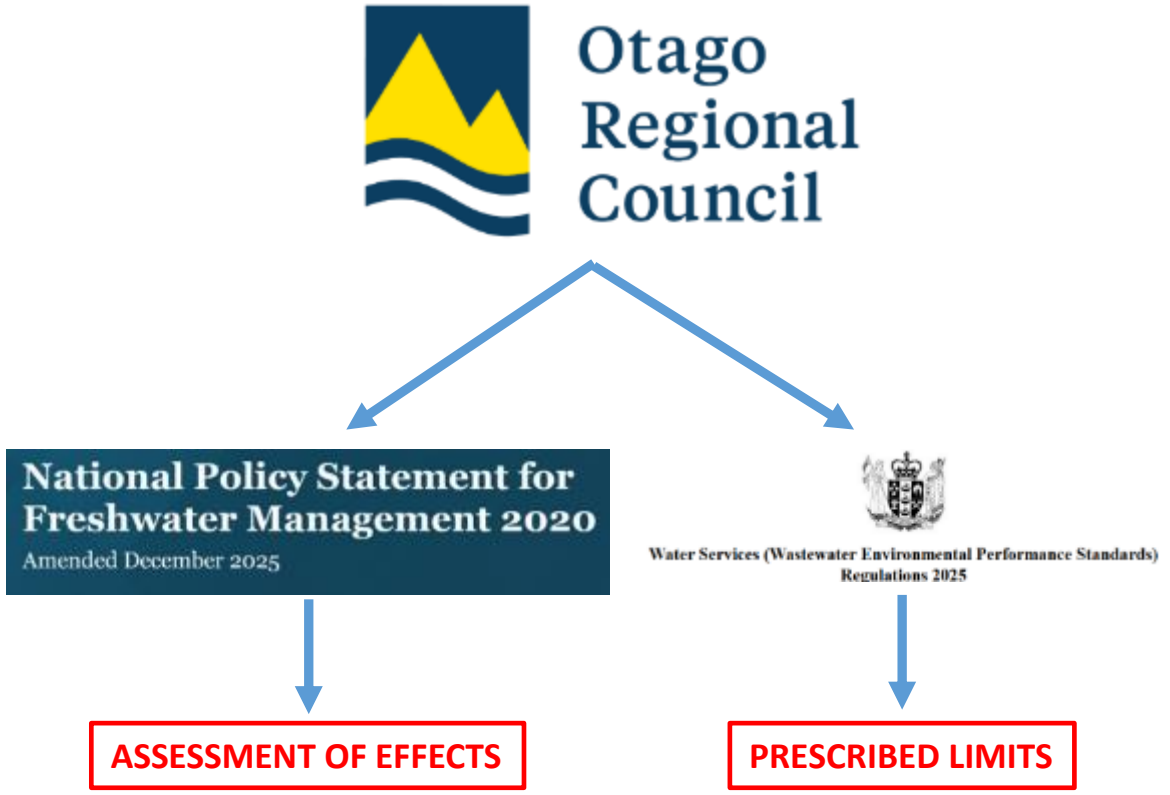
Exception 3: Discharges have an adverse effect on a site of cultural significance.

Exception 4: Discharge into a 'pristine' freshwater body per the NPS-FM.

WEPS Impact – Discharge to Water

If the WEPS don't apply, what are the prescribed discharge limits?

- Ultimate determination whether the receiving environment meets the 'pristine' freshwater body, made by the consent authority.
- If the Kawarau meets the National Policy Statement – Freshwater Management (NPS-FM) Band A attributes, the consent application will be assessed on an effects basis, as required before introduction of the WEPS.
- WEPS are expected to provide a guide for the consenting authority, in considering the discharge activity and the potential effects.



WEPS Impact – Discharge to Water

River Dilution Category				
Category	Very Low	Low	Moderate	High
Ratio	<10	>10 & <50	>50 and <250	>250

Kawarau expected to align with moderate dilution category, subject to dilution modelling assessment and confirmation of outfall design/diffuser.

Periphyton Risk Category				
Category (State)	A – Low Risk	B – Moderate Risk	C – High Risk	D – Very High Risk
Mg chl-a/m2	<50	>50 & <120	>120 & <200	>200

Kawarau expected to align with low-risk category given wastewater has historically contributed to the nutrient load, without any apparent significant periphyton growth.

WEPS Impact – Discharge to Water

Shotover WWTP Current Performance		
Total Nitrogen (TN)	Total Phosporus (TP)	Total Ammoniacal Nitrogen (TAN)
mg/l, annual median	mg/l, annual median	mg/l, annual 90th %
6.7	**0.9**	**2**

Anticipated Limits for the Kawarau River		
Total Nitrogen (TN)	Total Phosporus (TP)	Total Ammoniacal Nitrogen (TAN)
mg/l, annual median	mg/l, annual median	mg/l, annual 90th %
7-10	**1-3**	**3**

Moderate Dilution

Low/Medium Periphyton Risk Category

Within proposed consent limits, or able to be met without significant changes or upgrades to SWWTP

Enhanced Treatment Options

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STATUS	ENHANCEMENT	ANTICIPATED CAPEX	EXPECTED BENEFITS
Currently Included	Scoped	Tertiary Filters (2x) upgrade, upstream of existing UV's - $15m	Pile cloth filters which trap suspended solids, down to approx. 5 micron. Robust TSS and TP reduction.
Additional Enhancement	Do Minimum	Supplementary carbon and alum dosing (and greater sludge removal) - $700k to $1.4m	Improved denitrification provided through carbon dosing and alum dosing reduces total phosphorus.
Additional Enhancement	Do More	Additional UV reactors installed downstream of the proposed pile cloth mediate tertiary filters – $3.3m to $7.7m Membrane Filtration (in lieu of pile cloth media tertiary filters) - $30m to $55m	Further reduces the viruses and other pathogens in the treated effluent. Membrane provides physical barrier to pathogens, including viruses. Lowers TSS to detection limit. Main benefit is that treated WW is almost completely free of solids.
Additional Enhancement	Do Maximum	Mass reconfiguration of the SWWTP into a 5 stage BNR or MBR. Significant disruption to existing reactors, costs circa $300m plus.	Very low nutrient levels (TN<4mg/l) treated wastewater. Would negate the need for a third MLE reactor and secondary clarifier beyond 2048 design.

WEPS Impact – Rock Outfall vs. Diffuser

Proposed location of rock outfall structure to the Kawarau River.

CGI of what this might look like along the true right of the Kawarau River.

WEPS Impact – Rock Outfall

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WEPS Impact – Diffuser

WEPS Impact – Rock Outfall vs. Diffuser

Recommendation: Rock Outfall.
Further work to be undertaken as part of Environmental Assessments to determine potential benefits and risks around the diffuser.

Option	Rock outfall	Diffuser outfall
Pros	• Ease of construction • Ease of maintenance	• Significantly improved mixing by discharging to deeper water in the river channel • Reduced visual impact • Greater resilience to flood flows • Improved flexibility for meeting higher dilution targets
Cons	• Mixing in Kawarau River limited to near-bank area • Reduced mixing efficiency may increase localised effects and increase likelihood of treatment enhancements. • Potential maintenance / remedial works required after major flood events. • Potential adverse effects on navigation and recreational activities.	• Increased operational and maintenance complexity • Single diffuser arrangement may introduce resilience risks. More complex design. • Potential constructability challenges, particularly in loose ground or riverbed conditions dominated by gravels and cobbles, which will require confirmation through site-specific geotechnical investigations.
Cost comparison	• Estimated CAPEX: $3.8M to $4.3M (NZD) • Opex: Low (exception following flood events).	• Estimated CAPEX: $8.4M to $12.8M (NZD) • Opex: Low to Moderate (related to infrequent maintenance activities)

Questions on the WEPS Impact Assessment?

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Land availability for disposal in the Wakatipu Basin

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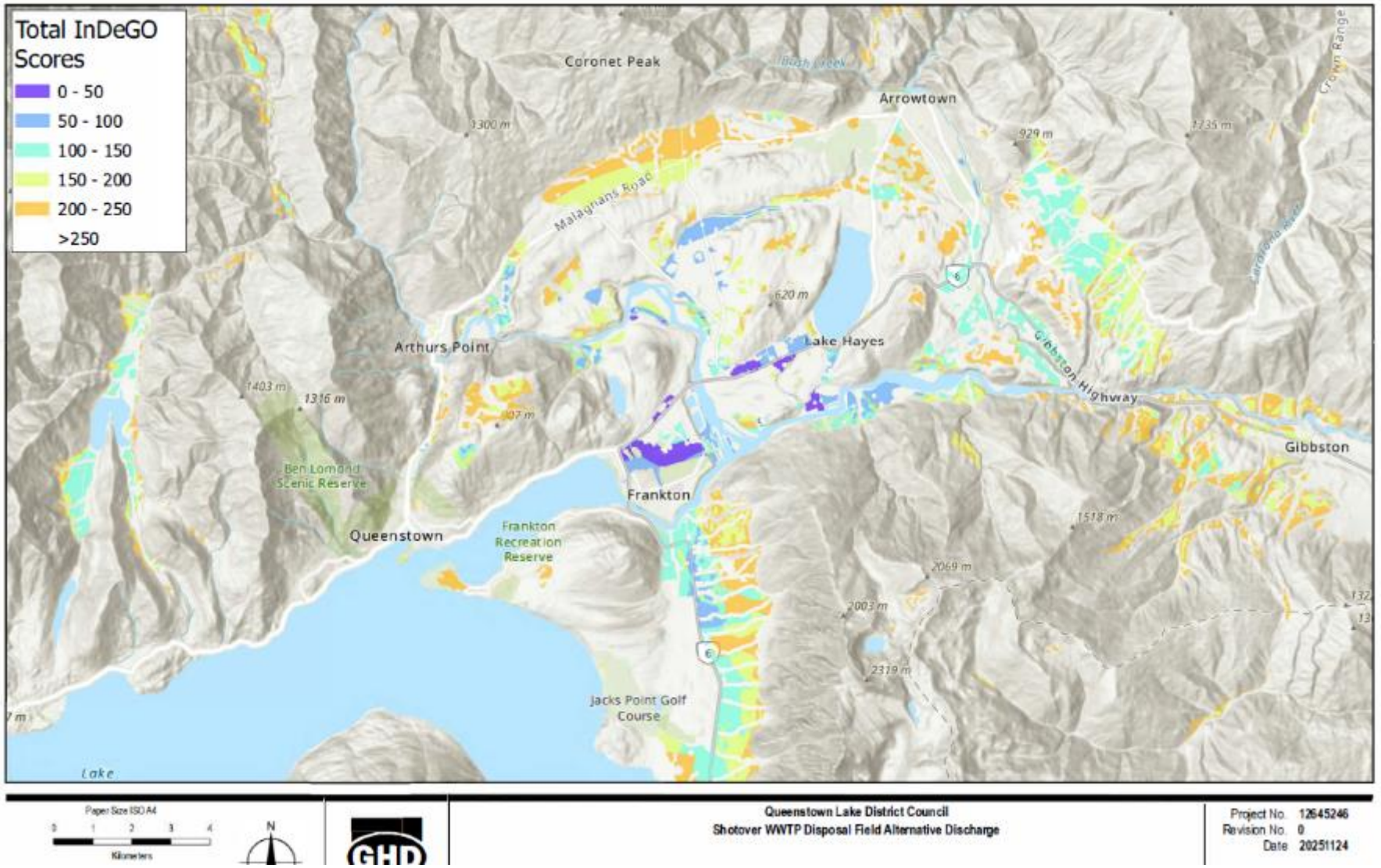
Land Based Disposal Options

- Spatial assessment confirmed limited potential land areas at the 2060 project volumes.
- Land assessed within 25km of the SWWTP.
- Areas with the lowest constraints (high suitability) indicated in **blue.**
- Areas with the highest constraints (low suitability) **orange** and yellow.



Land Based Disposal Options - Infiltration

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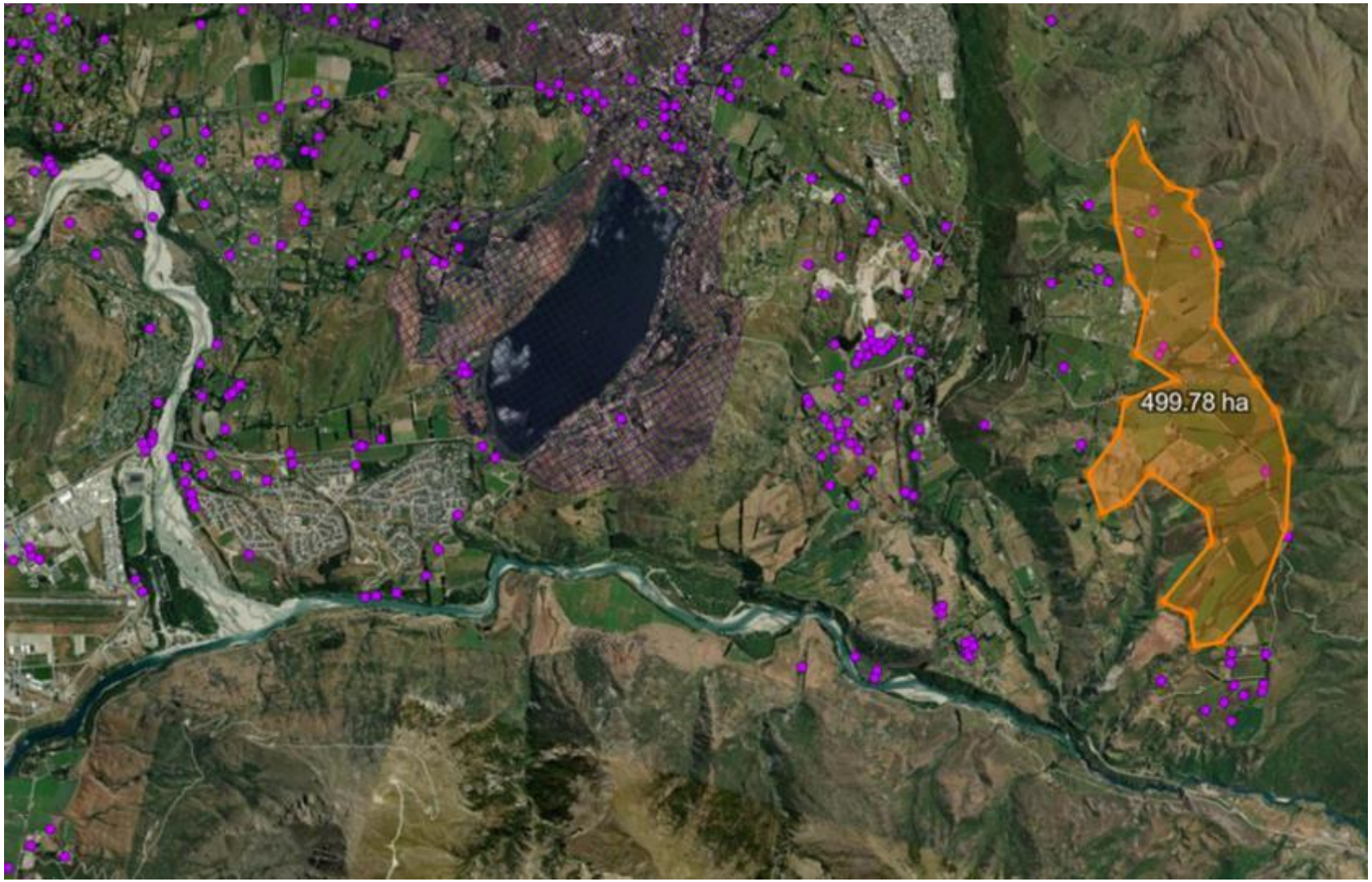
- **High-rate land application**
  - Requires very permeable ground conditions e.g. river gravels such as the Shotover Delta.
  - Requires 10-25ha.
  - DAD did not perform due to high seasonal groundwater. If remediated, could support 5,000 m3 /day during dry conditions but no capacity during wet conditions.
- **Moderate-rate land application**
  - Requires 70ha of land minimum.
  - Very few areas, Frankton Flats being the closest option.
  - Does not meet minimum area and competing use with airport activities.
- **Low-rate land application**
  - Large land area required (more than 250ha to meet 2060 wastewater peak flow).
  - Not practical as there are limited connected land parcels available of this size.

Land Only Disposal Option – Option E

Option E – Land only disposal solution

Crown Range Terraces

Of all areas assessed, the Crown Range Terraces provide adequate connected land area, at the lowest level of constraint for an exclusively land only disposal option (from a technical assessment).



Land Only Disposal Option – Requirements

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Parameters	Value or definition	Notes or assumptions
Disposal method	Low – moderate rate infiltration, costed as trenches	
WEPS limits	Assuming Class 2 land • TN criteria of 250 kg/ha/yr • TP criteria of 50 kg/ha/yr	
Disposal volume	2060 Peak Wet Weather Flow	60,000 m^3/day
Application rate	Maximum loading: 25 mm/d Average loading: 12.5 mm/d	Long term average daily hydraulic loading for all soils averages 12.5mm/d (1 day on, one day rest at 25 mm/d)
Land required	240 ha for irrigation, 288 ha total	Additional 20% of irrigatable land area added for buffers and infrastructure.
Conveyance distance	> 15km pipeline	
Elevation Increase	Approximately 360m	
Additional Treatment	Further optimise existing WWTP	Median TN of 5 mg/L, median TP of 1 mg/L

Land Only Disposal Option – Costs

Cost	Option E	Comment
Construction Cost – Disposal Field	$320 M – $374 M	Disposal trenches across 240ha
Construction Cost – Conveyance	$160 M – $180 M	DN700 pipe, 15km, 360m elevation gain, multiple pump stations
Consents, investigations, design	$16M - $20M	
Land cost	$50 M – $75M	Based on QLDC rating valuation data. Lease options may be possible in part, significant area of risk regarding assumptions.
Total Capital Cost	**$550M – $650 M**	P50 to P90 cost range
Estimated Operating Cost	$4.5M - $5.9M	Includes labour, electricity, and renewals. Cost range for 2030 to 2060 flows
Net Present Value - 30yr timeline - (Circa)	$656M - $757M	

Wastewater Management Strategy in the Wakatipu Basin

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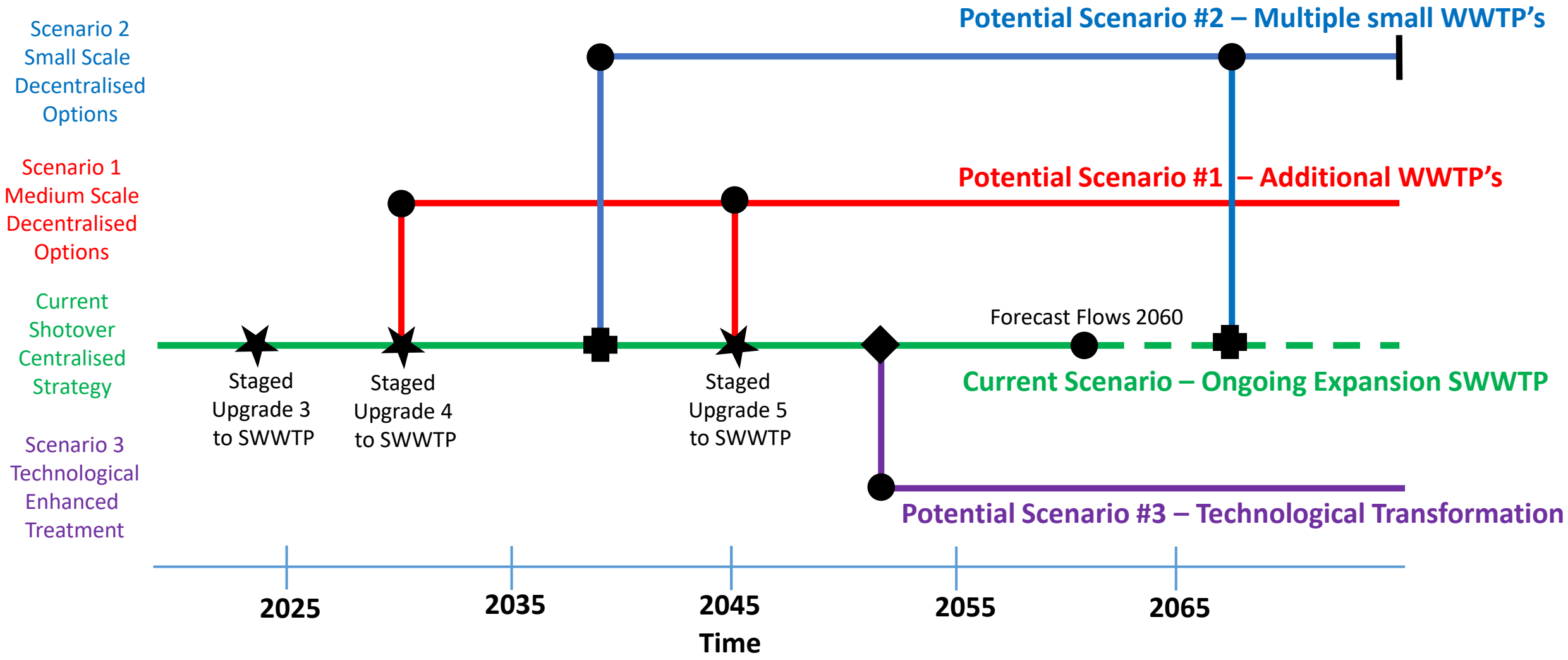
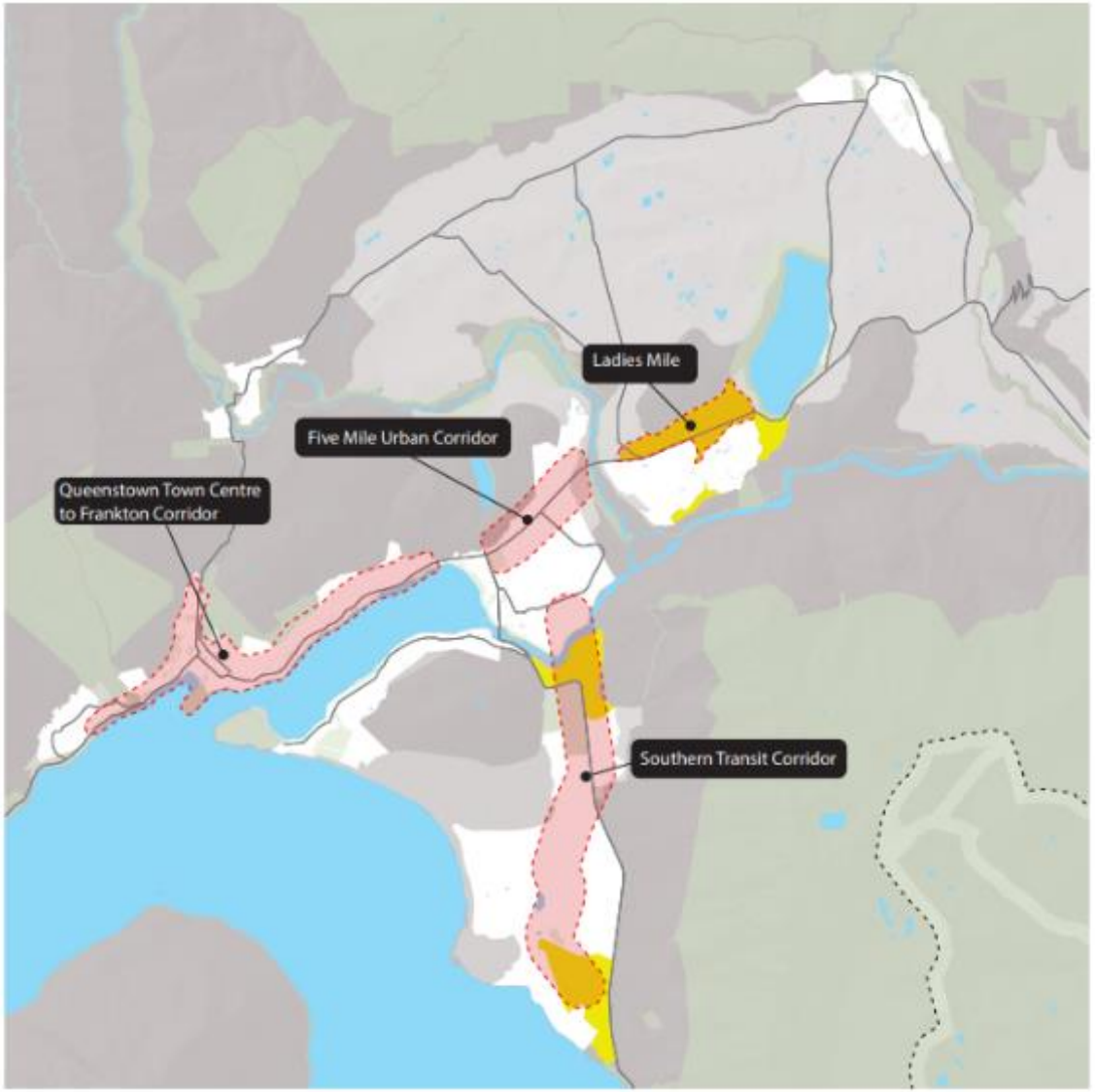
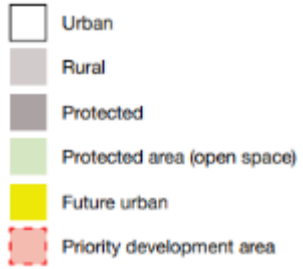
Wakatipu District Strategy - Adaptive Pathways



Wakatipu – Spatial Plan and Infrastructure



- Growth in residents and visitors is our biggest challenge
- Infrastructure teams work closely with the spatial planning team to ensure that network planning is integrated with future land use
- The most significant growth areas are Te Tapuae-Southern Corridor, Te Putahi-Ladies Mile, and Te Kirikiri-Frankton
- We are addressing short-term constraints for wastewater across our conveyance networks
- Treatment and disposal is centralised at the Shotover plant with further staged upgrades planned from 2030 and 2045
- Our LTP and Infrastructure Strategy follow the preferred approach of continuing to invest in conveyance to and centralised treatment at the Shotover plant



However, we are open to considering decentralised options

Te Tapuae – Standalone Treatment Option

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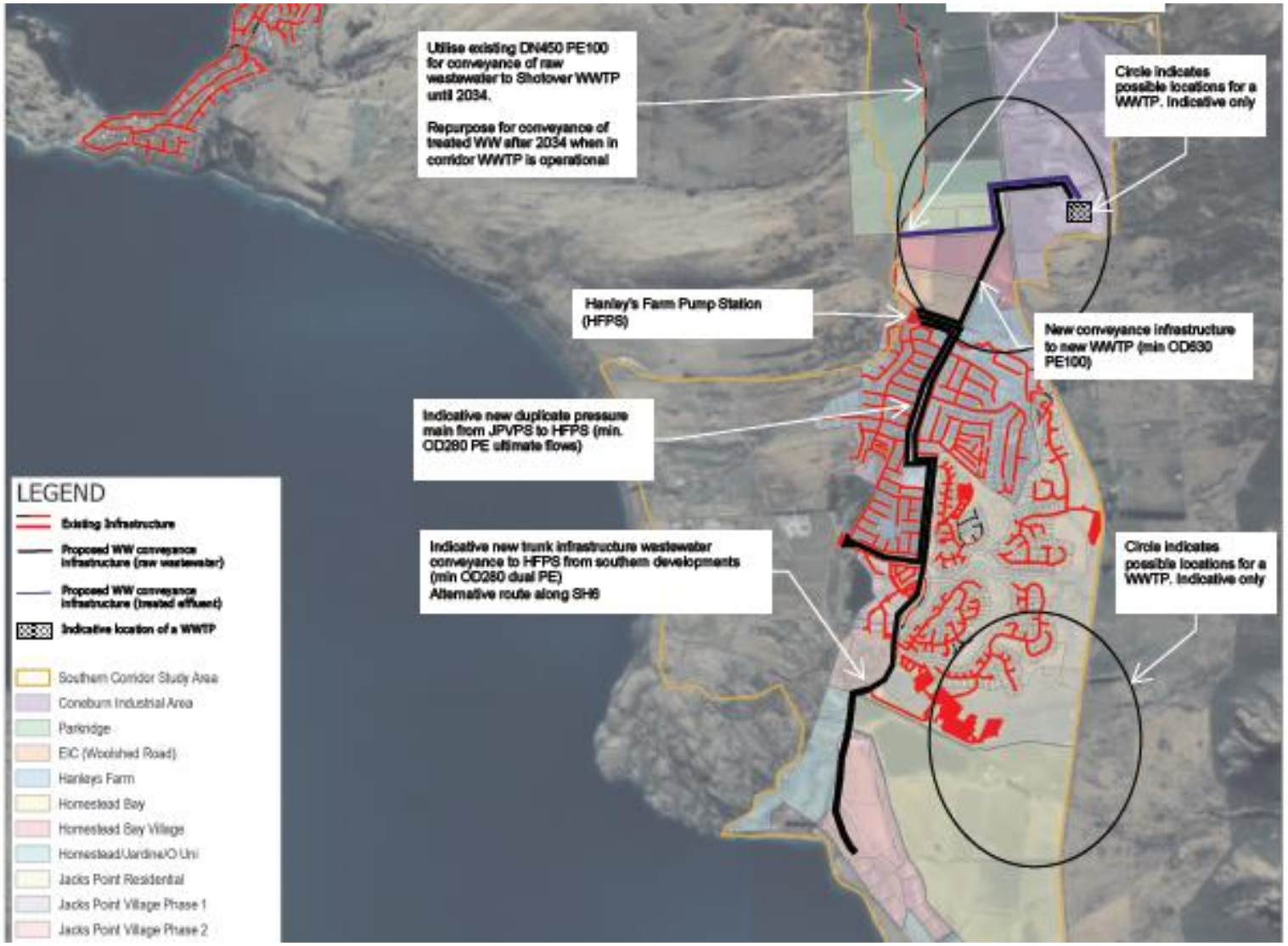
Options considered for additional treatment plant built in stages to accommodate growth.

Benefits	Disbenefits
Resilience – river crossing and Shotover WWTP operation.	High capital cost – additional $50 million.
Frees up capacity at Shotover WWTP.	High operational cost – duplicating lab, compliance requirements, operators.
	Lack of sufficient land for disposal.

Preferred pathway is to pipe to Shotover due to significant economies of scale for centralised wastewater.



Questions on land availability & WW management strategy in the Wakatipu Basin

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Iwi Engagement

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Iwi Engagement – Position Statement

POSITION STATEMENT OF KĀI TAHU ON SHORTLISTED OPTIONS

- *"The wastewater leaving a treatment plant is considered tapu (prohibited, restricted, forbidden, to be approached with caution). Treatment through natural processes in the land to reach a state of being noa (free from extensions of tapu, ordinary, unrestricted) is the preferred option."*

- *"In respect to land-based disposal options, Kā Rūnaka support options that will use natural processes to treat the wastewater and absorb and remove contaminants. A superficial or token contact with the whenua that does not have any additional treatment effect beyond that offered by the treatment plant itself is not sufficient."*

Iwi Engagement – Position Statement

POSITION STATEMENT OF KĀI TAHU ON SHORTLISTED OPTIONS

- *"Kā Rūnaka understand that the subsurface wetlands would not provide substantive additional treatment of wastewater before it is discharged to the river. In addition the characteristics of the underlying soils present the same risk of clogging that contributed to the failure of the previous disposal beds."*
- *"Discharge of wastewater to the river would not uphold the intergenerational obligation to uphold the mauri of the awa and would have a significant negative impact on mahika kai values associated with the awa."*
- *"The position of Kā Rūnaka is that a more holistic investigation of wastewater needs and alternatives for Queenstown is required that is not constrained by continuing to rely on treatment at this location."*

Further Iwi Engagement

Current Engagement:

- Fortnightly meetings with TAMI & Aukaha operational teams.
- Engagement undertaken as part of the long list options assessment.

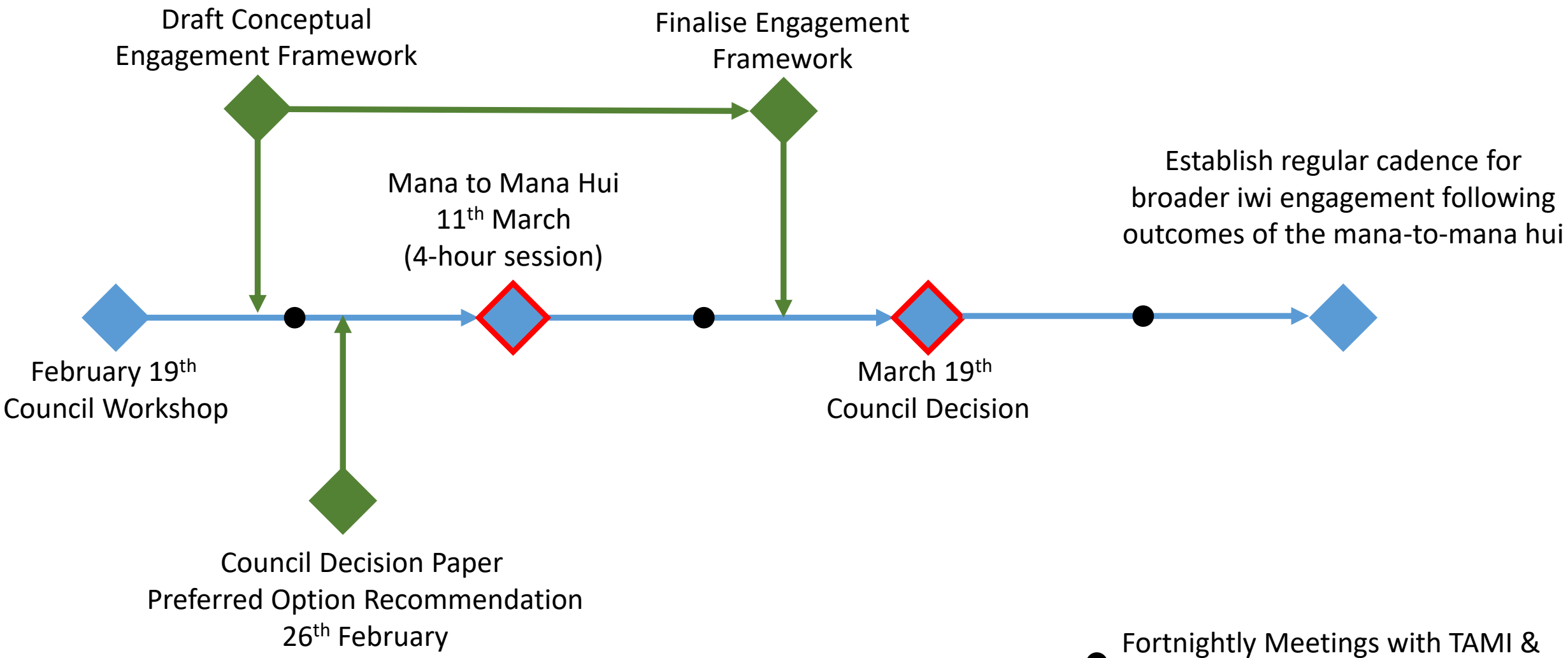
Mana to Mana Hui:

- QLDC Elected members and Iwi/ rūnaka leadership - focus on building trust and understanding.
- Meeting allows iwi/ rūnaka leaders to share their concerns with elected members - decision makers clear on Iwi position

Conceptual Engagement Framework

- Focus on building long-term relationship with iwi/rūnaka through methods and mechanisms providing for meaningful input into wastewater processes
- Integrating short-term consent engagement with long-term solution engagement
- Both short-term and long-term consents considered as part of wider district strategy

Further Iwi Engagement



Consenting Pathways & Communications Strategy

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Consenting Approvals Required

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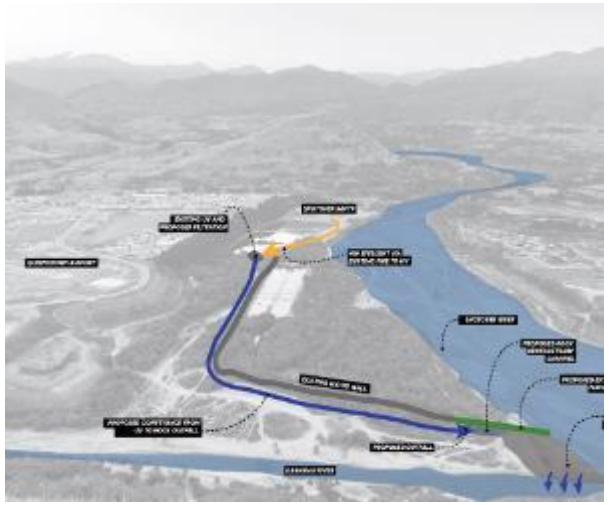
Earthworks to construct the disposal system.	Discharge of treated effluent to land / water.	Construction of bores/soak holes (C or D).	Outfall or diffuser consent for works in the riverbed



Approval Pathways – Resource Management Act

RMA Consenting Pathways

Option 1: Determination by the Consent Authority (ORC & QLDC)

Standard consenting pathway – unlikely to achieve EO deadline

Option 2: Direct referral to the Environment Court

Most likely to achieve decision to complete by EO deadline Dec 2030

Option 3: Determination through the fast-track consenting process

Unlikely to met requirements of the fast-track consent regime.

Approval Pathways – Planning Bill

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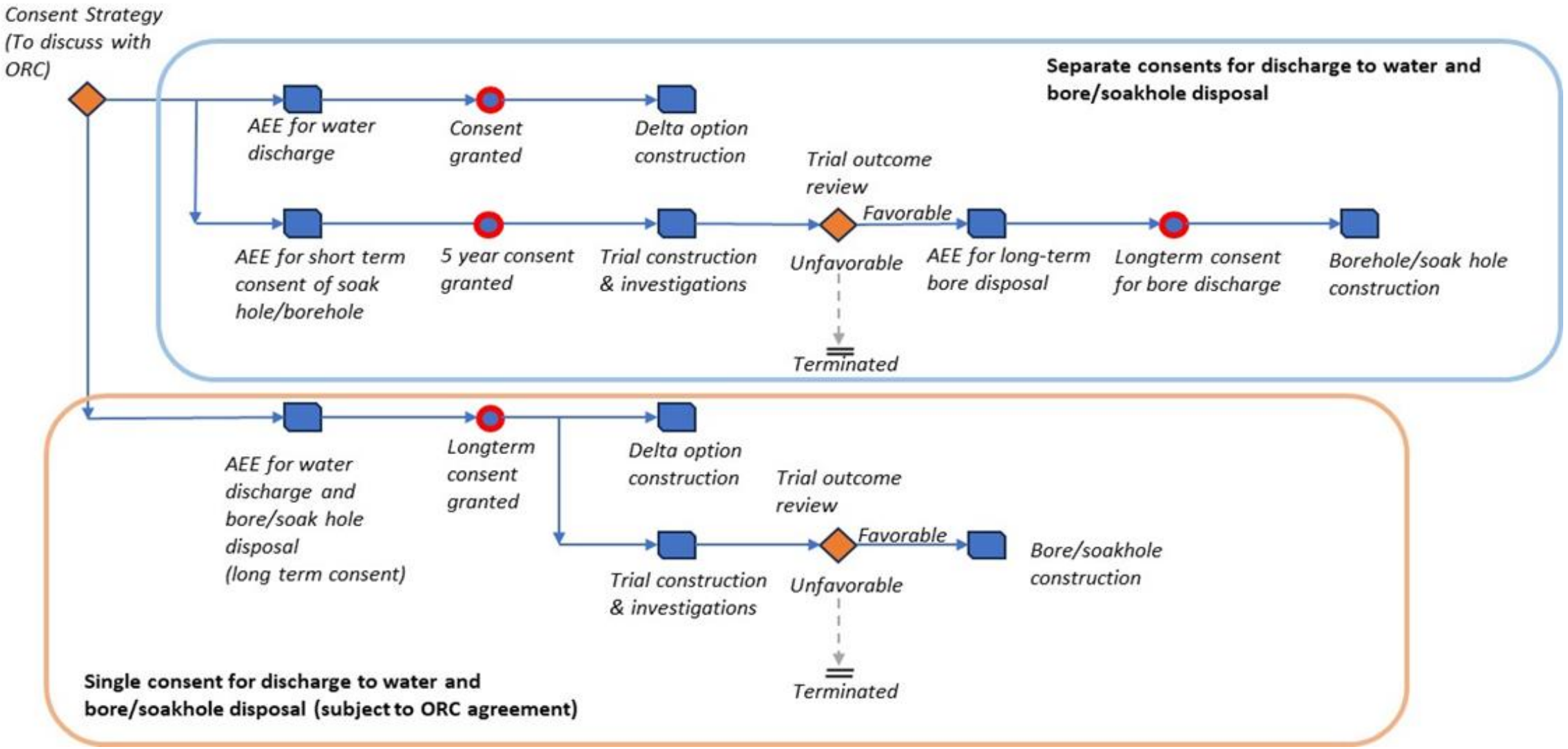
New Resource Management Bills

Planning Bill 2025

- New system that is yet untested
- Not due to become law until 2027
- New Regional Plans awaited.
- Direct referral removed.
- Acts could change following select committee process.

Natural Environment Bill 2025

Option C & D Consenting Pathway



Option E - Consenting Pathway

- Application for discharge made under the WEPS (most likely), with specific limits for N, P and E coli.
- Other contaminants or effects of concern would still be considered by ORC and included in application.
- Site assessment under the WEPS would be required.
- Existing ORC rules would still apply for other activities associated with the discharge consent.
- Consenting pathways all still available as for other options.
- **Timeframes for land acquisition, negotiations, easements, approvals etc. all expected to extend well beyond EO deadline.**

Approval Pathways – Recommendation

Option A – Discharge to the Kawarau → **Resource Management Act** → **Direct Referral to the Environment Court**

- **Most likely to achieve a decision enabling construction and implementation by 31 December 2030.**
- **Full community and stakeholder participation provided and Court hearing.**
- **Comprehensive engagement strategy to assist in reducing concerns from public and affected parties.**
- **Uncertainty as to how the two pieces of legislation will operate concurrently and affect processing if submitted after mid-2026.**

Engagement Strategy

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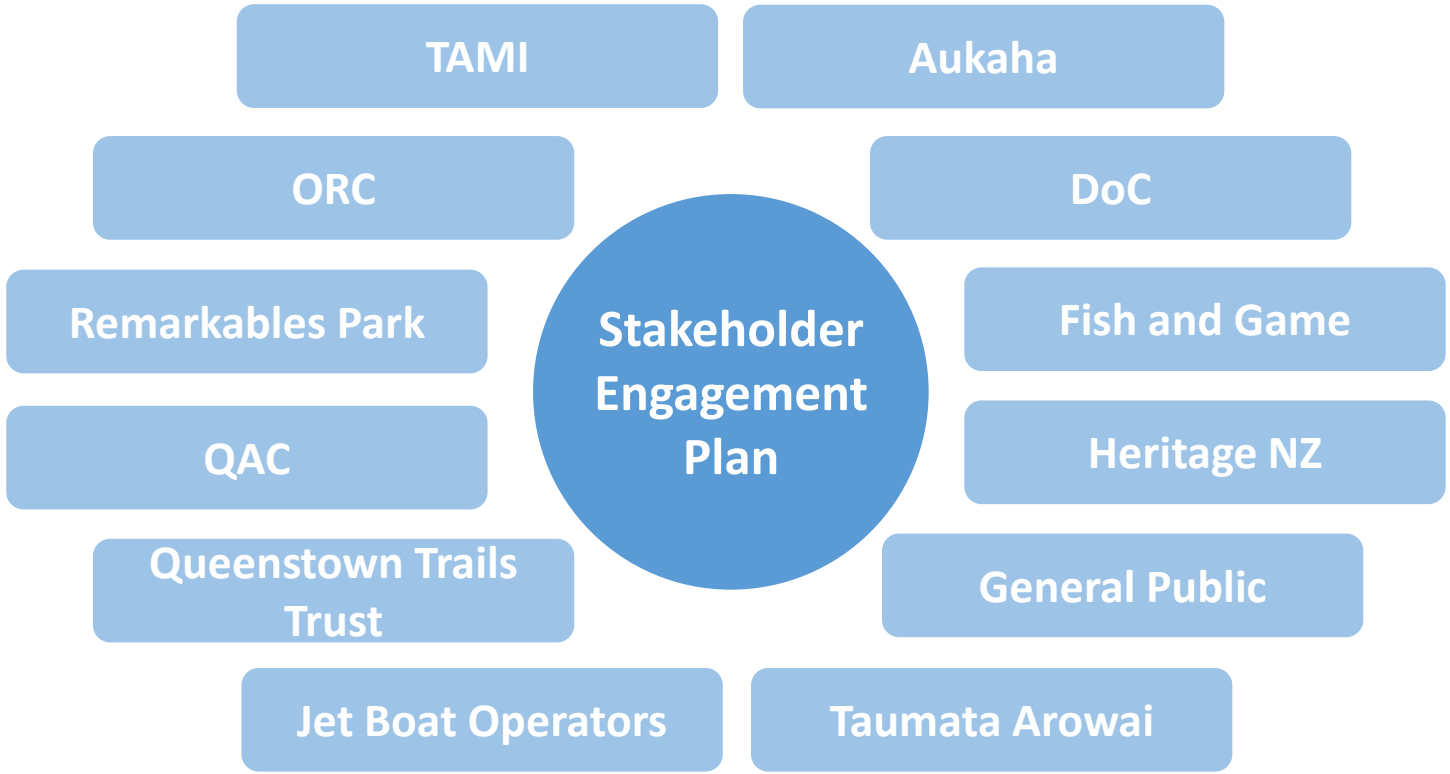
ENGAGEMENT UNDERTAKEN TO DATE

- 3 no. community drop-in sessions held to date – invitation extended to elected members.
- Iwi engagement with operational teams from TAMI and Aukaha. Mana to Mana Hui scheduled.
- Major projects website, social media updates, information posted in Mountain Scene and story map provided on project.

KEY STAKEHOLDERS & IWI PARTNERS



Communications Strategy – Next Steps

Date	Channel	Content
19th March	Full Council Meeting	Decision on shortlist option to proceed with/outcome of future disposal solution project.
TBC	Media advisory	Detailing Council decision on the matter, and next steps as a result of decision.
TBC	Social media	Share media advisory detailing decision on the matter and next steps.
TBC	Website	Update to include decision made and next steps. Clear expectations shared around how the community will be updated on the project.
TBC	Let's Talk Kōrero Mai	Ratepayer magazine story detailing decision on the matter and next steps.
TBC	Stakeholder emails	Updates on the project and outcome of decision shared with key stakeholders.

Feedback sought from Council as to further communications steps, potentially adapted, depending on the Council decision 17 March 2026.

Questions on Iwi Engagement, Consenting & Communication Strategy?

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Pathway to Delivery

Council Workshop	**4 December 2025**
Community Engagement	**December 2025 – January 22026**
Council Workshop	**19 February 2026**
Council Meeting to Confirm Option to Consent	**19 March 2026**
Complete Preliminary Design for Consent	**May 2026**
Business Case Approval of Preferred Option	**May 2026**
Lodge Consent for Preferred Option	**30 May 2026 (Target)**
Engineering Design Completed	**Dec 2027 (Subject to Consent)**
Construction Completion of Preferred Option	**December 2030**

◆ **Complete/Delivered**

◆ **In Progress/Awaited**

Questions?

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