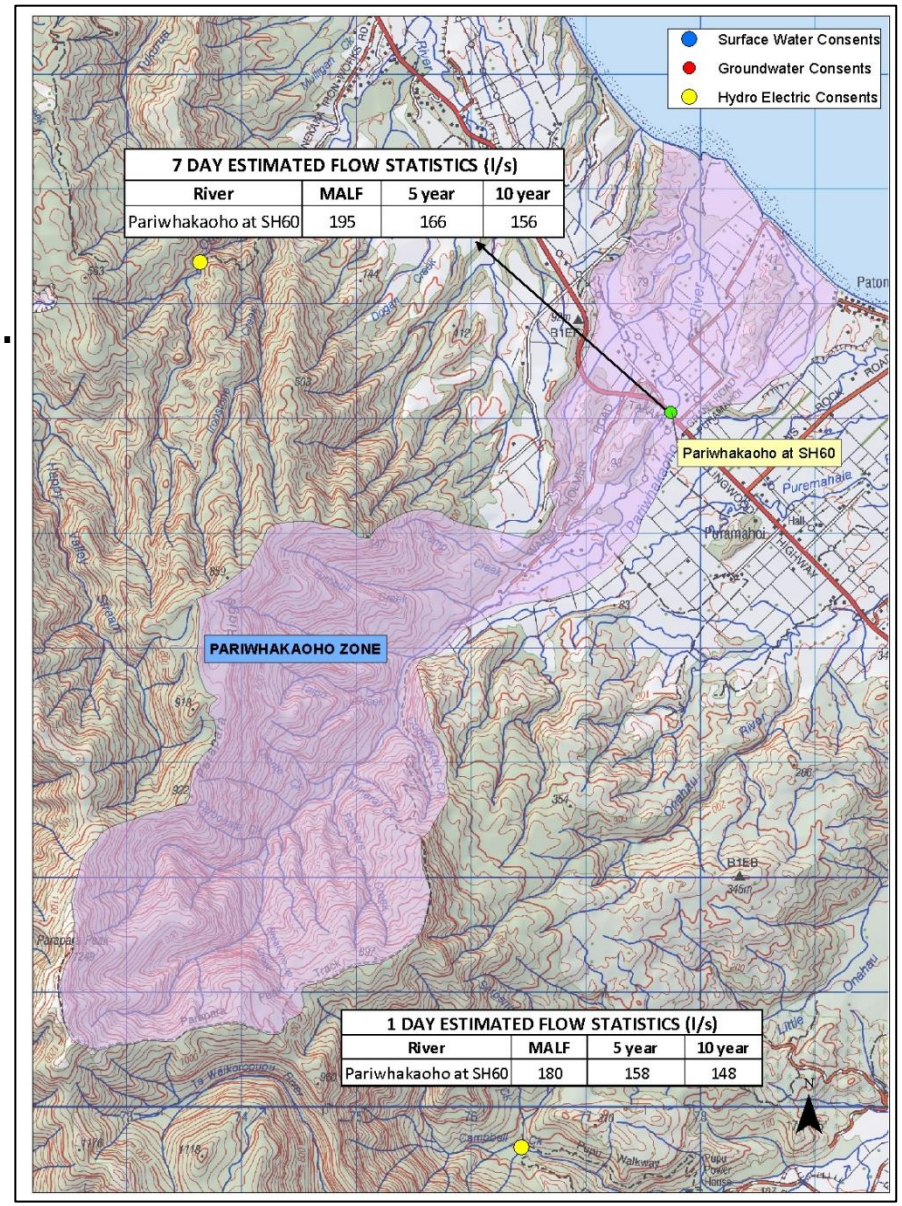
Environmental Flows: Pariwhakaoho Example

- No current water take consents
- Highly significant ecological values including native fisheries
- Environmental Flow and Type:
  - Cawthron Report (2006) suggests min. flow to be set at 90% of MALF
  - Cawthron's suggested minimum flow is a cease take

Estimated MALF (7day) for this catchment is 195 l/s.

Hence minimum flow (90%) = 175 l/s

In smaller catchments, river levels can drop quickly during dry periods, reaching MALF in a short time.



Allocation: Pariwhakaoho - Example 1: Cease Take

- Unable to use standard security of supply policy because the minimum flow “cease take” trigger is higher than the 7day-10year-Low Flow.
- Allocating 20% of MALF would result in a much higher allocation limit, but a higher trigger for cease take to maintain the protection level

Allocation method	7day Flow Stats (l/s)	Allocation (l/s)	Cease take trigger	Minimum flow
Method 1: 10% of MALF	MALF = 195	19.5	194	175 l/s (approx. 3yr event)
Method 2: 10% of 5yr Low Flow (policy default allocation)	5yr LF= 166	16.6	192	
Method 3: 20% of MALF	MALF= 195	39.0	214	
Method 4: 35% cut in 10yr Low Flow (allocation based on standard security of supply)	10yr LF= 156	N/A	N/A	

Allocation: Pariwhakaoho- Example 2: Rationing and Cease Take

- If rationing is used, the cease take trigger from Example 1 becomes the Step 1 rationing trigger
- Unable to use standard security of supply policy as minimum flow "cease take" trigger is higher than the 7day-10year-Low Flow.
- Only one step in rationing practical - with a 50% cut in takes
- The second step would be cease take within 2 to 4 days from Step 1
- Allocating 20% of MALF would result in a much higher allocation limit, but a higher trigger for rationing to maintain the protection level

Allocation method	7day Flow Stats (l/s)	Allocation (l/s)	Rationing step 1 (50%)	Cease take trigger	Minimum flow
Method 1: 10% of MALF	MALF = 195	19.5	194	184	175 l/s (approx. 3yr event)
Method 2: 10% of 5yr Low Flow (policy default allocation)	5yr LF= 166	16.6	192	183	
Method 3: 20% of MALF	MALF= 195	39.0	214	195	
Method 4: 35% cut in 10yr Low Flow (allocation based on standard security of supply)	10yr LF= 156	N/A	N/A	N/A	