Upper Takak	a Zone				
Water Demand					
Existing Takes		Waiting List		Future Irrig	gation
Surface	333	Surface	120		
Ground	0	Ground	0		

(There is a further 105 I/s on the waiting list in the Middle Takaka zone)

Mar Bernand 518

Flow Statistics and Default All	s and Default Allocat <mark> ons</mark>							
Statistic		Methodology	% of 5yrLF	I/s	Location			
7 day M ALF				2380	Harwoods			
1 day MALF				1669	Harwoods			
1 in 5 Year Low Flow (7 day)				1646	Harwoods			
1 in 10 Year Low Flow (7 day)				1397	Harwoods			
Allocation default Lower Limit (AL)	10	6 of 5yr Low Flow	10%	165	Harwoods			
Allocation default Upper Limit (AL)	33	6 of 5yr Low Flow	33%	543	Harwoods			

		1
Opportunity for C type takes to storage (over	r last hydrological y	year)
Median flow (I/s)		10100
% of time flow above median flow		52%
Volume of water above median flow for year	(million m3)	298

Significance of Ecological Values Moderate

as assessed by Dr. Roger Young (Freshwater Ecclogist, Cawthron - Coastal and Freshwater Group Manager)

		option			
Available Water		4			
Regime Option (MF%-AL%)	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Minimum Flow Percentage of MALF	80%	70%	70%	70%	none (cesse tale = 70%)
Minimum Flow I/s (MF)	1904	1666	1666	1666	none
Allocation Percentage of MALF	30%	20%	15%	10%	14%
Total allocation I/s (AL)	714	476	357	238	333
% of demand met by allocation limit					
% of Existing met	100.0%	100.0%	100.0%	71.5%	100.0%
% of Waiting List met	100.0%	100.0%	20.0%	0.0%	0.0%
% of Future Irrigation met	100.0%	35.4%	0.0%	0.0%	0.0%

Low Flow Management					
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Risk to instream values (Roger Young's advice)	low-mod	mod erate	mod erate	moderate	moderate
Rationing Trigger	none	none	none	none	none
Cease Take Trigger I/s (MF+ AL)	2618	2142	2023	1904	1657°
Average days below Minimum Flow per yr	12	8	8	8	ne

Security of Supply (based on data from 1975-2015 - Nov-April inclusive)						
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo*	
% of time flows are above cease trigger	87.6%	91.9%	92.9%	93.9%	96.1%	

nd = no data available na = not applicable

Summary of the existing takes, amount on the waiting list and amount of future irrigation taken from the plausible irrigation map. All figures in litres per second.

^{*} information for 3 large consented takes only

Water Demand							
Existing Takes Waiting List Future Irrigation					ation		
Surface	333	Surface	120				
Ground	0	Ground	0				
Total	333	Total	120	Total	65		

(There is a further 105 I/s on the waiting list in the Middle Takaka zone)

Existing & Waiting

•		
	Max Demand	518

Flow Statistics and Default Allocations							
Statistic	Methodology	% of 5yrLF	I/s	Location			
7 day MALF			2380	Harwoods			
1 day MALF			1669	Harwoods			
1 in 5 Year Low Flow (7 day)			1646	Harwoods			
1 in 10 Year Low Flow (7 day)			1397	Harwoods	L		
Allocation default Lower Limit (AL)	10% of 5yr Low Flow	10%	165	Harwoods	ĺ		
Allocation default Upper Limit (AL)	33% of 5yr Low Flow	33%	543	Harwoods	ı		

Opportunity for C type takes to storage (ov	r last hydrological y	year)
Median flow (I/s)		10100
% of time flow above median flow		52%
Volume of water above median flow for year	(million m3)	298
Significance of Ecological Values*		Moderate

as assessed by Dr. Roger Young (Freshwater Ecclogist, Cawthron - Coastal and Freshwater Group Manager)

		option			
Available Water		4			
Regime Option (MF%-AL%)	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Minimum Flow Percentage of MALF	80%	70%	70%	70%	none (cesse tale = 70%)
Minimum Flow I/s (MF)	1904	1666	1666	1666	none
Allocation Percentage of MALF	30%	20%	15%	10%	14%
Total allocation I/s (AL)	714	476	357	238	333
% of demand met by allocation limit					
% of Existing met	100.0%	100.0%	100.0%	71.5%	100.0%
% of Waiting List met	100.0%	100.0%	20.0%	0.0%	0.0%
% of Future Irrigation met	100.0%	35.4%	0.0%	0.0%	0.0%

Low Flow Management					
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Risk to instream values (Roger Young's advice)	low-mod	mod erate	mod erate	moderate	moderate
Rationing Trigger	none	none	none	none	none
Cease Take Trigger I/s (MF+AL)	2618	2142	2023	1904	1657°
Average days below Minimum Flow per yr	12	8	8	8	ne

Security of Supply (based on data from 1975-2015 - Nov-April inclusive)						
Regime option 80%-30% 70%-20% 70%-15% 70%-10% status quo'						
% of time flows are above cease trigger	87.6%	91.9%	92.9%	93.9%	96.1%	

nd = no data available na = not applicable

The various flow statistics for the respective flow measuring sites (locations listed on the right column). The 5 yr low flow stats show the current plan default for comparison.

^{*} information for 3 large consented takes only

Water Demand						
Existing Takes Waiting List Future Irrigation					gation	
Surface	333	Surface	120			
Ground	0	Ground	0			
Total	333	Total	120	Total	65	

(There is a further 105 l/s on the waiting list in the Middle Takaka zone)

Existing & Waiting

Max Demand 518

Flow Statistics and Default Allocations					
Statistic	Methodology	% of 5yrLF	I/s	Location	
7 day MALF			2380	Harwoods	
1 day M ALF			1669	Harwoods	
1 in 5 Year Low Flow (7 day)			1646	Harwoods	
1 in 10 Year Low Flow (7 day)			1397	Harwoods	
Allocation default Lower Limit (AL)	10% of 5yr Low Flow	10%	165	Harwoods	
Allocation default Upper Limit (AL)	33% of 5yr Low Flow	33%	543	Harwoods	

Opportunity for C type takes to storage (over last hydrological year)				
Median flow (I/s)	10100			
% of time flow above median flow	52%			
Volume of water above median flow for year (million m3)	292			

Significance o	Ecological values	M
JISTIIII CATICE U	ECOIOGICAI VAINES	141

as assessed by Dr. Roger Young (Freshwa er Ecologist, Cawthron - Coastal and Freshwater Group Manager)

Available Water		4			
Regime Option (MF%-AL%)	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Minimum Flow Percentage of MALF	80%	70%	70%	70%	none (cesse tale = 70%)
Minimum Flow I/s (MF)	1904	1666	1666	1666	none
Allocation Percentage of MALF	30%	20%	15%	10%	14%
Total allocation I/s (AL)	714	476	357	238	333
% of demand met by allocation limit					
% of Existing met	100.0%	100.0%	100.0%	71.5%	100.0%
% of Waiting List met	100.0%	100.0%	20.0%	0.0%	0.0%

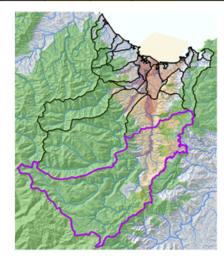
Low Flow Management						
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo	
Risk to instream values (RogerYoung's advice)	low-mod	mod erate	mod erate	moderate	moderate	
Rationing Trigger	none	none	none	none	none	
Cease Take Trigger I/s (MF+AL)	2618	2142	2023	1904	1657°	
Average days below Minimum Flow per yr	12	8	8	8	ne	

Security of Supply (based on data from 1975-2015 - Nov-April inclusive)						
Regime option 80%-30% 70%-20% 70%-15% 70%-10% status quo						
% of time flows are above cease trigger	87.6%	91.9%	92.9%	93.9%	96.1%	

nd = no data available na = not applicable

% of Future Irrigation met

This part shows the flows above median flows which provides an indication of how applicable takes to storage (C-class permits) would be in the zone



^{*} information for 3 large consented takes only

Water Demand						
Existing Takes Waiting List Future				Future Irrig	gation	
Surface	333	Surface	120			
Ground	0	Ground	0			
Total	333	Total	120	Total	65	

(There is a further 1051/s on the waiting list in the Middle Takaka zone)

Existing & Waiting

Max Demand 518

Flow Statistics and Default Allocations						
Statistic	Methodology	% of 5yrLF	I/s	Location		
7 day MALF			2380	Harwoods		
1 day MALF			1669	Harwoods		
1 in 5 Year Low Flow (7 day)			1646	Harwoods		
1 in 10 Year Low Flow (7 day)			1397	Harwoods		
Allocation default Lower Limit (AL)	10% of 5yr Low Flow	10%	165	Harwoods		
Allocation default Upper Limit (AL)	33% of 5yr Low Flow	33%	543	Harwoods		

Opportunity for C type takes to storage (over last hydrological year)				
Median flow (I/s)	10100			
% of time flow above median flow	52%			
Volume of water above median flow for year (million m3)	298			

Significance	of Ecological Va	ues#

as assessed by Dr. Roger Young (Freshwater Ecologist, Cawthron - Coastal and Freshwater Group Manager)



This is the assessment of ecological values by Roger Young

Sugges ted option

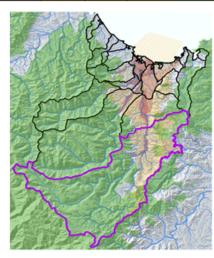
Available Water		₹			
Regime Option (MF%-AL%)	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Minimum Flow Percentage of MALF	80%	70%	70%	70%	none (cesse tale = 70%)
Minimum Flow I/s (MF)	1904	1666	1666	1666	none
Allocation Percentage of MALF	30%	20%	15%	10%	1496
Total allocation I/s (AL)	714	476	357	238	333
% of demand met by allocation limit					
% of Existing met	100.0%	100.0%	100.0%	71.5%	100.0%
% of Waiting List met	100.0%	100.0%	20.0%	0.0%	0.0%
% of Future Irrigation met	100.0%	35.4%	0.0%	0.0%	0.0%

Low Flow Management							
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo		
Risk to instream values (Roger Young's advice)	low-mod	moderate	moderate	moderate	moderate		
Rationing Trigger	none	none	none	none	none		
Cease Take Trigger I/s (MF+ AL)	2618	2142	2023	1904	1657*		
Average days below Minimum Flow per yr	12	8	8	8	ne		

Security of Supply (based on data from 1975-2015 - Nov-April inclusive)						
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo*	
% of time flows are above cease trigger	87.6%	91.9%	92.9%	93.9%	96.1%	

nd = no data available na = not applicable

^{*} information for 3 large consented takes only



Water Demand							
Existing Takes Waiting List		Future Irrigation					
Surface	333	Surface	120				
Ground	0	Ground	0				
Total	333	Total	120	Total	65		

(There is a further 105 l/s on the waiting list in the Middle Takaka zone)

Existing & Waiting 453

Flow Statistics and Default Allocations						
Statistic	Methodology	% of 5yrLF	I/s	Location		
7 day MALF			2380	Harwoods		
1 day M ALF			1669	Harwoods		
1 in 5 Year Low Flow (7 day)			1646	Harwoods		
1 in 10 Year Low Flow (7 day)			1397	Harwoods		
Allocation default Lower Limit (AL)	10% of 5yr Low Flow	10%	165	Harwoods		

Opportunity for C type takes to storage (over last hydrological year)				
Median flow (I/s)	10100			
% of time flow above median flow	52%			
Volume of water above median flow for year (million m3)	298			

Significance of Ecological Values[#]

as assessed by Dr. Roger Young (Freshwater Ecologist, Cawthron - Coastal and Freshwater Group Manager)

		option				
	Available Water		4			
	Resime Option (MF%-AL%)	80%-30%	70%-20%	70%-15%	70%-10%	status quo
	Minimum Flow Percentage of MALF	80%	70%	70%	70%	none (cease tale = 70%)
	Minimum Flow I/s (MF)	1904	1666	1666	1666	none
	Allocation Percentage of MALF	30%	20%	15%	10%	14%
	Total allocation I/s (AL)	714	476	357	238	333
•	% of demand met by allocation limit					
	of Existing met	100.0%	100.0%	100.0%	71.5%	100.0%
	% of Whiting List met	100.0%	100.0%	20.0%	0.0%	0.0%
	% of Future Ing. tion met	100.0%	35.4%	0.0%	0.0%	0.2%

Low Flow Managemen						
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo	
Risk to instream values (5 ger Young's advice)	low-mod	mod erate	mod erate	moderate	moderate	
Rationing Trigger	none	none	none	none	none	
Cease Take Trigger Vs (MF+AL)	2618	2142	2023	1904	1657°	
Average days below Minimum Flow per yr	12	8	8	8	na	

Security of Supply (based on data from 1975-2015 - Nov-April inclusive)						
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo*	
% of time flows are above cease trigger	87.6%	91.9%	92.9%	93.9%	96.1%	

nd = lo data available

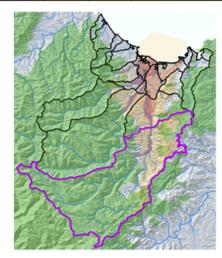
ng = not applicabl

information for 3 large consented takes only

This shows the different management regimes in each column based on various combinations of % of MALF for minimum flows and % of MALF for allocation. The current situation is the status quo column.

The % of the existing takes, waiting list and future demand met by each regime are shown in the bottom rows and colour-coded for comparison.

The regime previously agreed by FLAG or suggested by staff is highlighted with the arrow at the top of the column.



Water Demand						
Existing Takes Waiting List Future Irrigatio			ation			
Surface	333	Surface	120			
Ground	0	Ground	0			
Total	333	Total	120	Total	65	

(There is a further 105 l/s on the waiting list in the Middle Takaka zone)

Existing & Waiting

Max Demand 518

Flow Statistics and Default Allocations							
Statistic	Methodology	% of 5yrLF	I/s	Location			
7 day MALF			2380	Harwoods			
1 day M ALF			1669	Harwoods			
1 in 5 Year Low Flow (7 day)			1646	Harwoods			
1 in 10 Year Low Flow (7 day)			1397	Harwoods			
Allocation default Lower Limit (AL)	10% of 5yr Low Flow	10%	165	Harwoods			
Allocation default Upper Limit (AL)	33% of 5yr Low Flow	33%	543	Harwoods			

Opportunity for C type takes to storage (over last hydrological year)				
Median flow (I/s)	10100			
% of time flow above median flow	52%			
Volume of water above median flow for year (million m3)	298			

Significance of Ecological Values [#]
--

as assessed by Dr. Roger Young (Freshwater Ecologist, Cawthron - Coastal and Freshwater Group Manager)

Available Water		4			
Regime Option (MF%-AL%)	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Minimum Flow Percentage of MALF	80%	70%	70%	70%	none (case tale = 70%)
Minimum Flow I/s (MF)	1904	1666	1666	1666	none
Allocation Percentage of MALF	30%	20%	15%	10%	1496
Total allocation I/s (AL)	714	476	357	238	333
% of demand met by allocation limit					
% of Existing met	100.0%	100.0%	100.0%	71.5%	100.0%
% of Waiting List met	100.0%	100.0%	20.0%	0.0%	0.0%
% of Future Irrigation met	100.0%	35.4%	0.0%	0.0%	0.0%

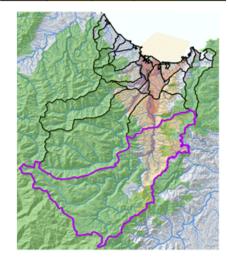
Low Flow Management					
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Risk to instream values (Roger Young's advice)	low-mod	mod erate	mod erate	moderate	moderate
Rationing Trigger	none	none	none	none	none
Cease Take Trigger I/s (MF + AL)	2618	2142	2023	1904	1657°
Average dryshelow Minimum Flow per yr	12	8	8	8	10

Security of Supply (based on data from 1975-2015 - Nov-April inclusive)						
Regime option		80%-30%	70%-20%	70%-15%	70%-10%	status quo*
% of time flows Te abov	e cease trigger	87.6%	91.9%	92.9%	93.9%	96.1%

nd = no data available

* info mation for 3 large consented takes only

This compares the different regimes in terms of low flow management – the risk to the instream values is colour-coded for comparison and is based on the classes given on the colour-code key (refer pdf attached to email) – these have been developed with advice from Roger Young.



Water Demand						
Existing Takes Waiting List Future Irrigation					ation	
Surface	333	Surface	120			
Ground	0	Ground	0			
Total	333	Total	120	Total	65	

(There is a further 103 l/s on the waiting list in the Middle Takaka zone)

Existing & Waiting

Max Demand

Harwoods

Harwoods

Flow Statistics and Default Allocations						
Statistic	Methodology	% of 5yrLF	I/s	Location		
7 day MALF			2380	Harwoods		
1 day MALF			1669	Harwoods		
1 in 5 Year Low Flow (7 day)			1646	Harwoods		
1 in 10 Year Low Flow (7 day)			1397	Harwoods		

10% of 5vr Low Flow

33% of 5vr Low Flow

Opportunity for C type takes to storage (over last hydrological year)					
Median flow (I/s)	10100				
% of time flow above median flow	52%				
Volume of water above median flow for year (million m3)	298				

Significance of Ecological Values*	
------------------------------------	--

Allocation default Lower Limit (AL)

Allocation default Upper Limit (AL)

as assessed by Dr. Roger Young (Freshwater Ecologist, Cawthron - Coastal and Freshwater Group Manager)

		option			
Available Water		₹			
Regime Option (MF%-AL%)	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Minimum Flow Percentage of MALF	80%	70%	70%	70%	none (cesse tale = 70%)
Minimum Flow I/s (MF)	1904	1666	1666	1666	none
Allocation Percentage of MALF	30%	20%	15%	10%	14%
Total allocation I/s (AL)	714	476	357	238	333
% of demand met by allocation limit					
% of Existing met	100.0%	100.0%	100.0%	71.5%	100.0%
% of Waiting List met	100.0%	100.0%	20.0%	0.0%	0.0%
% of Future Irrigation met	100.0%	35.4%	0.0%	0.0%	0.0%

Low Flow Management					
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Risk to instream values (Roger Young's advice)	low-mod	mod erate	mod erate	moderate	moderate
Rationing Trigger	none	none	none	none	none
Cease Take Trigger I/s (MF+AL)	2618	2142	2023	1904	1657*
Average days below Minimum Flow per yr	12	8	8	8	ne

Security of Supply (based on data from 1975-2015 - Nov-April inclusive)					
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo*
of time flows are above cease trigger	87.6%	91.9%	92.9%	93.9%	96.1%

nd = no data availat na = not applicable

* information for 3 large consented takes only



This compares the different regimes in terms of security of supply. The metric chosen for this is the % of time that flows are above the cease take trigger – that is how much of the time water users will have all or part of their allocation available to them.

Moderate

These have been colour-coded for comparison using the classes defined on the colour code key (refer pdf attached to email) – these classes may need to be reviewed for appropriateness with water users.

Water Demand						
Existing Takes Waiting List Future Irrigation					gation	
Surface	333	Surface	120			
Ground	0	Ground	0			
Total	333	Total	120	Total	6	

(There is a further 1031/s on the waiting list in the Middle Takaka zone)

Existing & Waiting

Max Demand 518

Flow Statistics and Default Allocations						
Statistic	Methodology	% of 5yrLF	I/s	Location		
7 day MALF			2380	Harwoods		
1 day M ALF			1669	Harwoods		
1 in 5 Year Low Flow (7 day)			1646	Harwoods		
1 in 10 Year Low Flow (7 day)			1397	Harwoods		
Allocation default Lower Limit (AL)	10% of 5yr Low Flow	10%	165	Harwoods		
Allocation default Upper Limit (AL)	33% of 5yr Low Flow	33%	543	Harwoods		

Opportunity for C type takes to storage (over last hydrological year)				
Median flow (I/s)	10100			
% of time flow above median flow	52%			
Volume of water above median flow for year (million m3)	298			

Significance of Ecological Values [#]	Moderate

as assessed by Dr. Roger Young (Freshwater Ecologist, Cawthron - Coastal and Freshwater Group Manager)

Sugges ted option

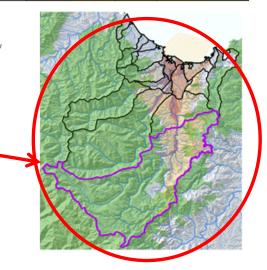
Available Water		4				
Regime Option (MF%-AL%)	80%-30%	70%-20%	70%-15%	70%-10%	status quo	
Minimum Flow Percentage of MALF	80%	70%	70%	70%	none (cesse tale = 70%)	
Minimum Flow I/s (MF)	1904	1666	1666	1666	none	
Allocation Percentage of MALF	30%	20%	15%	10%	1496	
Total allocation I/s (AL)	714	476	357	238	333	
% of demand met by allocation limit						
% of Existing met	100.0%	100.0%	100.0%	71.5%	100.0%	
% of Waiting List met	100.0%	100.0%	20.0%	0.0%	0.0%	
% of Future Irrigation met	100.0%	35.4%	0.0%	0.0%	0.0%	

Low Flow Management					
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo
Risk to instream values (RogerYoung's advice)	low-mod	mod erate	mod erate	moderate	moderate
Rationing Trigger	none	none	none	none	none
Cease Take Trigger I/s (MF + AL)	2618	2142	2023	1904	1657*
Average days below Minimum Flow per yr	12	8	8	8	na

Security of Supply (based on data from 1975-2015 - Nov-April inclusive)					
Regime option	80%-30%	70%-20%	70%-15%	70%-10%	status quo*
% of time flows are above cease trigger	87.6%	91.9%	92.9%	93.9%	96.1%

nd = no data available na = not applicable

This map shows the boundary for the relevant zone (purple) relative to the other zones in the Takaka Water Management Area.



^{*} information for 3 large consented takes only