

**NOTIFICATION ASSESSMENT**  
**DEEMED PERMIT REPLACEMENT WATER PERMIT**

**ID Ref:** A1413167  
**Application No:** RM20.049.01  
**Prepared for:** Staff Consents Panel  
**Prepared by:** Kirstyn Lindsay, Consultant Planner  
Mandy Lambert, Senior Consents Officer  
**Date:** 3 February 2021

**Subject:** Notification consideration for deemed permit replacement water permit RM20.049 by Arrow Irrigation Company Limited

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## **1. Purpose**

To report and make recommendations on the determination of the notification decision of Resource Consent application RM20.049 in accordance with Sections 95A-G of the Resource Management Act 1991 (the Act).

## **2. Background Information**

**Applicant:** Arrow Irrigation Company Limited

**Applicant's Agent:** Nick Geddes, C/O Clark Fortune McDonald and Associates

**Site address or location of the point of take:** Arrow River, at the Arrow River Gorge, approximately 5 kilometres (km) north of Arrowtown, Queenstown Lakes

**Legal descriptions of the take and use:** Various, see Appendix 1 of the application

**Certificate of titles reference:** Various, see Appendix 1 of the application

**Map references for the point of take:** NZTM2000 E1273782 N5018292

**Consents sought:** Water Permit to take and use water from the Arrow River as primary allocation and to retake water from races.

**Purpose of take:** Irrigation of pasture and crops, vineyards, lifestyle blocks, golf courses and amenity areas, and stock water supply

**Deemed permit being replaced:** WR1440Ar

### 3. Summary of Recommendation

I recommend, for the reasons outlined in this report, that this application, which is for a **restricted discretionary activity** overall, be processed on a **publicly notified** basis in accordance with section 95A of the Resource Management Act 1991.

Please note that this report contains the recommendations of the Consultant Planner and represents the opinion of the writer. It is not a decision on the notification of an application.

### 4. The Application

The applicant currently abstracts water from the Arrow River, as authorised by WR1440Ar, and distributes it to 249 shareholders holding 889 hectares (ha) of "quota". Shareholders are allocated shares depending on the amount of "quota" they hold. The annual connection fee entitles the shareholder to a 1 ha quota, which in terms of volume of water, allows 9,000 cubic metres (m<sup>3</sup>) annually over 1 ha (or 900 mm over 1 ha). If a shareholder wishes to irrigate more than 1 ha they can apply for additional quota, which provides the same amount of water per ha but is charged at a different rate. Generally, a shareholder is allocated shares proportionate to the quota held. The quota allocated is not specific to a defined area.

Water from the scheme is used for a number of purposes. A substantial area (but reduced when compared to historical use) uses water to irrigate pasture, lucerne, hay crops and for stock water to support traditional farming practices. A large and growing rural lifestyle area utilises water for residential garden and lawn surrounds, water features, ornamental ponds, and in some cases larger ponds / wildlife sanctuaries. These properties may also irrigate tree lanes and small paddocks, grazing horses or a few sheep. A number of these properties also operate tourist accommodation ventures with the need for green and attractive surrounds. Several residential subdivisions make use of irrigation water for street plantings and grass along street verges. Golf courses are a substantial user of water for fairways, greens, and amenity areas around resort facilities. Lastly, a small amount of water is used by vineyards. Other uses include 'top up' water provided to wetlands / wildlife refuges and proposed flushing water for Lake Hayes.

The proposed (and existing) intake is a 1.9 metre (m) concrete weir (refer Image 1 below) with head gates located above the weir (refer Image 2 below) which allows water to be taken into a 100 m long covered race leading to a concrete 3-hopper grit trap. The remainder of river water spills over the weir, and surplus water from the grit trap is returned to the river immediately below the weir. The damming of water at this location is authorised by RM2001.258.



**Image 1: Applicant's Weir (Source: Application)**

The valves, gates and grit trap at the intake are manually operated as there is no power supply. Access to the intake is via unbridged river crossings over steep terrain. The applicant advises that difficult access coupled with manual intake controls makes any fine tuning of daily water take problematic.



**Image 2: Applicant's Intake (Source : Application)**

A 5.5 km delivery pipeline conveys water from the grit trap down the Arrow Gorge where it discharges into an open race system elevated on the hillside behind Arrowtown. There are two primary races (Morven Ferry Race and Frankton Race) and numerous secondary races

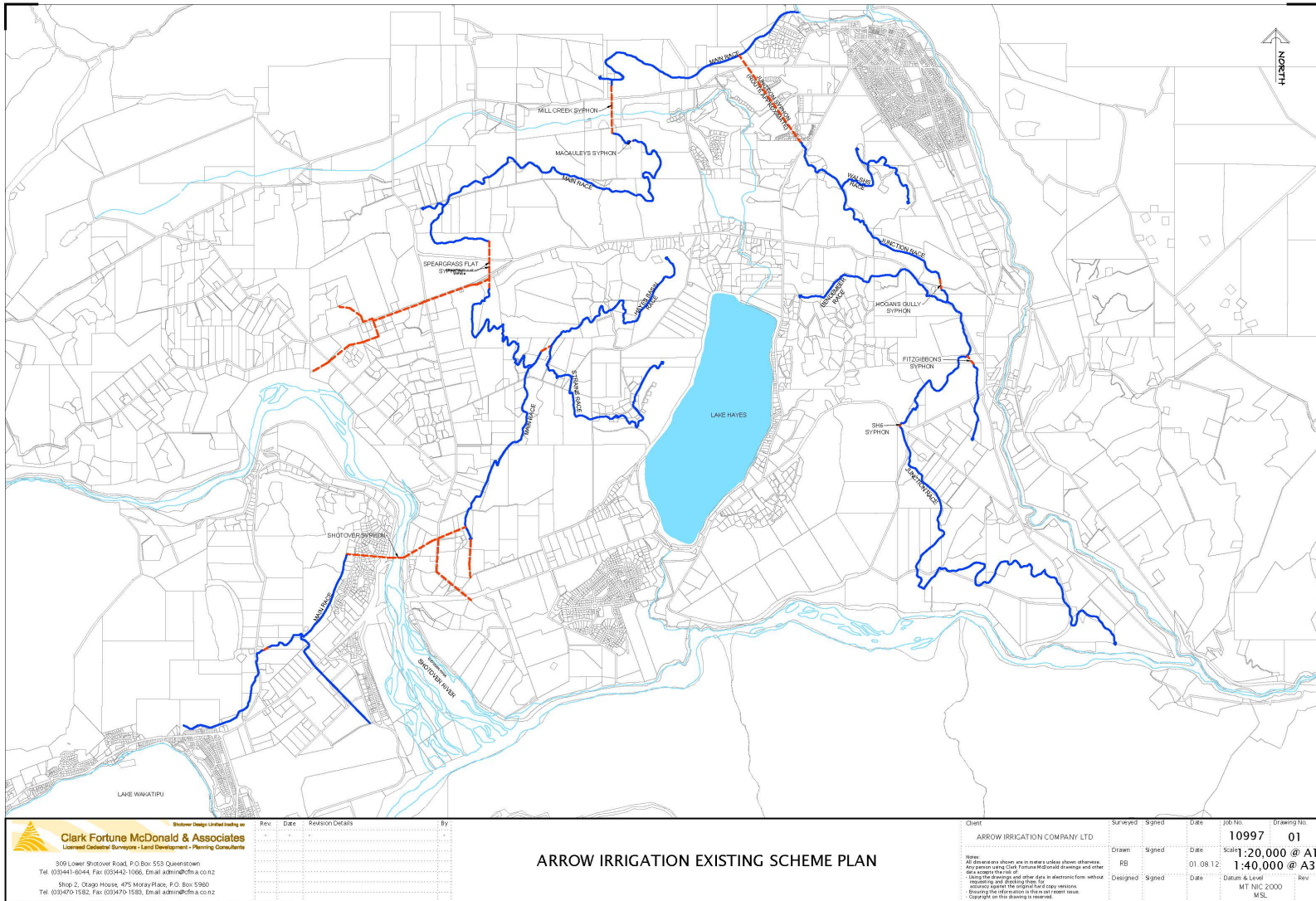
branching off the two main races which convey water via open elevated hillside races, piped sections and lower valley syphons to the use areas.

The applicant confirms that there are no augmented takes or takes from races that form part of the proposal. At times, surplus water (by-wash) within the race is discharged into Bush Creek which is a tributary of the Arrow River. There are also by-wash discharges at Mooneys into Mill stream and from the Frankton and Morven Ferry races. The by-wash discharges are discussed below. There is no retake of any of this water.

The Morven Ferry primary race carries water from Arrowtown southeast to Morven Ferry while the Frankton primary race carries water southwest to the Frankton Flats. Secondary race systems include piped water to the residential developments of Lake Hayes Estate, Shotover Country and Quail Rise for the purposes of irrigation (amenity water) while a new pumped system supplies amenity water to the rural living development of Bendemeer. The by-wash discharges are all into the broader Kawarau River catchment as follows:

- Bush Creek is a tributary of the Arrow river which is a tributary of the Kawarau River,
- Mooneys discharges into Mill Stream, Lake Hayes, then the Kawarau River,
- Frankton discharges into Lake Wakatipu, then the Kawarau River, and
- Morven Ferry discharges directly into the Kawarau River.

A plan of the irrigation scheme is shown below and more detailed plans are included in the application.



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Rev	Date	Revision Details	By

**ARROW IRRIGATION EXISTING SCHEME PLAN**

Client	ARROW IRRIGATION COMPANY LTD	Surveyed	Signed	Date	Job No.	10997	Drawing No.	01
Drawn	RB	Signed		Date	Scale	1:20,000 @ A1		
Designed		Signed		Date	1:40,000 @ A3			
				Date	Datum & Level	MT NZC 2000		Rev
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**Image 3: Arrow Irrigation Existing Scheme (Source: Application)**



An existing water measuring device is situated approximately 3.6 km below the intake on the delivery pipeline due to lack of telemetry at the intake site (refer Image 3 below). An exemption has been obtained for this monitoring site (WEX 0149). The monitoring meter was first installed in 2009 and the applicant notes that, in earlier years, problems were encountered with the functioning/ accuracy of the readings. The applicant considers these problems have been resolved and the last 5 years of readings present an accurate record of monthly and annual abstraction.



**Image 4: Water meter on delivery pipeline (Source: Application)**

Shareholders with larger allocations generally have water meters and the applicant has a policy of requiring all new shareholders fit meters at their connection points which allows for a more accurate measure of each individual take. There is no storage associated with the water scheme. Maps of the applicant's irrigation command area is included at Appendix 6 of the application. The breakdown of land use activity is shown in the table below.

**Table 1: Land Use Summary for the irrigation command area**

Land Use Category	Property area (ha)	Irrigated area (ha)	Number of Shareholders
Amenity Area	105	87	8
Curtilage/Lifestyle	400	222	117
Golf Courses	370	207	3
Pastoral	1,886	753	118
Pastoral/Vineyard	45	26	3
<b>Total</b>	<b>2,806</b>	<b>1,295</b>	<b>249</b>

**Rates and Volumes Applied For:**

Rate of take: 870 L/s  
 Monthly Volume: 2,254,120 m<sup>3</sup>/month  
 Annual volume: 8,802,018 m<sup>3</sup>/year

## Details of Deemed Permits Being Replaced

The applicant is seeking to replace Water Permit WR1440Ar, which expires 1 October 2021. Water Permit WR1440Ar authorises the applicant to take up to 65 heads (1,807 L/s) from the Arrow River above the falls for the purpose of electricity generation and irrigation.

This replacement water permit application was lodged with the Council at least six months before the expiry date. In accordance with Section 124 of the Act, the applicant may continue to operate under Water Permit WR1440Ar for the purposes of irrigation until a decision on this application is made and all appeals are determined. Given that the consent is for irrigation, the activity is considered to be the 'same' under s124 and continuation rights have been obtained. I note that the stockwater take is permitted under S14 of the Act.

## Historic Rate and Use Data and Deemed Permit Conditions

WR1440Ar provides for "*The diversion of 65 heads (1,807 L/s) of water for irrigation and electric power from the Arrow River above the Falls.*"

There are no conditions on the deemed permit which restrict the daily, monthly or annual volume of take.

The water use analysis has been assessed by Council's System and Information Analyst who noted that the seasonal pattern is consistent with irrigation but notes that it is also possible that water is also being taken for domestic potable and/or stock drinking water since 2019.

The analyst notes that the maximum volume taken in any day is 59,355 m<sup>3</sup>, a maximum of 1,552,742 m<sup>3</sup> in any month and 9,250,868 m<sup>3</sup> in any irrigation year. The analyst notes that the applicant has applied for 870 L/s with a  $\pm 5\%$  accuracy, which provides for a lowest rate at which water can be taken and still be in the range 870 L/s  $\pm 5\%$  of 827 L/s. The analyst advises that the historic data indicates that actual average maximum water use for the period 1 July 2012 to 30 June 2017 is 803 L/s and therefore, the highest rate at which water can be taken and still be in the range 803 l/s  $\pm 5\%$  is 843 L/s.

## Other Activities

The applicant has also identified that a discharge permit will be required. No rule breach has been identified or assessed in the application. The discharges associated with the take relate to the four by-wash points as detailed below and also for a potential discharge to Mill Creek and Lake Hayes as part of the Lake Hayes flushing proposal.

The application explains that there are four main by-wash points within the primary reticulation network:

- (a) The delivery pipeline from the Arrow Gorge weir can discharge into Bush Creek which is a tributary of the Arrow River. This discharge (by-wash) point is above the primary races which enables the control of water volume into the primary and secondary races without the necessity to travel all the way up the gorge to adjust the intake gate. As such, this discharge point operates as a management tool by allowing the "throttling" of the delivery pipeline.
- (b) Similar to the delivery pipeline discussed above, the Frankton race affords a discharge point at Mooney Road which then flows into Mill Creek which enables the discharge of surplus water from the main race if demand reduces.
- (c) The Frankton race terminates at the Frankton Arm of Lake Wakatipu where a discharge point delivers water into the Lake.

- (d) The Morven Ferry race terminates at the Kawarau River where a discharge point delivers water into the river.

The total volume of by-wash is shown in the following table:

**Table 2 : Total by-wash volumes (Source application)**

	2017 / 2018	2018 / 2019
<b>Total Take</b>	8,218,290	6,316,680
<b>Total By-Wash</b>	2,275,550	2,321,843
<b>Water Consumed</b>	6,042,740m <sup>3</sup>	3,994,837m <sup>3</sup>

As shown in the table above, the by-wash has been consistent for the preceding two seasons averaging approximately 2.300.300m<sup>3</sup>

For the purposes of assessing discharges within the catchment, all discharges will occur within the Dunstan Rohe as all discharges are contained within the wider Kawarau River Catchment. The discharges will not expect result in flooding, erosion, land instability or property damage, change the water level range or hydrological function of any Regionally Significant Wetland; or result in conspicuous change in colour or visual clarity or a noticeable increase in local sedimentation. It is assessed that Rule 12.C.1.1 is met and the discharge component of the application is assessed as a permitted activity.

No other activities have been identified in the application as requiring consent.

### **Application Documents**

The following documents were provided in support of the application:

- Form 1 and 4
- Assessment of Environmental Effects dated February 2020, updated March 2020 following further information request
- Appendix 1 – AIC Shareholder Details
- Appendix 2 – Photograph Gallery
- Appendix 3 – Seasonal Irrigation Demands, Soil Water & Irrigation Management Services.
- Appendix 4 – Assessment of Effects on Instream Ecology and Residual Flow Recommendation, prepared by Water Resource Management Ltd, January 2020.
- Appendix 5 – Arrow River Periphyton Assessment, prepared by Ryder Consulting Ltd, December 2019
- Appendix 6 – Schematics & Plans
- Appendix 7 – Volunteered Conditions of Consent
- Further information requested on 16 March 2020 and responded to on 15 April 2020 which addressed amenity and recreational effects, residual flow, efficiency of use periphyton report, details of the by-wash and verification of flow statistics, and
- Points of clarification provided on 14 May 2020.

### **Site Visit**

No site visit has been undertaken to date, due to the difficulties in reaching the intake structure and the vast area supplied by the water scheme. It is recommended that the S42A officer undertake a site visit when possible.



## 5. Description of the Environment

### 5.1 Description of the Site and Surrounding Environment

The water take is from the Arrow River and is situated in the Arrow River Gorge, approximately 5 km north of Arrowtown (refer to Image 4 below). Water is distributed to a large part of the geographical area known as the Wakatipu Basin, from Arrowtown in the east, Frankton in the west and south to the Kawarau River.

The area is characterised by short, hot, dry summers and very cold winters. Rainfall is variable within the catchment, ranging from 1,000-1,250 mm in the mountain headwaters, 700-750 mm in western and northern parts of the Wakatipu Basin, and 650 -700 mm heading southeast toward Morven Ferry. In very dry summers (Jan. to Feb.), rainfall can be 120-140 mm or less, in 1 out of 5 summers. These periods are when peak demand for irrigation water occurs. A summary of the soil types within the various areas is given in the Seasonal Irrigation Demand Report submitted within the application.

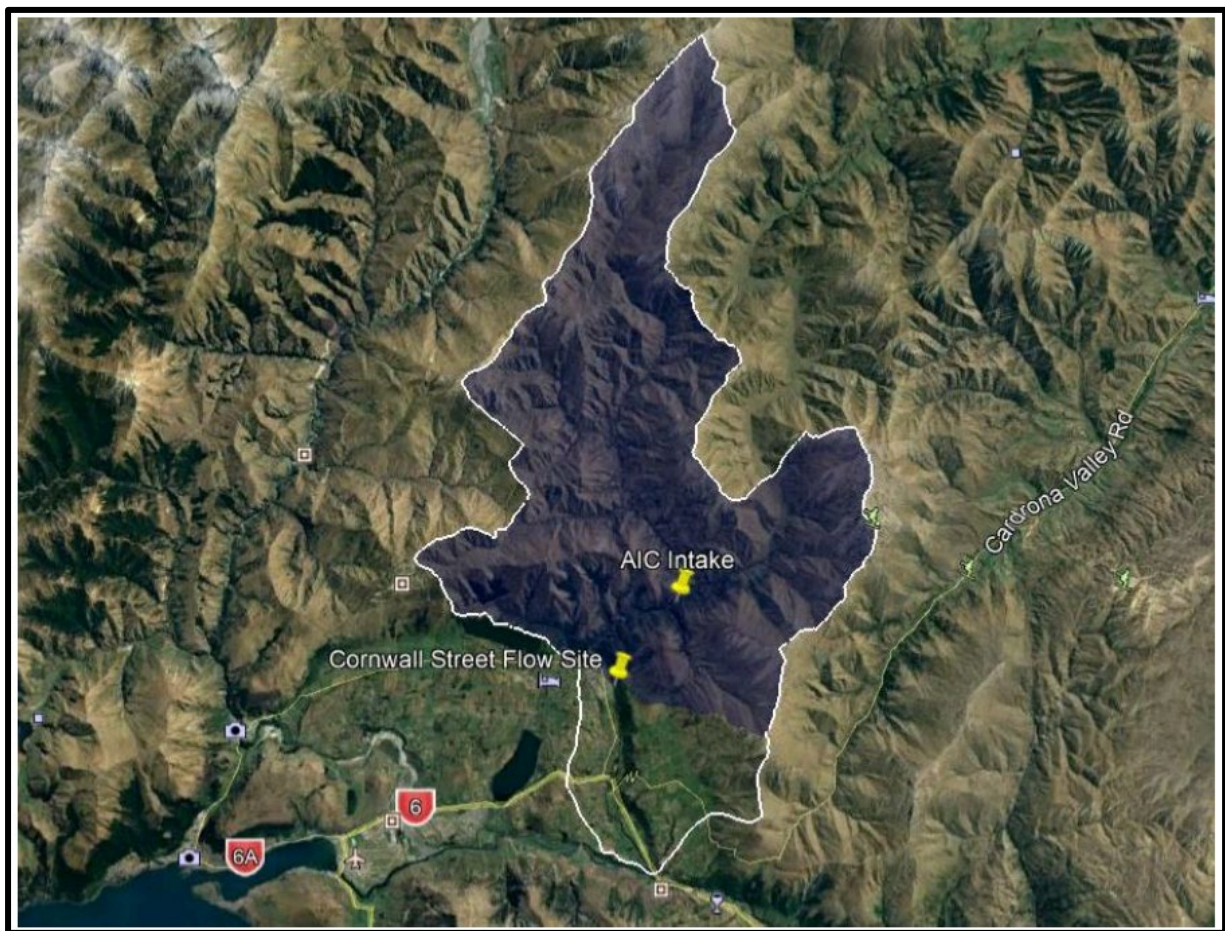


Image 5: Arrow River Catchment (White outline), the permanent flow site at Cornwall Street (catchment upstream shaded blue) and the existing point of take. (Source: Application)

## 5.2 Description of Surface Water Body

The Arrow River has a total catchment area of approximately 23,757 ha and a catchment area above the applicant's intake of 15,300 ha. The Arrow River is a significant tributary of the Upper Kawerau River entering on the true left downstream of Lake Wakatipu.

There is no flow monitoring site at the point of take and the only monitoring site currently on the River is the ORC site at Cornwall street, some 7 km below the point of take. There are no other mainstem takes between the flow site and the point of take. The ORC flow records from Cornwall street generally show that the Arrow River has low flows over summer months, interspersed with sharp peaks due to rain events, with increasing flows in autumn. Winter flows are moderate, but can fall during prolonged freezing periods, and spring has higher sustained flows, due to rain and snowmelt. The applicant has assessed the 7 day mean annual low flow (7dMALF) as 1,371 L/s at the applicant's point of take.

The Arrow River is used extensively for recreational purposes. The river environs adjacent to Arrowtown are very popular with local residents, holidaymakers and tourists. The road up the gorge from Arrowtown, which is accessible by 4-wheel drive vehicles only, continues past the intake and on to Macetown, which is a deserted historic gold mining town. This is a popular destination for visitors on foot, bicycles, or 4-wheel drive vehicles.

The Arrow River is not regarded as a prolific trout fishing river, but some large spawning fish are taken in the lower reaches and the reaches below Arrowtown provide easily accessible, safe, fishing for children and beginners. There are no commercial activities on the river itself, but several commercial operators run river related activities such as bicycle hire, gold pan hire, and 4-wheel drive trips up the gorge.

The NIWA Freshwater Fish Database records show introduced brown and rainbow trout as being present downstream of the point of take. Only Soho Creek upstream of the point of take appears to hold fish, with brown trout the most common species. Soho Creek also has the only native fish record for the entire Arrow catchment with one koaro individual documented. Eels have not been recorded in the Arrow River. An electric fishing survey was conducted by WRM Ltd and Ryders Consulting in January 2020 immediately downstream of the applicant's weir over a 1 km reach with both brown trout and rainbow trout recorded. No native fish were recorded or observed. Numerous trout between 150 mm – 250 mm were observed between Bracken Burn confluence and Arrowtown though no large fish (>400mm) were seen despite excellent clarity. These survey results appear to differ from the values set out in Schedule 1A of the RPW below and may be a reflection of the age of the schedule.

There are no water conservation orders for the Arrow River. However, it is noted that the Arrow River is a tributary of the Kawarau River which does have a Water Conservation Order. The Water Conservation (Kawarau) Order 1997 declares that the characteristics of the water shall be sustained and be preserved as far as possible in their natural state. For the Kawarau River these values include:

- wild and scenic characteristics;
- natural characteristics, in particular the return flow in the upper section when the Shotover River is in high flood;
- scientific values, in particular the return flow in the upper section when the Shotover River is in high flood;
- recreational purposes, in particular rafting, jetboating, and kayaking

Restrictions and prohibitions imposed by the order include no damming and water quality to be managed to a Class CR standard.

## 6. Regional Planning Context

### 6.1 Regional Plan: Water

#### Schedule 1 of the Regional Plan: Water

Schedule 1A of the Regional Plan: Water for Otago (RPW) recognises “ecosystem values” in relation to the Arrow River and describes the physical, habitat and species characteristics. It is noted that these were current at the time the RPW was notified in 1998 and do not reflect all/current natural values of a watercourse. The natural values for the Arrow River are identified as:

- a large water body supporting high numbers of particular species, or habitat variety, which can provide for diverse life cycle requirements of a particular species, or a range of species.
- sand and gravel bed composition of importance for resident biota.
- access within the main stem of a catchment through to the sea or a lake unimpeded by artificial means, such as weirs and culverts.
- presence of significant fish spawning areas for trout and salmon:
- presence of significant areas for development of juvenile trout and salmon.
- absence of aquatic pest plants (e.g. Lagarosiphon) identified in the Pest Management Strategy for Otago 2009.
- significant presence of trout.

Schedule 1A of the RPW recognises the Arrow River above 900 metres above sea level (asl) having a high degree of naturalness. The point of take is the most elevated part of the applicant’s scheme at approximately 520 metres asl.

Schedule 1B of the RPW identifies water takes used for public supply purposes (current at the time the RPW was notified in 1998). The Arrow River is not identified in Schedule 1B.

Schedule 1C identifies registered historic places which occur in, on, under or over the beds or margins of lakes and rivers. The Arrow River is not identified in Schedule 1C.

Schedule 1D of the RPW identifies spiritual or cultural beliefs, values or uses associated with water bodies of significance to Kāi Tahu. The following values and customary use interests for the Arrow River and tributaries are identified:

- **Kaitiakitanga** – the exercise of guardianship by Kai Tahu in accordance with tikanga Maori in relation to Otago’s natural and physical resources; and includes the ethic of stewardship.
- **Mauri** – life force; for example, the mauri of a river is most recognisable when there is abundance of water flow and the associated ecosystems are healthy and plentiful; a most important element in the relationship that Kai Tahu have with the water bodies of Otago.
- **Waahi taoka** – treasured resource; values, sites and resources that are valued and reinforce the special relationship Kai Tahu has with Otago’s water resources.
- **Mahika kai** – places where food is procured or produced. Examples in the case of waterborne mahika kai include eels, whitebait, kanakana (lamprey), kokopu (galaxiid species), koura (freshwater crayfish), freshwater mussels, indigenous waterfowl, watercress and raupo.
- **Kohanga** – important nursery/spawning areas for native fisheries and/or breeding grounds for birds.
- **Trails** – sites and water bodies which formed part of traditional routes, including tauraka waka (landing place for canoes).

- **Cultural materials** – water bodies that are sources of traditional weaving materials (such as raupo and paru) and rongoa (medicines).

The Arrow River is a tributary of the Kawarau River. The Kawarau River between Lake Dunstan and Lake Wakatipu has been identified as having the following ecosystem values:

- a large water body supporting high numbers of particular species, or habitat variety, which can provide for diverse life cycle requirements of a particular species, or a range of species.
- gravel and bedrock bed composition of importance for resident biota.
- access within the main stem of a catchment through to the sea or a lake unimpeded by artificial means, such as weirs and culverts.
- presence of significant fish spawning areas for trout and salmon.
- presence of significant areas for development of juvenile trout and salmon.
- absence of aquatic pest plants (e.g. Lagarosiphon) identified in the Pest Management Strategy for Otago 2009 upstream of Lake Dunstan.
- significant presence of trout, salmon and eel and indigenous fish species threatened with extinction.
- significant habitat for koaro including many tributaries.

The Kawarau River is identified as an Outstanding Natural feature or landscape for its:

- for its wild, scenic characteristics;
- natural characteristics, in particular the return flow in the upper section when the Shotover River is in flood;
- for scientific values, in particular the return flow in the upper section when the Shotover is in flood;
- for recreational purposes, in particular rafting, jet boating and kayaking.

The Kawarau River is identified as spectacular and rugged river gorge, schistose landscape, fast flowing white water and rapids, old gold sluicing landscape, from confluence with Arrow River to Lake Dunstan.

Schedule 1C identifies registered historic places which occur in, on, under or over the beds or margins of lakes and rivers. The following places on the Kawarau River are identified on the New Zealand Heritage List:

- Kawarau Falls bridge and dam, Frankton, Queenstown
- Kawarau Gorge Suspension Bridge, SH 6, Gibbston

Schedule 1D of the RPW identifies spiritual or cultural beliefs, values or uses associated with water bodies of significance to Kāi Tahu. The following values and customary use interests for the Kawarau River and tributaries are identified:

- **Kaitiakitanga** – the exercise of guardianship by Kai Tahu in accordance with tikanga Maori in relation to Otago's natural and physical resources; and includes the ethic of stewardship.
- **Mauri** – life force; for example, the mauri of a river is most recognisable when there is abundance of water flow and the associated ecosystems are healthy and plentiful; a most important element in the relationship that Kai Tahu have with the water bodies of Otago.

- **Waahi taoka** – treasured resource; values, sites and resources that are valued and reinforce the special relationship Kai Tahu has with Otago’s water resources.
- **Trails** – sites and water bodies which formed part of traditional routes, including tauraka waka (landing place for canoes).
- **Cultural materials** – water bodies that are sources of traditional weaving materials (such as raupo and paru) and rongoa (medicines).

## Schedule 2 of the Regional Plan: Water

The Arrow River is not listed in Schedule 2 of the RPW.

### Regionally Significant Wetlands

There are no regionally significant wetlands within the vicinity of the water take.

## 7. Status of Applications

### 7.1 Section 77A and s87A

Resource consent is required under the RPW and proposed Plan Change 7 (Water Permits) of the RPW (PPC7).

**Table 3: Planning Rules**

Planning Instrument	Rule	Purpose	Activity Status
RPW	Rule 12.1.4.5	Taking and use of surface water as primary allocation including the associated retakes from various storage reservoirs	Restricted Discretionary
PPC7	Rule 10A.3.2.1	Taking and use of surface water as primary allocation which does not meet Rule 10A.3.1.1	Non-Complying

PPC7 was notified by the Council for submissions on 18 March 2020 and the rules have immediate legal effect in accordance with section 86B(3) of the Act, as they relate to water. PPC7 was renotified on 6 July 2020 by the Environmental Protection Agency (“EPA”). PPC7 introduces two new rules relating to water takes which took immediate legal effect upon notification by the Council.

Under s88A of the RMA an application for a resource consent continues to be processed for the type of activity that applied when an application was made, despite an activity status changing as a result of a proposed plan change being notified. As this application was lodged prior to notification of PPC7, it will retain the activity status that it had under the operative rules in the RPW.

#### 7.1.1 – Regional Plan Water for Otago

##### **Restricted Discretionary Activity Rule 12.1.4.5**

*Taking and use of surface water as primary allocation applied for prior to 28 February 1998 in catchments not listed in Schedule 2A:*



- (i) *This rule applies to the taking of surface water, as primary allocation, in catchment areas not listed in Schedule 2A, if the taking was the subject of a resource consent or other authority:*
  - (a) *Granted before 28 February 1998; or*
  - (b) *Granted after 28 February 1998, but was applied for prior to 28 February 1998; or*
  - (c) *Granted to replace a resource consent or authority of the kind referred to in paragraph (a) or (b).*
- (ii) *Unless covered by Rule 12.1.1A.1, the taking and use of surface water to which this rule applies is a restricted discretionary activity. The matters to which the Otago Regional Council has restricted the exercise of its discretion are set out in Rule 12.1.4.8.*
- (iii) *Unless covered by Rule 12.1.1A.1, the taking and use of surface water in the Waitaki catchment to which this rule applies is a restricted discretionary activity provided that by itself or in combination with any other take, use, dam, or diversions, the sum of the annual volumes authorised by resource consent, does not exceed the allocation to activities set out in Table 12.1.4.2. The matters to which the Otago Regional Council has restricted the exercise of its discretion are set out in Rule 12.1.4.8.*
- (iv) *Takes to which this rule applies will not be subject to a minimum flow condition until the minimum flow has been determined by investigation and added to Schedule 2A by a plan change.*

*Note: If a minimum flow has been determined for a catchment previously not listed in Schedule 2A, and that minimum flow has been set by a plan change, the catchment will then be listed in Schedule 2A and Rule 12.1.4.2 or Rule 12.1.4.4 will apply.*

**Rule 12.1.4.8 Restricted Discretionary Activity considerations**

*In considering any resource consent for the taking and use of water in terms of Rules 12.1.4.2 to 12.1.4.7 and 12.2.3.1A, the Otago Regional Council will restrict the exercise of its discretion to the following:*

- (i) *The primary and supplementary allocation limits for the catchment; and*
- (ii) *Whether the proposed take is primary or supplementary allocation for the catchment; and*
- (iii) *The rate, volume, timing and frequency of water to be taken and used; and*
- (iv) *The proposed methods of take, delivery and application of the water taken; and*
- (iv) *The source of water available to be taken; and*
- (vi) *The location of the use of the water, when it will be taken out of a local catchment; and*
- (vii) *Competing lawful local demand for that water; and*
- (viii) *The minimum flow to be applied to the take of water, if consent is granted; and*
- (ix) *Where the minimum flow is to be measured, if consent is granted; and*
- (x) *The consent being exercised or suspended in accordance with any Council approved rationing regime; and*
- (xi) *Any need for a residual flow at the point of take; and*
- (xii) *Any need to prevent fish entering the intake and to locate new points of take to avoid adverse effects on fish spawning sites; and*

- (xiii) *Any effect on any Regionally Significant Wetland or on any regionally significant wetland value; and*
- (xiv) *Any financial contribution for regionally significant wetland values or Regionally Significant Wetlands that are adversely affected; and*
- (xv) *Any actual or potential effects on any groundwater body; and*
- (xvi) *Any adverse effect on any lawful take of water, if consent is granted, including potential bore interference; and*
- (xvii) *Whether the taking of water under a water permit should be restricted to allow the exercise of another water permit; and*
- (xviii) *Any arrangement for cooperation with other takers or users; and*
- (xix) *Any water storage facility available for the water taken, and its capacity; and*
- (xx) *The duration of the resource consent; and*
- (xxi) *The information, monitoring and metering requirements; and*
- (xxii) *Any bond; and*
- (xxiii) *The review of conditions of the resource consent; and*
- (xxiv) *For resource consents in the Waitaki catchment the matters in (i) to (xxiii) above, as well as matters in Policies 6.6A.1 to 6.6A.6.*

#### **7.1.1.2 PPC7**

Resource consent is required under PPC7, however the activity status of the application in accordance with PPC7 does not yet apply. The activity status of restricted discretionary in the operative RPW therefore applies to this application. Notwithstanding this, the rule in PPC7 is still a relevant consideration when assessing the application under section 104(1)(b) as a relevant provision of a proposed plan. The relevant rules against which the application should be assessed are as follows:

##### **10A.3.1 Controlled activity: Resource consent required**

*10A.3.1.1 Despite any other rule or rules in this Plan;*

- a. any activity that is currently authorised under a Deemed Permit; or*
- b. the take and use of surface water (including groundwater considered as surface water under policy 6.4.1A (a), (b) and (c) of this Plan) that is currently authorised by an existing water permit where that water permit expires prior to 31 December 2025;*

*is a controlled activity provided the following conditions are met:*

- i. The consent duration sought is no more than six years; and*
- ii. The deemed permit or water permit that is being replaced is a valid permit; and*
- iii. The application demonstrates that the total land area under irrigation does not exceed that irrigated in the 2017-2018 irrigation season, if the abstracted water is used for irrigation; and*
- iv. The rate of take shall be no more than the average maximum rate of take limit recorded during the period 1 July 2012 – 30 June 2017 and calculated in accordance with the method in Schedule 10A.4; and*

- v. Any existing residual flow, minimum flow, or take cessation condition (whichever is applicable) is included in the application for resource consent; and
- vi. The volume of water taken shall be no more than the average maximum of the daily volume limit, or monthly volume limit, or annual volume limit (whichever one or more are applicable) recorded during the period 1 July 2012 – 30 June 2017, and calculated in accordance with the method in Schedule 10A.4.

### **10A.3.2 Non-complying activity: Resource consent required**

10A.3.2.1 Despite any other rule or rules in this Plan:

- a. any activity that is the replacement of an activity authorised under a Deemed Permit; or
- b. the take and use of surface water (including groundwater considered as surface water under policy 6.4.1A (a), (b) and (c) of this Plan) that is the replacement of a take and use authorised by an existing water permit where that water permit expires prior to 31 December 2025;

that does not meet any one or more of the conditions of Rule 10A.3.1.1 is a non-complying activity.

The proposal does not meet Rule 10A.3.1.1(a)(i) as the applicant seeks a term of 35 years. As such, the proposal is assessed as a non-complying activity in accordance with Rule 10A.3.2.1

## **7.2 Overall Activity Status**

Overall, the proposal is considered to be a **restricted discretionary activity**.

Unless discussed above, all other relevant permitted activity rules are complied with or are authorised by resource consent.

## **8. Statutory Considerations**

### **8.1 Public Notification (Section 95A)**

Section 95A(1) requires the consent authority to follow the various steps set out in section 95A in order to determine whether to publicly notify an application.

#### **Step 1**

Step 1 is addressed in section 95A(2)-(3).

*Has the applicant requested public notification?*

Yes, the applicant requested public notification of the application on 2 November 2020 (see ref document A1406386)

*Has any further information been requested or report been commissioned? (Section 95C)*

Yes, a request for further information was made under section 92(1). The applicant did provide the information. Therefore, the application does not need to be publicly notified in accordance with section 95C of the RMA.

*Is the application made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977?*

No

The answer to step 1 is **yes** and the application is to be publicly notified under Step 1.

### **Step 2**

An assessment under Step 2 is not required as the applicant has requested public notification under Step 1.

### **Step 3**

The application must be notified because the answers in step one was yes. In order to be able to determine every person who is an affected person under s95B and satisfy the requirements of Regulation 10 of the Resource Management (Forms, Fees and Procedures) Regulations 2003 Step 3 is still outlined and discussed below.

Step 3 sets out two circumstances where the Council must publicly notify an application in terms of section 95A(8):

*(a) the application is for a resource consent for 1 or more activities, and any of those activities is subject to a rule or national environmental standard that requires public notification:*

There are no applicable rules or national environmental standard that requires public notification.

*(b) the consent authority decides, in accordance with section 95D, that the activity will have or is likely to have adverse effects on the environment that are more than minor.*

The Council, in deciding whether an activity will have or is likely to have adverse effects on the environment that are more than minor, for the purposes of public notification, must disregard:

- *any effects on persons who own or occupy the land in, on, or over which the activity will occur, or any land adjacent to that land;*
- *trade competition and the effects of trade competition;*
- *any matters beyond that which discretion has been restricted; and*
- *any effect on a person who has given written approval to the application.*

No affected party approvals were submitted with the application and no effects have been disregarded on any party.

The Council may disregard an adverse effect of the activity for the purposes of deciding whether an activity has adverse effects on the environment that are more than minor for the purposes of public notification, if a rule or national environmental standard permits an activity with that effect.

As a restricted discretionary activity, the Council must disregard an adverse effect of the activity that does not relate to a matter for which a rule or national environmental standard restricts discretion. The following matters are those to which discretion is restricted are listed in Section 7.1.1 above.

### **Comparison with Adverse Effects of Permitted Activities**

Permitted water takes and uses are provided for by Rule 12.1.2 of the RPW as follows:

- No take is for a volume greater than 25,000 litres per day; and
- No take is at a rate greater than 0.5 litres per second; and
- The taking or use does not have an adverse effect on the environment.

It is the effects beyond these permitted takes and uses which are critical for the assessment of this application.

### **Adverse Effects on the Environment**

Having regard to the planning framework as set out above, I consider that the adverse effects of the activity on the environment relate to:

- Allocation availability
- Minimum and residual flows
- Instream values and natural character
- Cultural values
- Recreational and amenity values
- Efficient use of the water resource
- Effects on groundwater.

The actual and/or potential adverse effects on the environment for the purposes of public notification are assessed below.

### **Allocation Availability**

The consent that this application seeks to replace was originally granted prior to 28 February 1998, and because the applicant has applied to replace this consent within the statutory timeframes given in Section 124 of the Act, this take will retain its primary allocation status. It is noted that Arrow River Catchment is fully allocated. The 7 day mean annual low flow (7dMALF) is calculated as 1,371 L/s and the proposed take is 870 L/s which equates to 63% of 7dMALF. However, it is also noted that the allocation sought is lower than currently consented by WR1440Ar.

### **Minimum and Residual Flows**

Minimum flows may be set for a river or catchment for the purpose of restricting primary allocation takes of water. There is no minimum flow for the Arrow River in Schedule 2A of the RPW.

The applicant has proposed a residual flow of 500 L/s to protect juvenile and adult trout habitat during times of low flow, retaining 85% and 77% habitat protection, respectively, based on observed 7dMALF.

There is a continuous flow site on the Arrow River at Cornwall Street (Cornwall Street Flow Site) which is located downstream of the point of take. There are no other mainstem takes between the flow site and the point of take. The applicant provides two tables showing a 7dMALF. The first table is derived from the full flow series (Dec 1976 to May 2019) and has a long term 7dMALF of 1,371 L/s. The second table has flow statistics for the past six years when the applicant has water meter data. This second table shows a lower 7dMALF of 1,134 L/s. The lower figure is understood to be due to this period being dryer than the long-term average. The Council's consultant ecologist reviewed the application and noted that the 7dMALF at the applicant's intake is a conservative estimate and that, in all probability, the 7dMALF is higher than 1,371 L/sec at the point of take and the proposed residual flow of 500 L/s would be lower than 36% 7dMALF.



No discussion is included in the assessment as to why retaining 85% and 77% habitat protection is appropriate in this instance and why a higher residual flow which achieves greater trout habitat protection has not been considered or applied. It is considered that the proposed residual flow will provide a very reliable water supply to the applicant and that this may be to the detriment of the instream rivers flow (36% of 7dMALF or less).

Overall, it is considered that the adequacy or appropriateness of the residual flow has not been sufficiently demonstrated and there is the potential for more than minor effects on instream and natural character values.

### **Instream Values and Natural Character**

The Arrow River is included in Schedule 1A of the RPW as identified above. As detailed in Section 5.2, the Arrow river contains brown and rainbow trout, and Soho Creek (upstream of the point of take) also has the only native fish record for the entire Arrow River catchment with one koaro individual documented.

Trout spawning is likely to be unaffected by the take during summer as trout spawn in winter. However, a flow of 450 L/s has been previously identified as the optimum flow for spawning adult brown trout and, as such, the applicant notes that the residual flow should be applied in winter also.

The applicant does not propose to install a fish screen at the point of take because large adult trout cannot pass the Arrow Falls and applicant's weir to spawn upstream.

Instream habitat modelling provides a basis for assessing the potential effects of minimum flows in the Arrow River on periphyton communities. This analysis suggests that a minimum flow in excess of 800 L/s, flow is likely to have little effect on periphyton composition, with little change in habitat quality for cyanobacteria, Didymo and long filamentous algae. However, habitat quality for diatoms is predicted to decline, and habitat quality for short filamentous algae is predicted to increase as flows decline below 800 L/s.

The instream and habitat assessments submitted by the applicant have been reviewed by Council's consultant ecologist. The consultant ecologist notes that the lower Arrow River is naturally a low productivity river reach. The consultant ecologist advises that while habitat for most species appears to increase as the flow decreases, due to the water velocity limitation decreasing, the key component of concern is the effect the flows will have on diatoms. The consultant ecologist notes that diatoms are the base of the food chain and there is a risk that habitat could be lost for these. Food is a limiting factor in habitat modelling, so therefore while the physical habitat can become more suitable for invertebrates and some fish, if the food source is removed, these other species will not be present. The consultant ecologist considers that a balance between all areas of the river food web is required while taking into consideration the natural state of the river.

In addition to the effects of the take on the Arrow River, the application is silent on the effects of the by-wash discharges on the receiving waters nor on the effects of providing water to act as a flushing mechanism in Lake Hayes to improve water quality. The rationale to support the 2,000,000 m<sup>3</sup> volume applied for is not provided within the application and, beyond a general statement that the flushing will improve water quality, the expected benefits to, or effects on, Lake Hayes and Mill Creek have not been assessed.

When considering the effects of the water take on natural character, no assessment is included in the application. While the application does traverse visual amenity, this assessment is primarily focussed on the visual impacts of the infrastructure (pipeline) associated with the take rather than any natural character effects arising directly from the reduction in water flow.

Overall, it is considered that the applicant has not established that the effects of the proposal on instream values or on the natural character of the Arrow River are no more than minor.

### **Cultural Values**

The Arrow River is identified within Schedule 1D of the of RPW. The application states that “*The values listed in Schedule 1D were identified and recognised in the Plan at a time when the AIC were abstracting more volume due to wild flooding irrigation practices*” and that “*Based upon historical abstraction and the volume applied for under the current application it is considered highly unlikely this could be considered to diminish the values listed above.*”

It is noted that the values identified in Schedule 1D relate to the relationship iwi has with the Arrow River and, in this regard, these values significantly pre-date Schedule 1D and the historic water take. The application is silent on the underlying principles of Te Mana o te Wai as an integral part of freshwater management. Te Mana o te Wai places the health and the mauri of water above all other uses.

Overall, it is considered that the cultural assessment undertaken by the application does not establish that the significance or otherwise of the effects of the proposal on cultural values are no more than minor. Given that the proposal seeks to take up to 63% of the conservative 7dMALF at the point of take, it is considered that there is the potential for adverse effects on cultural values including, but not limited to, Mauri and Waahi Toaka. These effects may be more than minor.

### **Recreational and Amenity Values**

The applicant identifies that the Arrow River is used extensively for recreational purposes, and that the public appreciate the visual amenity associated with the river. The applicant accepts that recreational values must be protected, and that it is important that visitors experience a natural and accessible river. However, the applicant references meetings about proposed minimum flows on the river and advises that overwhelming feedback, from a recreational user’s viewpoint, favours lower flows over summer months. Lower flows downstream of, and bordering Arrowtown, make the river safer and more accessible for swimming, gold panning, and angling. Lower flows upstream of Arrowtown make fording the river in the gorge safer for cyclists, hikers, and vehicles.

The applicant summarises that although the river has important recreational values, continued abstraction will have very minimal, if any, adverse effects on other water users or other human use values and any adverse effects associated with the proposal upon the recreational values are considered to be *de minimis*.

Based on the long term 7dMALF of 1,731 L/s, the application seeks to extract approximately 63% of the river flow. There is a risk that the consultation undertaken as part of any minimum flow discussion, did not capture the views of all parties with recreational and amenity interests in the Arrow River. Even if lower flows are preferable, it is uncertain if the flows proposed by this application are as imagined by the participants in that consultation. Care should be taken when applying findings of consultation which was undertaken for a different purpose. As such, it is considered that the applicant’s conclusion that the continued abstraction subject to this application will have very minimal, if any, adverse effects on other water users or other human use values is largely untested and there is the potential for these effects to be more than minor.

### **Efficient Use of the Water Resource**

Under existing permit, WR1440Ar, the applicant can abstract up to 50 heads (1,416 L/s) for the purposes of irrigation and electric power. This rate of take calculated over a 240-day irrigation season equates to approximately 30,000,000 m<sup>3</sup>. The applicant notes that the

maximum annual volume sought under this application represents a 70% reduction in annual paper allocation.

The application seeks to provide water to a range of uses including stock water, irrigation of crops, pasture and vineyards, irrigation of amenity areas and golf courses as well as supplying water to curtilage and lifestyle blocks (as detailed in Table 1).

The applicant submitted a Seasonal Irrigation Demand Report (SIDR). The SIDR calculates that a monthly volume of 2,254,120 m<sup>3</sup> and an annual (seasonal) volume of 6,789,518m<sup>3</sup> is required to efficiently irrigate the command area. It is unclear what crop coefficient has been applied under the SIDR and in addition, the SIDR appears to apply the irrigation requirements uniformly, regardless of cropping variations (i.e. no variation in demand calculated for pasture or vines) and climate.

The applicant has applied for 12,500 m<sup>3</sup> which provides water for 11,870 stock units at a rate of 5 litres/day x 210 days.

Seasonal irrigation demand and stock drinking water amounts to an annual water demand of 6,802,018m<sup>3</sup>. Domestic use is not identified in the application.

The applicant also seeks an additional 2,000,000m<sup>3</sup> in shoulder seasons and in periods of high river flow to provide water to flush Lake Hayes. The rationale to support the 2,000,000 m<sup>3</sup> volume applied for is not provided within the application and, beyond a general statement that the flushing will improve water quality, the expected benefits to, or effects on, Lake Hayes have not been assessed.

The application compares volumes of water taken and water used, with by-wash of around 2,300,000 m<sup>3</sup> annually (see Table 2). By-wash equates to 27% of the total take in the 17/18 year and 37% of the total take in the 18/19 year. There are in-built inefficiencies within the open race delivery method which the applicant acknowledges results in unavoidable water loss from both evaporation and seepage, with up to 37% of water being by-washed, primarily to enable the delivery of stock water to shareholders. Stock water makes up 0.2% of the overall take volume.

The application details upgrades undertaken to the infrastructure, however, due to the 40 km of open race there is unavoidable water loss from both evaporation and seepage. The applicant gives an undertaking to upgrade the open race system to a piped system as finances permit.

When applying the underlying principles of Te Mana o te Wai as an integral part of freshwater management, the rate and volume of take, along with the very high reliability of supply provided by the proposed residual flow, have not been adequately justified within the application. Overall, it is considered that the efficient use of the water resource has not be adequately established.

### **Effects on Groundwater**

The applicant's proposed surface water takes could potentially reduce the inputs to the groundwater system.

The ORC Investigation into the Wakatipu Basin Aquifers (2014) notes in relation to river recharge that The Arrow River, and to a lesser extent Bushy Creek, recharges the pool of groundwater in the Arrow-Bushy Creek Aquifer. The investigation also notes that the Arrow-Bushy Creek aquifer has local significance as it is the source of the Arrowtown public water supply (Queenstown Lakes District Council water permit RM19.410.01). The Arrowtown Water Supply is listed in Schedule 3B of the RPW.

The applicant has not provided any information on whether there is any known connection between the Arrow River and groundwater; therefore, I am unable to make a determination regarding the adverse effects on groundwater.

### Conclusion as to effects

The above assessment takes into consideration the key matters identified within the planning framework. It is considered that the effects of the proposal, as identified in the application, on recreational, cultural, amenity and natural character values are understated and the effects on the river food web and groundwater have not been sufficiently assessed. In addition, inefficiencies in the use of the water have been identified. The rationale for the volume of 2,000,000m<sup>3</sup> of water to be used for flushing Lake Hayes is not well defined. Furthermore, the requirement for the rate and volume of take and the very high reliability of supply have not been justified when taking into account the principals of Te Mana o te Wai.

It is considered that the application has not adequately demonstrated that the actual and potential effects of the proposal on the environment are no more than minor.

### Step 4

An assessment under Step 4 is not required as the applicant has requested public notification under Step 1.

### Potentially affected parties

I consider that the following parties may have been considered affected if the application was limited-notified or non-notified.

Party	Why Affected
<b>Aukaha on behalf of Te Runanga Otakou Inc and Hokonui Runanga Inc Soc</b>	Cultural values of the Arrow and Kawarau Rivers that may be affected by the activity. This is because the taking of water may affect the mauri of the water and/or the recognised cultural values of the water as displayed in Schedule 1D.
<b>Ngai Tahu Group Management Ltd</b>	
<b>Te Ao Marama Inc</b>	
<b>Department of Conservation (Otago Conservancy)</b>	DOC who represent the Director General of Conservation manage natural and historical resources for their intrinsic values, for the services that ecosystems provide, and for recreational use and enjoyment by the public. Land on the left and right banks of the river adjacent to the water take is crown land (leased). Because of the potential effects on the values of the Arrow River DoC is considered an affected person.
<b>Otago Fish &amp; Game Council</b>	Trout have been recorded as being present in the Arrow River. Fish and Game under the Conservation Act is a body cooperate which has the rights, powers and privileges of a natural person. The primary function of Fish and Game is

	to manage, maintain and enhance sports fish and game resources in the recreational interest of anglers and hunters.
<b>Land Information New Zealand (LINZ)</b>	The Arrow River is Crown Land administered for LINZ. This party is potentially affected as they administer the site.
<b>Landowners</b>	The landowner adjacent to the water take is Soho Property Limited (leaseholder of Crown Land) and may be an affected person due to potential permitted water takes, and access to the AIC water take location.
<b>Queenstown Lakes District Council</b>	QLDC may be affected as they have permits to take groundwater within the Arrow-Bushy Creek Aquifer for community supply (RM19.410.01), and the Arrow River recharges the groundwater in the aquifer.

It is also noted that there may be interested parties to this application including parties such as Royal Forest and Bird Protection Society of NZ as listed on Form 18 prepared for notification of the application. These parties will be informed that the application is notified, but they are not considered to be affected parties.

## 8.2 Recommendation as to public notification

For the reasons outlined above, I recommend that the application **is publicly notified** in accordance with section 95A of the RMA.

## 9. Notification Recommendation

Pursuant to sections 95A-95E, I recommend this application be processed on a publicly notified basis as per the applicants request:



Kirstyn Lindsay  
**Planning Consultant**

**3 February 2021**



Mandy Lambert  
**Senior Consents Officer**



## Decision on notification

### **Sections 95A to 95G of the Resource Management Act 1991**

**Date:** 3 February 2020

**Application No:** RM20.049.01

**Subject:** *Decision on notification of resource consent application under delegated authority*

### **Summary of Decision**

The Otago Regional Council decides that the application is to be processed on a **publicly notified** basis in accordance with sections 95A to 95G of the Resource Management Act 1991.

The above decision adopts the recommendations and reasons outlined in the Notification Report prepared by Kirstyn Lindsay and Mandy Lambert on 3 February 2021 in relation to this application.

I have considered the information provided, reasons and recommendations in the above report. I agree with those reasons and adopt them.

### **Decision under delegated authority**

The Otago Regional Council decides that this resource consent application is to be processed on a **publicly notified** basis in accordance with sections 95A to 95G of the Resource Management Act 1991. This decision is made under delegated authority by:



Joanna Gilroy

**Manager Consents**