

# **Burdekin Basin**

## **Burdekin Haughton Water Supply Scheme Operations Manual**

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# Chapter 1 Preliminary

## 1 Short title

This operations manual may be cited as the Burdekin Haughton Water Supply Scheme Operations Manual.

## 2 Interpretation of words used in this manual

The dictionary in attachment 1 defines particular words used in this manual.

## 3 Water supply scheme

The extent of the Burdekin Water Supply Scheme is within the Burdekin Basin and shown on the map in schedule 1 of the Water Plan (Burdekin Basin) 2007.

## Chapter 2 Operating rules

### 4 Operating levels of storages

- (1) The minimum operating levels and nominal operating levels for Burdekin Falls Dam, Clare Weir, Val Bird Weir and Giru Weir are specified in table 1.
- (2) The resource operations licence holder must not release water from a storage unless the release is necessary to achieve one or more of the following—
  - (a) meet minimum stream flow requirements in attachment 2 section 3 of the resource operations licence;
  - (b) supply water to a water allocation holder or a distribution operations licence holder; or
  - (c) maintain a downstream storage at its nominal operating level.
- (3) Despite subsection (2), the resource operations licence holder must not release or supply water from a storage when the water level in that storage is at or below its minimum operating level.
- (4) For this section—

**minimum operating level** means the operating level below which water cannot be used to supply water users, either because there is insufficient hydraulic gradient or because of poor water quality for environmental reasons.

**nominal operating level** means the level that the weir was designed to operate at.

**Table 1 – Operating levels of storages**

Storage	Minimum operating level (m AHD)	Nominal operating level (m AHD)
Burdekin Falls Dam	124.00	Not applicable
Clare Weir	13.68	Not applicable
Val Bird Weir	3.82	6.20
Giru Weir	2.25	3.00

### 5 Operation of Clare Weir flap gates

- (1) The resource operations licence holder may operate the flap gates for Clare Weir as necessary to—
  - (a) increase the storage capacity of the weir;
  - (b) minimise fluctuations in water levels in the weir impoundment;
  - (c) minimise fluctuations in water levels downstream of the weir; and
  - (d) protect Clare Weir’s infrastructure from structural damage.
- (2) The resource operations licence holder must prepare and maintain operating procedures that demonstrate that arrangements are in place to ensure that the flap gates for Clare Weir are operated in accordance with this section.

## Chapter 3 Water sharing rules

### 6 Announced allocations

- (1) The resource operations licence holder must—
  - (a) determine an announced allocation for each priority group for use in defining the share of water available to be taken under water allocations in that priority group;
  - (b) use the water sharing rules specified in this part to calculate announced allocations throughout the water year;
  - (c) calculate and set the announced allocation for each priority group to take effect on the first day of each water year;
  - (d) following the commencement of a water year—
    - (i) if the announced allocation percentage is less than 100 per cent—recalculate the announced allocation within five business days of the first calendar day of every month; and
    - (ii) reset the announced allocation—if a recalculation indicates that the announced allocation would—
      - (A) increase by five or more percentage points; or
      - (B) increase to 100 per cent; and
  - (e) within five business days of—
    - (i) setting an announced allocation under subsection (1)(c); and
    - (ii) the first calendar day of the month when resetting an announced allocation under subsection (1)(d)—
      - (A) publish the announced allocation; and
      - (B) publish details of the announced allocation, including parameters used in determining the announced allocation, on the resource operations licence holder's website for the Burdekin Haughton Water Supply Scheme.
- (2) The announced allocation must—
  - (a) not be less than zero or greater than 100 per cent;
  - (b) be rounded to the nearest per cent; and
  - (c) not be reduced during a water year.

### 7 Calculation of announced allocation for high priority group

The resource operations licence holder must calculate the announced allocation for water allocations belonging to the high priority group using—formula 1 as set out in section 10 of this manual.

### 8 Calculation of announced allocation for medium priority group

The resource operations licence holder must calculate the announced allocation for water allocations belonging to the medium priority group using—formula 2 as set out in section 10 of this manual.

- 9 Calculation of announced allocation for water allocations changed from medium to high priority group
- (1) This section applies to water allocations that have changed from belonging to the medium priority group to the high priority group, since the announced allocation for the medium priority group was last at 100 per cent.
  - (2) Despite section 7 of this manual, the resource operations licence holder must calculate the announced allocation for these water allocations as if they belonged to the medium priority group.
- 10 Announced allocation formulae
- (1) The formulae for calculating the announced allocations in sections 7 and 8 of this manual are detailed in table 2.
  - (2) The parameters for the formulae detailed in table 2 are defined in table 3.

Table 2 – Formulae for calculating the announced allocations

Formula	Definition
1	$100 \times (UV + IN - TOAH - MFV - CO + DIVH) / H$
2	$100 \times (UV + IN - H - RE - TOA - MFV - CO + DIV) / M$

Table 3 – Parameters for the formulae detailed in table 2

Parameter	Definition
H	The sum of the nominal volumes for all water allocations belonging to the high priority group.
M	The sum of the nominal volumes for all water allocations belonging to the medium priority group.
UV	<p>Useable volume for a storage, is the volume of stored water that can be used to supply water allocations through to the end of a water year and is calculated as—</p> <p style="text-align: center;"><b>UV = ASV – MOV</b></p> <p>where—</p> <p><b>adjusted storage volume (ASV)</b> means the storage volume, in megalitres, equating to the current storage level adjusted for the projected storage loss.</p> <p><b>projected storage loss</b> means the combined evaporation and seepage losses, in megalitres, that are expected to occur from the storage through to the end of the water year.</p> <p><b>minimum operating volume (MOV)</b> means the volume of water, in megalitres, that cannot be released or used from the storage under normal operating conditions.</p> <p>For the purposes of this section—</p> <p><b>UV</b> is the sum of the useable volumes for Burdekin Falls Dam and Clare Weir.</p> <p>The projected storage loss is determined using the values for evaporation and seepage specified in millimetres for each month in table 4. The value next to the current month is then used with the relevant storage volume/level curve and current storage volume to determine the projected storage loss.</p> <p><b>MOV</b> is specified for each storage in attachment 1 to the resource operations licence.</p>

<b>Parameter</b>	<b>Definition</b>
	Storage volumes are derived from the relevant storage volume/level curve referenced in attachment 1 to the resource operations licence.
<b>IN</b>	Inflow—an allowance for the inflows used in the calculation of the announced allocation. IN is derived from table 5 for the month the announced allocation is calculated.
<b>RE</b>	High priority reserve (ML)—the volume reserved for supplying high priority allocations in the future.  When the storage level in Burdekin Falls Dam is above 148.1 m AHD—RE is zero.  When the storage level in Burdekin Falls Dam is less than or equal to 148.1 m AHD—RE is $0.75 \times H$
<b>TOAH</b>	Transmission and operational allowance for high priority water allocations—an allowance for the expected instream losses associated with the supply of high priority water allocations over the remainder of the water year.  TOAH is derived from table 6 for the month the announced allocation is calculated.
<b>TOA</b>	Transmission and operational allowance for all water allocations—an allowance for the expected instream losses associated with the supply of both high and medium priority water allocations over the remainder of the water year.  TOA is derived from table 7 using linear interpolation of the announced allocation.
<b>MFV</b>	Minimum flow volume (ML)—an allowance for releases from Burdekin Falls Dam to meet the requirements of attachment 2 section 3 of the resource operations licence.  MFV is derived from table 8 for the month the announced allocation is calculated.
<b>DIVH</b>	High priority diversions—the sum of the diversions for all water allocations belonging to the high priority group during the current water year up to the time of calculating an announced allocation.
<b>DIV</b>	Total diversions—the sum of the diversions for all water allocations during the current water year up to the time of calculating an announced allocation.
<b>CO</b>	Carry over volume—the volume of water carried over from the unused portion of the entitlement at the end of the previous water year, including provision for storage losses.  CO must be set back to zero once any of the triggers in section 11(5) of this manual occur.



Table 4 – Projected storage losses for the Burdekin Haughton Water Supply Scheme

Projected storage depth for remainder of water year		
Month in which announced allocation is calculated	Burdekin Falls Dam (mm)	Clare Weir (mm)
July	1925	1925
August	1821	1821
September	1692	1692
October	1535	1535
November	1342	1342
December	1131	1131
January	921	921
February	718	718
March	538	538
April	360	360
May	218	218
June	100	100

Table 5 – Inflow allowance

Month	Inflow to Burdekin Falls Dam (ML)
July	0
August	0
September	0
October	0
November	0
December	692
January	27 010
February	24 921
March	12 886
April	1 859
May	162
June	0

Table 6 – Transmission and operational allowance for high priority water allocations

Month	Transmission and operational allowance (ML)
July	6710
August	6151
September	5591
October	5032
November	4473
December	3914
January	3355
February	2796
March	2237

Month	Transmission and operational allowance (ML)
April	1677
May	1118
June	559

Table 7 – Transmission and operational allowance for all water allocations

Announced allocation	Transmission and operational allowance (ML)					
	0 %	20 %	40 %	60 %	80 %	100 %
July	6 710	61 699	116 689	171 679	226 668	281 658
August	6 151	57 841	109 531	161 221	212 912	264 602
September	5 591	53 432	101 273	149 115	196 956	244 797
October	5 032	47 924	90 816	133 708	176 600	219 492
November	4 473	41 316	78 159	115 002	151 845	188 689
December	3 914	35 258	66 602	97 946	129 290	160 635
January	3 355	28 100	52 846	77 591	102 336	127 082
February	2 796	22 042	41 289	60 535	79 781	99 028
March	2 237	17 634	33 031	48 428	63 825	79 222
April	1 677	13 225	24 773	36 321	47 869	59 417
May	1 118	7 717	14 316	20 915	27 513	34 112
June	559	3 859	7 158	10 457	13 757	17 056

Table 8 – Minimum flow volume

Month	Allowance (ML)
July	5967
August	5267
September	3777
October	3265
November	3814
December	3937
January	2996
February	1297
March	1462
April	3313
May	5183
June	5733

## 11 Carry over

- (1) The resource operations licence holder may allow a water allocation holder to carry over part of the allocation holder's unused water from one water year to the next water year.

- (2) The total volume of unused water for the scheme that is permitted to be carried over to the next water year must be the lesser of—
  - (a) 25 per cent of the total nominal volume for the scheme; or
  - (b) 94.6 per cent of the total volume of unused water for the scheme at the end of the water year.
- (3) The resource operations licence holder must publish, on the holder's website, the methodology for determining the volume of water permitted to be carried over by each water allocation holder user in the event that the volume determined under subsection (2)(b) exceeds the volume determined under subsection (2)(a).
- (4) The volume of water that may be carried over by a water allocation holder must not be more than 94.6 per cent of the water holder's unused volume at the end of the water year.
- (5) Any volume of water that is carried over into a water year, and that is unused by the water allocation holder user as at the date of any of the following events, must be deducted from the volume of water available to the water holder—
  - (a) after six months into the commencement of the water year;
  - (b) when the Burdekin Falls Dam spills; or
  - (c) when the water level in Burdekin Falls Dam is less than, or equal to, 148.1 m AHD.

## 12 Taking water under a water allocation

- (1) The volume of water taken under a water allocation in a water year must not exceed the nominal volume of the allocation multiplied by the announced allocation.
- (2) The volume allowed to be taken under subsection (1) does not include the volume of water permitted to be carried over into the next water year under section 11 of this manual.

## Chapter 3 Seasonal water assignment rules

### 13 Seasonal water assignment rules—Regulation, s. 61

- (1) The holder of a water allocation may enter into an arrangement for a seasonal water assignment of a water allocation under section 61 of the Water Regulation 2016 only if—
  - (a) the total water use in a water year for each zone or zone group does not exceed the maximum allowable water use volumes in table 9 for each zone or zone group, and
  - (b) if the water being seasonally assigned is distributed to the assignee under a distributions operations licence—the distributions operations licence holder consents to the seasonal assignment; and
- (2) Water supplied under a seasonal water assignment may be used for any purpose.
- (3) Despite subsections (1) and (2), the resource operations licence holder must not approve the seasonal water assignment of a water allocation with a purpose of distribution loss, unless the assignment—
  - (a) is to the same person; and
  - (b) does not involve a change in purpose.
- (4) In this section—

**assignee** means the person or entity to whom an interest or right to water is being temporarily transferred (e.g. seasonally assigned).

**total water use**, for a zone or zone group, means the total volume of water taken under all water allocations managed under the resource operations licence within the zone or zone group.

**Lower Burdekin** means the Lower Burdekin zone group comprised of the Burdekin A and Burdekin B zones.

**water use** means the volume of water taken under the authority of a water allocation.

**zone** means a reach of a watercourse which is used to define the location of a water allocation. Zones are defined in the Water Plan (Burdekin Basin) 2007.

Table 9 – Maximum allowable water use volume

Zone	Maximum allowable water use volume (ML)
Burdekin A	370 000
Burdekin B	370 000
Burdekin C	950 000
Burdekin D	75 000
Burdekin E	50 000
Haughton A	57 978
Lower Burdekin	370 000

# Attachment 1 Dictionary

section 2

<b>Term</b>	<b>Definition</b>
Australian Height Datum (AHD).	AHD adopted by the National Mapping Council of Australia for referencing a level or height back to a standard base level.
Announced allocation	For water allocations managed under a resource operations licence, announced allocation means a number, expressed as a percentage, which is used to determine the maximum volume of water that may be taken in a water year under the authority of a water allocation.
Distribution loss	Water that is 'lost' when delivering water for water allocations in reticulated areas via constructed infrastructure through processes such as (but not limited to) evaporation, seepage, pipeline leakage, accidental loss through temporary pipe failure, loss through pressure relief systems, scouring and pigging.
Elevation (EL)	The elevation of a geographic location is its height above a fixed reference point, often the mean sea level.
Location	For a water allocation, location means the zone from which water under the water allocation can be taken.
Megalitre (ML)	One million litres
Nominal volume	Nominal volume means the volume of water, in megalitres, that represents the share of the water available to be taken by holders of water allocations in a priority group or a water allocation group.
Stream flow	Includes flow of water resulting from tributary inflows but does not include releases of supplemented water.
Unused water	Means the volume of water available to a water user under an announced allocation at the end of the water year minus the volume of water used by the water holder in the water year.
Water user	Water user means the holder of a valid water entitlement.
Water year	The water year for water managed under the Water Plan (Burdekin Basin) 2007 is the 12 month period beginning 1 July and ending 30 June.