

Attachment 4.1B

Dawson Valley Water Supply Scheme

Rules for conversion to water allocations

1 Locations where existing authorisations are being converted to water allocations

Existing authorisations for supplemented water are being converted to water allocations on:

- The Dawson River from the upstream limit of Glebe Weir to the downstream limit of the Boolburra waterhole; and
- Sections of tributaries of the Dawson River that contain water ponded from natural waterholes or infrastructure within the above section of the Dawson River.

2 Rules for conversion of existing authorisations to water allocations

The following rules apply for the conversion of existing authorisations to water allocations to establish the details required for the registration of supplemented water allocations.

2.1 Location

The location from which water may be supplied under a water allocation is specified as a zone according to the position of the existing authorisation. Descriptions of the zones for the Dawson River are given in Attachment 2.1.

2.2 Purpose

The purpose for which water may be taken under a water allocation is specified as 'agriculture', 'distribution loss' or 'any'. 'Agriculture' is the nominated purpose for those existing authorisations that are primarily used for agricultural purposes. 'Distribution loss' is the nominated purpose for water allocations for distribution losses for the Theodore and Gibber Gonyah channel systems. 'Any' is the nominated purpose for all other uses of water.

2.3 Volume

The nominal volume for a water allocation will be the volume stated on existing authorisations subject to the following arrangements for entitlements associated with watering stock normally depastured on the land and domestic purposes.

Under the Water Act, an owner of land adjoining a watercourse, lake or spring may take water for domestic purposes and watering stock that would be normally depastured on the land without a water entitlement. Therefore any existing authorisation that provides for the taking of water for stock and domestic purposes on land adjoining a watercourse will not be converted to a water allocation.

2.3.1 Arrangements for authorisations for irrigation and stock and domestic purposes

- a) For an authorisation for irrigation, stock and domestic purposes, where all the land supplied adjoins a watercourse:
- If the authorisation states an irrigation volume and a stock and domestic volume, the irrigation volume is the volume for the water allocation; or
 - If the authorisation states an irrigation volume but not a stock and domestic volume, the irrigation volume is the volume for the water allocation.
- b) For an authorisation for irrigation, stock and domestic purposes, where all the land supplied does not adjoin a watercourse:
- If the authorisation states an irrigation volume and a stock and domestic volume, the combined irrigation volume and stock and domestic volume is the total volume for the water allocation; or
 - If the authorisation states an irrigation volume but not a stock and domestic volume, the irrigation volume is the volume for the water allocation.
- c) For an authorisation for irrigation, stock and domestic purposes, where part of the land supplied is not contiguous with the land that adjoins a watercourse:
- If the authorisation states an irrigation volume and a stock and domestic volume, the combined irrigation volume and the calculated volume for stock and domestic purposes on the non-adjointing land is the volume for the water allocation; or
 - If the authorisation states an irrigation volume but not a stock and domestic volume, the irrigation volume is the volume for the water allocation.
- d) For an authorisation for stock and domestic purposes only, where all the land supplied does not adjoin a watercourse:
- If the authorisation states a stock and domestic volume, the stock and domestic volume is the volume for the water allocation; or
 - If the authorisation does not state a stock and domestic volume, the annual volume calculated for stock and domestic purposes is the volume for the water allocation.
- e) For Section 2.3.1c) and Section 2.3.1d), the annual volume calculated for domestic purposes is:
- i) 1 ML; or
 - ii) An alternative volume determined by the chief executive based on consideration of a submission received on this matter on the draft Resource Operations Plan (ROP).
- f) For Section 2.3.1c) and Section 2.3.1d), the annual volume calculated for stock watering is:
- i) A volume equivalent to 1 ML per 250 ha of land; or
 - ii) An alternative volume determined by the chief executive based on consideration of a submission received on this matter on the draft ROP.

Where an existing authorisation does not state a stock and domestic volume, the annual volume specified for the water allocation is the combined volume calculated using Section 2.3.1e)i) and Section 2.3.1f)i).

2.4 Priority group

2.4.1 Water allocations that take water from the Dawson River

The priority group for a water allocation converted from an existing authorisation to take supplemented water from the Dawson River is medium priority, except where a product specification or other undertaking associated with the authorisation identifies the authorisation's water supply as being high priority water allocation.

2.4.2 Water allocations that take water from the channel system

The priority group for a water allocation converted from an existing authorisation to take supplemented water from the SunWater channel system is medium A priority, except where a product specification or other undertaking associated with the authorisation identifies the authorisation's water supply as being high priority water allocation.

2.5 Conversion of medium or medium A priority to high priority

For the Dawson Valley Water Supply Scheme, the announced allocations for medium and medium A priority water allocations may be zero in the early part of the water year.

The intent of this section is to cover a period of up to 3 months from the start of the water year for occasions when the announced allocation for both medium and medium A priority water allocations could be zero.

The chief executive will consider submissions lodged during the draft ROP submission period that request a conversion of medium or medium A priority water allocation to high priority water allocation to provide for essential supplies for stock and domestic purposes to land which does not have a riparian entitlement for these purposes (see Section 2.3) or for public safety.

If the chief executive is satisfied, based on a submission, that a high priority water allocation is necessary due to a dependency on supply for essential purposes, the chief executive will reduce the medium or medium A priority water allocation volume determined under Section 2.3 by the volume determined under this section, and establish an additional high priority water allocation for the volume determined under this section.

Attachment 4.1C

Dawson Valley Water Supply Scheme

Total volume of supplemented water allocations

Table 1: Total volume of supplemented water allocations at Resource Operations Plan approval

Zone	Medium priority water allocation (ML)	Medium A priority water allocation (ML)	High priority water allocation (ML)
Dawson M	1,160	0	0
Dawson L	0	0	0
Dawson K	2,500	0	400
Dawson J	5,850	0	0
Dawson I	2,074	19,456	862
Dawson H	6,524	0	0
Dawson G	9,131	0	3,319
Dawson F	0	0	0
Dawson E	2,720	0	0
Dawson D	4,263	0	648
Dawson C	1,892	0	0
Dawson B	683	0	350
Total	36,797	19,456	5,579

Table 2: Total volume of supplemented interim water allocations at Resource Operations Plan approval

Zone	Medium priority interim water allocation (ML)	Medium A priority interim water allocation (ML)	High priority interim water allocation (ML)
Dawson G	105	0	0
Total	105	0	0

Attachment 4.1D

Dawson Valley Water Supply Scheme Infrastructure details

Storage: Glebe Weir – Dawson River AMTD 326.2 km

Description of water infrastructure	
Main embankment	Mass concrete and steel sheet piling weir
Full supply level	EL 170.54 m AHD
Fixed crest level	EL 170.54 m AHD
Saddle dam(s)	Nil
Fabridams	Nil
Gates	Nil
Storage volume and surface area	
Full supply volume	17,700 ML
Dead storage volume	430 ML
Surface area/elevation and storage volume/elevation relationship	Irrigation and Water Supply Commission Drawing No. S 36445A (28/09/73)
Spillway arrangement	
Description of works	Central ogee crest with cribbed sheet piling to each bank
Spillway level	EL 170.54 m AHD
Spillway width	58.54 metres
Discharge characteristics	Queensland Water Resources Commission Drawing No. A3-55197 (15/03/79)
River inlet/outlet works	
Description of works	An inlet tower equipped with dropboards discharging through a 1200 mm pipe bifurcating to two 675 mm diameter release valves
Multi-level inlet	Dropboards
Cease to flow level	Invert EL 160.44 m AHD
Discharge characteristics	Estimated maximum outlet discharge at FSL is 625 ML/day
Fish transfer system	
Description of works	Nil

Storage: Gyranda Weir – Dawson River AMTD 284.5 km

Description of water infrastructure	
Main embankment	Steel sheet piling weir
Full supply level	EL 157.25 m AHD
Fixed crest level	EL 157.25 m AHD
Saddle dam(s)	Anabranch Weir
Fabridams	Nil
Gates	Nil
Storage volume and surface area	
Full supply volume	16,500 ML
Dead storage volume	2,120 ML
Surface area/elevation and storage volume/elevation relationship	Queensland Water Resources Commission Drawing No. A3-64635 (16/3/87)
Spillway arrangement	
Description of works	Water flows over full width of weir
Spillway level	EL 157.25 m AHD
Spillway width	148.3 metres
Discharge characteristics	Queensland Water Resources Commission Drawing No. A4-64655 (26/2/92)
River inlet/outlet works	
Description of works	Main embankment: Multi level inlet discharging through 1600 mm by 1600 mm box culvert to a 'vee' notch weir approximately 50 metres downstream of embankment. Anabranch structure: 750 mm diameter pipe
Multi-level inlet	Multi level inlet equipped with: 900 mm by 900 mm sluice gate opening at EL 156.32 m AHD 1060 mm by 1060 mm sluice gate opening at EL 153.14 m AHD 1500 mm by 1500 mm sluice gate opening at EL 150.08 m AHD
Cease to flow level	Invert vee notch EL 149.75 m AHD Invert anabranch pipe approximately EL 153.64 m AHD
Discharge characteristics	Estimated maximum outlet discharge at FSL is 1000 ML/day
Fish transfer system	
Description of works	Nil

Storage: Orange Creek Weir – Dawson River AMTD 270.7 km

Description of water infrastructure	
Main embankment	Timber piled weir, with concrete work following maintenance/flood repairs
Full supply level	EL 150.29 m AHD
Fixed crest level	EL 150.29 m AHD
Saddle dam(s)	Anabranch weir
Fabridams	Nil
Gates	Nil
Storage volume and surface area	
Full supply volume	6,140 ML
Dead storage volume	2,320 ML
Surface area/elevation and storage volume/elevation relationship	Water Resources Commission (DPI) Drawing No. A3-101017 and 101018 (14/10/92)
Spillway arrangement	
Description of works	No separate spillway. Flows overtop full weir
Spillway level	EL 150.29 m AHD
Spillway width	48.82 metres
Discharge characteristics	Queensland Water Resources Commission Drawing No. A3-55199, submitted to NR&M 12/7/01
River inlet/outlet works	
Description of works	Main embankment: Outlet works consists of a high and low level outlet. Low level outlet is a 600 mm nominal diameter pipe controlled on the upstream end by a gate valve. The high level outlet is a 900 mm nominal diameter, two-barrel dropboard structure for crest releases. Anabranch structure: Outlet works consist of a 300 mm nominal diameter pipe controlled on the upstream end by a gate valve.
Multi-level inlet	High and low level outlets
Cease to flow level	Low level outlet invert EL 145.82 m AHD High level outlet invert EL 148.25 m AHD Anabranch outlet invert EL 147.42 m AHD
Discharge characteristics	Estimated maximum outlet discharge at FSL is 360 ML/day
Fish transfer system	
Description of works	Nil

Storage: Theodore Weir – Dawson River AMTD 228.5 km

Description of water infrastructure	
Main embankment	The main weir was originally of timber pile construction, with concrete abutment and apron slabs additions.
Full supply level	EL 133.63 m AHD
Fixed crest level	EL 133.63 m AHD
Saddle dam(s)	Timber piled anabranch weir
Fabridams	Nil
Gates	Nil, but note river inlet/outlet
Storage volume and surface area	
Full supply volume	4,760 ML
Dead storage volume	750 ML
Surface area/elevation and storage volume/elevation relationship	Queensland Water Resources Commission Drawing No. A3-36527B (10/1/84)
Spillway arrangement	
Description of works	Flows overtop full width of weir
Spillway level	EL 133.63 m AHD
Spillway width	60.63 metres
Discharge characteristics	Queensland Water Resources Commission Drawing No. A3-55200 (21/3/79)
River inlet/outlet works	
Description of works	Two 1000 mm by 750 mm gates
Multi-level inlet	Single level outlet with no inlet structure
Cease to flow level	Invert EL 131.75 m AHD
Discharge characteristics	Estimated maximum outlet discharge at FSL is 275 ML/day
Fish transfer system	
Description of works	Nil

Storage: Moura Offstream Storage – Dawson River Diversion AMTD 156.9 km

Description of water infrastructure	
Main embankment	Compacted earth
Full supply level	EL 125.29 m AHD
Fixed crest level	EL 125.29 m AHD
Saddle dam(s)	Not applicable
Fabridams	Nil
Gates	Nil
Storage volume and surface area	
Full supply volume	2,820 ML
Dead storage volume	140 ML
Surface area/elevation and storage volume/elevation relationship	Natural Resources (State Water Projects) Drawing No. A3-213163 (10/3/00)
Diversion works	
Description of works	Extracts from the Dawson River at AMTD 156.9 km. Reinforced concrete pump station with two by one cumec submersible pumps. Rising main comprising two by 660 mm OD steel pipes joining to a 960 mm OD steel pipe.
River inlet/outlet works	
Description of works	Floating intake arrangement installed in the offstream storage. Concrete base slab EL 118.30 m AHD Steel pipe through embankment invert level EL118.50 m AHD. River releases are made via: <ul style="list-style-type: none"> a) Rising main direct into the river; b) Rising main, then into the 200 mm diameter return line; or c) Combination of both the above.
Multi-level inlet	Floating intake arrangement
Cease to flow level	EL 118.6 m AHD
Discharge characteristics	Maximum 18 ML/day at FSL through return line Maximum 120 ML/day with pumps removed

Storage: Moura Weir – Dawson River AMTD 150.2 km

Description of water infrastructure	
Main embankment	Timber piled weir, which has been renovated to include steel and concrete
Full supply level	EL 104.75 m AHD
Fixed crest level	EL 104.75 m AHD
Saddle dam(s)	Nil
Fabridams	Nil
Gates	Nil
Storage volume and surface area	
Full supply volume	7,700 ML
Dead storage volume	600 ML
Surface area/elevation and storage volume/elevation relationship	Natural Resources (State Water Projects) Drawing No. A3-214477 (5/9/00)
Spillway arrangement	
Description of works	Flow overtops full width of weir
Spillway level	High level crest EL 105.05 m AHD Low level crest EL 104.75 m AHD
Spillway width	High level crest 135.67 metres Low level crest 55.70 metres
Discharge characteristics	Not available
River inlet/outlet works	
Description of works	River: 1440 mm diameter outlet pipe with a 1200 mm diameter butterfly valve. Back Creek: 900 mm diameter pipe
Multi-level inlet	Single level outlet only
Cease to flow level	River: invert EL 99.47 m AHD Back Creek: EL 101.25 m AHD
Discharge characteristics	Estimated outlet discharge at FSL is 850 ML/day
Fish transfer system	
Description of works	Vertical slot fishway

Storage: Neville Hewitt Weir – Dawson River AMTD 82.7 km

Description of water infrastructure	
Main embankment	Mass concrete weir
Full supply level	EL 80.30 m AHD
Fixed crest level	EL 80.30 m AHD
Saddle dam(s)	Anabranch weir
Fabridams	Nil
Gates	Nil
Storage volume and surface area	
Full supply volume	11,300 ML
Dead storage volume	2,120 ML
Surface area/elevation and storage volume/elevation relationship	Irrigation and Water Supply Commission Drawing No. S 43910 (21/5/75)
Spillway arrangement	
Description of works	Central ogee crest with cribbed sheet piling on both sides
Spillway level	EL 80.30 m AHD
Spillway width	76.20 metres
Discharge characteristics	Tabulated discharge relationship submitted to NR&M on 30/3/01
River inlet/outlet works	
Description of works	Main embankment: inlet structure with dropboards discharging through 750 mm nominal diameter pipe with 750 mm nominal diameter butterfly valve and a 300 mm nominal diameter gate valve. Anabranch structure: inlet structure with dropboards discharging through 600 mm nominal diameter outlet pipe with 375 mm gate valve.
Multi-level inlet	Dropboards
Cease to flow level	Main embankment: outlet pipe invert EL 72.53 m AHD Anabranch structure: outlet sill invert EL 74.80 m AHD Main embankment: inlet pipe invert EL 72.45 m AHD Anabranch structure: inlet sill invert EL 74.74 m AHD
Discharge characteristics	Outlet rating curve submitted to NR&M on 30/3/01 Estimated maximum outlet discharge at FSL is 300 ML/day
Fish transfer system	
Description of works	Fish lock

Attachment 4.1E

Dawson Valley Water Supply Scheme Rules for infrastructure operation and environmental management

1 Operating levels of storages and waterholes

1.1 Nominal operating levels of storages

The nominal operating level for each storage in the scheme is given in Table 1.

Releases must be made from the relevant upstream storage given in Table 1 to maintain the water level in a storage at its nominal operating level, unless the water level in the upstream storage is below its local supply level.

Storage levels may vary above and below the nominal operating level due to practical limitations of estimating and making releases and for unforeseen circumstances.

Table 1: Nominal operating levels of storages

Storage	Upstream storage	Nominal operating level
Glebe Weir	Not applicable	Not applicable
Gyranda Weir	Glebe Weir	EL 152.12 m AHD (4,100 ML)
Orange Creek Weir	Gyranda Weir	No level specified
Theodore Weir	Gyranda Weir	EL 132.73 m AHD (3,930 ML)
Moura Offstream Storage	Not Applicable	Not applicable
Moura Weir	Moura Offstream Storage and Theodore Weir	EL 102.55 m AHD (4,200 ML)
Neville Hewitt Weir	Not applicable	Not applicable

1.2 Local supply levels of storages

The local supply level and local supply area for each storage in the scheme is given in Table 2.

Releases must not be made from a storage that is below its local supply level for the purpose of maintaining nominal operating levels in downstream storages.

Releases may be made from a storage that is below its local supply level in order to supply water in its local supply area. The local supply area for a storage at a particular time extends to the pond of the next downstream storage at that particular time.

1.3 Minimum operating level of storages

The minimum operating level for each storage in the scheme are given in Table 2.

Table 2: Local supply levels, local supply areas and minimum operating levels of storages

Storage	Local supply level	Local supply area	Minimum operating levels
Glebe Weir	EL 163.6 m AHD (800 ML)	Glebe Weir pond and downstream to, but excluding, Gylanda Weir pond	EL 160.66 m AHD
Gylanda Weir	EL 151.80 m AHD (3,700 ML)	Gylanda Weir pond and downstream to, but excluding, Theodore Weir pond	EL 150.08 m AHD
Orange Creek Weir	Not applicable	Not applicable	EL 145.82 m AHD
Theodore Weir	EL 131.75 m AHD (3,140 ML)	Theodore Weir pond and downstream to, but excluding, Moura Weir pond	EL 126.95 m AHD
Moura offstream storage	Not applicable	Not applicable	No minimum level specified
Moura Weir	Not applicable	Moura Weir pond and downstream to, but excluding, Neville Hewitt Weir pond	EL 97.0 m AHD
Neville Hewitt Weir	EL 77.0 m AHD (4,000 ML)	Neville Hewitt Weir pond and downstream to downstream limit of Dawson Valley Water Supply Scheme	EL 72.53 m AHD

Water must not be released or supplied from a storage if the water level in that storage is below its minimum operating level, unless otherwise authorised by the chief executive.

Gylanda Weir may be drawn down to its minimum operating level only if Glebe Weir is below its local supply level.

Theodore Weir may be drawn down to its minimum operating level only if Gylanda Weir is below its local supply level.

Moura Weir may be drawn down to its minimum operating level only if Theodore Weir is below its local supply level and Moura Offstream Storage is below its dead storage volume. The dead storage volume for the Moura Offstream Storage is given in Attachment 4.1D.

1.4 Minimum levels in waterholes

For the waterhole known locally as Boolburra waterhole (nominally AMTD 18.37 km on the Dawson River):

- If the water level in Neville Hewitt Weir is above its local supply level, supplemented water should not be taken from the Boolburra waterhole if the water level in that waterhole is more than 0.5 metres below its cease to flow level; and
- If the water level in Neville Hewitt Weir is below its local supply level, supplemented water must not be taken from the Boolburra waterhole if the water level in that waterhole is more than 1.2 metres below its cease to flow level, unless otherwise authorised by the chief executive

For a waterhole within the extent of the Dawson Valley Water Supply Scheme other than the Boolburra waterhole:

- Supplemented water should not be taken from a waterhole that is more than 0.5 metres below its cease to flow level; and
- The chief executive may authorise supplemented water to be supplied from a waterhole when the level is more than 0.5 metres below its cease to flow level.

2 Diversions to Moura Offstream Storage

Water may be diverted to the Moura Offstream Storage at a rate not exceeding 173 ML/day, subject to the following:

- For the duration of the Moura Offstream Storage first post-winter flow management strategy, water may be diverted to the Moura Offstream Storage if the flow passing Moura Weir is more than 30 cumec; and
- At other times water may be diverted to the Moura Offstream Storage if the flow passing Moura Weir is more than 5 cumec.

The Moura Offstream storage first post-winter flow management strategy applies for the same period as the first post-winter flow management strategy for waterharvesting upstream of the Mimosa Creek junction, given in Section 5.1 of Attachment 5.1B.

The chief executive will notify the Resource Operations Licence (ROL) holder if the first post-winter flow management strategy for waterharvesting upstream of the Mimosa Creek junction is activated before 1 October, otherwise the strategy is activated on 1 October.

The chief executive will notify the ROL holder when the first post-winter flow management strategy for waterharvesting upstream of the Mimosa Creek junction ends.

The ROL holder must implement the Moura Offstream Storage first post-winter flow management strategy at the earlier of:

- Within 24 hours of notification of activation of the first post-winter flow management strategy for waterharvesting upstream of the Mimosa Creek junction; or
- 1 October.

3 Releases of water from storages

3.1 General rules

When determining releases from a storage, the ROL holder must have regard to the following:

- The total volume of water ordered, and its distribution;
- The likely contribution of inflows from tributaries that could assist the supply of orders;
- The likely transmission and operating losses;
- The travel time for water delivery;
- The volume of releases required to maintain nominal operating levels in downstream storages, and to maintain levels in waterholes;
- Releases must not be made from storages in the upper Dawson sub-scheme to:
 - Supply orders for water allocations located within the Neville Hewitt Weir pond;
 - Supply orders for water allocations located in zones Dawson B or Dawson C; or
 - Maintain storage levels in the lower Dawson sub-scheme;

- The local supply level in the supplying storage;
- The first post-winter flow management strategy;
- The seasonal base flow management strategy;
- The fishway management strategy; and
- The quality of water released from storages.

The ROL holder may incorporate provisions in supply contracts for circumstances when the release capacity of a storage is insufficient to meet downstream demand.

3.2 Release rate rules

Water may be released from a storage at a rate up to the maximum discharge capacity of its outlet works.

The maximum discharge capacity of the outlet works is to be used for meeting downstream demand or passing environmental flows as required.

A change to the rate of a release through the outlet works of a storage must have regard to the limits described in Table 3.

Table 3: Limits on changes to rate of release through the outlet works of storages

Storage	Limits on changes to rate of release through outlet works
Glebe, Gylanda, Orange Creek, Theodore, Moura and Neville Hewitt Weirs	<ul style="list-style-type: none"> • Reductions of release rate must occur incrementally, such that the risk of fish stranding and bank slumping is minimised. • Maximum rate of increase in release rate are not specified.
Moura Offstream Storage	<ul style="list-style-type: none"> • None specified

4 First post-winter flow management strategy

4.1 Upper Dawson sub-scheme first post-winter flow management strategy

4.1.1 Notification of activation of strategy

The upper Dawson sub-scheme first post-winter flow management strategy is activated when the chief executive notifies the Dawson Valley Water Supply Scheme ROL holder that the strategy is activated.

The chief executive will activate the first post-winter flow management strategy for the first flow event with the following attributes:

- General stream flow level rises of at least 1.5 metres in the Dawson River between Glebe Weir and the effective upstream limit of Gylanda Weir between 1 October and 10 April, to indicate circumstances that would potentially trigger ecological processes associated with the first post-winter flow; or
- General stream flow level rises of at least 1.5 metres in the Dawson River between Glebe Weir and the effective upstream limit of Gylanda Weir after 14 September, to indicate circumstances that would potentially trigger ecological processes associated with the first post-winter flow, provided that the water temperature is expected to be above the critical level for these processes; and
- Flow characteristics that would typically indicate an event resulting in flows between

Glebe Weir and the effective upstream limit of Gyranda Weir with a duration greater than base flow of at least 15 days, to support ecological processes associated with the intent of the first post-winter flow.

The following guidelines will apply to evaluation of these flow attributes and in making a decision to activate the first post-winter flow management strategy:

- The ecological processes trigger will generally be identified by a rise in stream flow of at least 2,000 ML/day in the Dawson River immediately downstream of Glebe Weir.
- For an event with the ecological processes trigger occurring in September, the water temperature should be at least 23°C; and
- The characteristics of the flow event will be evaluated to decide whether the event would typically result in extended periods of flow immediately downstream of Glebe Weir above the base flow (the Water Resource Plan (WRP) specifies a base flow of 46 ML/day at Glebe Weir). This evaluation will be based on stream flow as well as Bureau of Meteorology weather and rainfall information.

The decision to activate the first post-winter flow management strategy will typically be made within 3 days of the occurrence of the ecological process trigger flow. However, the decision may occur later if subsequent weather, rainfall and runoff conditions indicate that the flow duration attributes could be achieved.

The department will prepare work practices that further guide evaluations associated with the activation of the first post-winter flow management strategies. These guidelines will be regularly reviewed to adapt to technological advances and operational experience.

4.1.2 Strategy details

Releases to pass flows under the upper Dawson sub-scheme first post-winter flow management strategy are in addition to releases required for water supply or for maintaining operating levels in downstream weirs.

(a) Gyranda Weir

The ROL holder must implement the upper Dawson sub-scheme first post-winter flow management strategy at Gyranda Weir within 1 day of the activation of the strategy by the chief executive.

For 21 days from the date that implementation of the strategy begins at Gyranda Weir, inflows to Gyranda Weir must be passed as they occur, except:

- Releases must not be made if the water level in Gyranda Weir is below EL 154.9 m AHD (9,000 ML);
- Releases are not required when Gyranda Weir overflow is more than 100 ML/day; and
- Releases are not required when Gyranda Weir inflow is less than 30 ML/day.

For the purpose of implementing the strategy:

- The passing flow may vary above and below that required under this strategy due to practical limitations of estimating and making releases, the maximum discharge capacity of the outlet works, and for unforeseen circumstances;
- The shape of the passing flow hydrograph should follow as far as practicable the shape of the inflow hydrograph; and

- At those times when the maximum discharge capacity of the outlet works limits the ability to pass inflows, the excess inflow volume will be retained in storage.

(b) Moura Weir

The ROL holder must implement the upper Dawson sub-scheme first post-winter flow management strategy at Moura Weir within 1 day of the activation of the strategy by the chief executive.

For 21 days from the date that implementation of the strategy begins at Moura Weir, inflows to Moura Weir must be passed as they occur, except:

- Releases must not be made if the water level in Moura Weir is below EL 103.15 m AHD (4,900 ML);
- Releases are not required when Moura Weir overflow is more than 110 ML/day; and
- Releases are not required when Moura Weir inflow is less than 35 ML/day.

For the purpose of implementing the strategy:

- The passing flow may vary above and below that required under this strategy due to practical limitations of estimating and making releases, the maximum discharge capacity of the outlet works, and for unforeseen circumstances;
- The shape of the passing flow hydrograph should follow as far as practicable the shape of the inflow hydrograph; and
- At those times when the maximum discharge capacity of the outlet works limits the ability to pass inflows, the excess inflow volume will be retained in storage.

4.2 Lower Dawson sub-scheme first post-winter flow management strategy

4.2.1 Notification of activation of strategy

The lower Dawson sub-scheme first post-winter flow management strategy is activated when the chief executive notifies the Dawson Valley Water Supply Scheme ROL holder that the strategy is activated.

The chief executive will activate the first post-winter flow management strategy for the first flow event with the following attributes:

- General stream flow level rises of at least 1.5 metres in the Dawson River downstream of Neville Hewitt Weir between 1 October and 10 April, to indicate circumstances that would potentially trigger ecological processes associated with the first post-winter flow; or
- General stream flow level rises of at least 1.5 metres in the Dawson River downstream of Neville Hewitt Weir after 14 September, to indicate circumstances that would potentially trigger ecological processes associated with the first post-winter flow, provided that the water temperature is expected to be above the critical level for these processes; and
- Flow characteristics that would typically indicate an event resulting in flows downstream of Neville Hewitt Weir with a duration greater than base flow of at least 15 days, to support ecological processes associated with the intent of the first post-winter flow.

The following guidelines will apply to evaluation of these flow attributes and in making a decision to activate the first post-winter flow management strategy:

- The ecological processes trigger will generally be identified by a rise in stream flow of at least 2,000 ML/day in the Dawson River immediately downstream of Neville Hewitt Weir or at the Don River junction;
- For an event with the ecological processes trigger occurring in September, the water temperature should be at least 23°C; and
- The characteristics of the flow event will be evaluated to decide whether the event would typically result in extended periods of flow immediately downstream of Neville Hewitt Weir above the base flow (the WRP specifies a base flow of 78 ML/day at Neville Hewitt Weir). This evaluation will be based on stream flow as well as Bureau of Meteorology weather and rainfall information.

The decision to activate the first post-winter flow management strategy will typically be made within 3 days of the occurrence of the ecological process trigger flow. However the decision may occur later if subsequent weather, rainfall and runoff conditions indicate that the flow duration attributes could be achieved.

The department will prepare work practices that further guide evaluations associated with the activation of the first post-winter flow management strategies. These guidelines will be regularly reviewed to adapt to technological advances and operational experience.

4.2.2 Strategy details

Releases to pass flows under the lower Dawson sub-scheme first post winter flow management strategy are in addition to any releases required for water supply.

The ROL holder must implement the lower Dawson sub-scheme first post-winter flow management strategy at Neville Hewitt Weir within 1 day of the activation of the strategy by the chief executive.

For 21 days from the date that implementation of the strategy begins at Neville Hewitt Weir, inflows to Neville Hewitt Weir must be passed as they occur, except:

- Releases must not be made if the water level in Neville Hewitt Weir is below EL 77.0 m AHD (4,000 ML);
- Releases are not required when Neville Hewitt Weir overflow is more than 110 ML/day; and
- Releases are not required when Neville Hewitt Weir inflow is less than 35 ML/day.

For the purpose of implementing the strategy:

- The passing flow may vary above and below that required under this strategy due to practical limitations of estimating and making releases, the maximum discharge capacity of the outlet works, and for unforeseen circumstances;
- The shape of the passing flow hydrograph should follow as far as practicable the shape of the inflow hydrograph; and
- At those times when the maximum discharge capacity of the outlet works limits the ability to pass inflows, the excess inflow volume will be retained in storage.

5 Seasonal base flow management strategy

5.1 Theodore Weir seasonal base flow management strategy

A seasonal base flow equal to the inflow to Theodore Weir must pass Theodore Weir if:

- Inflows to the weir are between 60 ML/day and 100 ML/day;
- The water level in the weir is above EL 133.0 m AHD (4,200 ML); and
- The upper Dawson sub-scheme first post-winter flow management strategy is not in effect.

A seasonal base flow of 100 ML/day must pass Theodore Weir if:

- Inflows to the weir are greater than 100 ML/day;
- The water level in the weir is above EL 133.0 m AHD (4,200 ML); and
- The upper Dawson sub-scheme first post-winter flow management strategy is not in effect.

Seasonal base flow passed through Theodore Weir is in addition to any release required for supply between Theodore Weir and the Moura Weir pond.

For the purpose of implementing this strategy:

- The volume passed over a 48-hour period must be within plus 20% and minus 20% of the volume required to be passed under the strategy;
- The commencement and cessation of any release required under this strategy may be delayed by up to 48 hours; and
- Inflows to the weir do not include any water which was released from Gylanda Weir intended to maintain the level in Theodore Weir at its nominal operating level or to supply users between Gylanda Weir and the Theodore Weir pond.

5.2 Moura Weir seasonal base flow management strategy

A seasonal base flow equal to the inflow to Moura Weir must pass Moura Weir if:

- Inflows to the weir are between 70 ML/day and 110 ML/day;
- The water level in the weir is above EL 102.8 m AHD (4,500 ML); and
- The upper Dawson sub-scheme first post-winter flow management strategy is not in effect.

A seasonal base flow of 110 ML/day must pass Moura Weir if:

- Inflows to the weir are greater than 110 ML/day;
- The water level in the weir is above EL 102.8 m AHD (4,500 ML); and
- The upper Dawson sub-scheme first post-winter flow management strategy is not in effect.

Seasonal base flow passed through Moura Weir is in addition to any release required for supply in the reach between Moura Weir and the Neville Hewitt Weir pond.

For the purpose of implementing this strategy:

- The volume passed over a 48-hour period must be within plus 20% and minus 20% of the volume required to be passed under the strategy;

- The commencement and cessation of any release required under this strategy may be delayed by up to 48 hours; and
- Inflows to the weir do not include any water which was released from Theodore Weir intended to maintain the level in Moura Weir at its nominal operating level or to supply users between Theodore Weir and the Moura Weir pond.

5.3 Neville Hewitt Weir seasonal base flow management strategy

A seasonal base flow equal to the inflow to Neville Hewitt Weir must pass Neville Hewitt Weir if:

- Inflows to the weir are between 70 ML/day and 110 ML/day;
- The water level in the weir is above EL 77.0 m AHD (4,000 ML); and
- The lower Dawson sub-scheme first post-winter flow management strategy is not in effect.

A seasonal base flow of 110 ML/day must pass Neville Hewitt Weir if:

- Inflows to the weir are greater than 110 ML/day;
- The water level in the weir is above EL 77.0 m AHD (4,000 ML); and
- The lower Dawson sub-scheme first post-winter flow management strategy is not in effect.

Seasonal base flow passed through Neville Hewitt Weir is in addition to any release required for supply between Neville Hewitt Weir and the downstream limit of the Boolburra waterhole.

For the purpose of implementing this strategy:

- The volume passed over a 48-hour period must be within plus 20% and minus 20% of the volume required to be passed under the strategy;
- The commencement and cessation of any release required under this strategy may be delayed by up to 48 hours; and
- Inflows to the weir do not include any water which was released from Moura Weir intended to supply users between Moura Weir and the Neville Hewitt Weir pond.

6 Fishway management strategy

6.1 Moura Weir

The ROL holder is authorised to operate the Moura Weir fishway when:

- Flows passing the weir are greater than 80 ML/day; and
- The weir storage level is between EL 102.75 m AHD and 105.47 m AHD.

The ROL holder may operate the fishway at other times, provided the releases from the weir are not more than that required to:

- Supply water;
- Meet the requirements of the upper Dawson sub-scheme first post-winter flow management strategy; and
- Meet the requirements of the seasonal base flow management rules.

6.2 Neville Hewitt Weir

The ROL holder is authorised to operate the Neville Hewitt Weir fishlock when:

- Flows passing the weir are greater than 80 ML/day; and
- The weir storage level is between EL 78.3 m AHD and 81.1 m AHD.

The ROL holder may operate the fishlock at other times, provided the releases from the weir are not more than that required to:

- Supply water;
- Meet the requirements of the lower Dawson sub-scheme first post-winter flow management strategy; and
- Meet the requirements of the seasonal base flow management strategy.

7 Quality of water released from storages

Where a storage incorporates a multi-level outlet, the ROL holder must draw water from the level that optimises the quality of the water released (for example, dissolved oxygen concentration and the temperature in the release water optimised), to minimise the impact on the downstream water quality. If this level does not provide enough capacity for the required release, other levels must be used to give the required discharge.

8 Use of watercourses for distribution of water

The ROL holder may use the following watercourses for the purposes of distribution of water:

- The Dawson River from the upstream limit of Glebe Weir to the downstream limit of the Boolburra waterhole; and
- Sections of tributaries of the Dawson River that contain water from natural waterholes and infrastructure within the above section of the Dawson River.

The ROL holder must not divert water to any watercourse other than those given above for distribution of water.

9 Riparian stock and domestic use

Under Section 20(3) of the Water Act, an owner of land adjoining a watercourse, lake or spring may take water for domestic purposes and watering stock that would be normally depastured on the land without a water entitlement. In this section this is referred to as 'riparian entitlement water'.

This means that riparian entitlement water might also be taken through the same metered water facilities as supplemented water and some users might desire appropriate allowances be made for their riparian entitlement water use. The historical arrangements for accounting for individual riparian use taken through metered facilities will not apply following commencement of the ROP.

9.1 Rules for adjusting metered use for riparian entitlement water use

This section provides arrangements to allow adjustments for riparian entitlement water metered use.

The ROL holder must enter into an arrangement with any water user who requests metered

use adjustments for riparian entitlement water use taken through a metered facility. The ROL holder must supply details of the arrangements with each individual user to the chief executive within 5 business days of an agreement.

An arrangement must comply with the departmental guidelines for this purpose.

If the ROL holder and a water user are unable to reach agreement on an arrangement, the chief executive will decide the arrangement that will apply in that particular instance.

Attachment 4.1F

Dawson Valley Water Supply Scheme

Water sharing rules

This attachment provides water sharing rules for:

- Announced allocations;
- Critical water supply;
- Transfer of water between water years; and
- Seasonal water assignments.

There are three types of water allocation supplied to water users in the Dawson Valley Water Supply Scheme, namely medium, medium A and high priority water allocations. The water sharing rules specify the way the water resources of the Dawson Valley Water Supply Scheme will be shared between each of the water allocation priority groups.

For the purposes of this attachment, an interim water allocation must be managed as if it is a water allocation.

1 Announced allocation rules

The announced allocation percentage is the percentage of the water allocation nominal volume that may be supplied during the water year.

The Resource Operations Licence (ROL) holder is required to calculate announced allocation percentages for each priority group through the use of formulas and associated parameters. Details for each parameter used are specified in Section 5.

The amount of water that can be apportioned to each of the priority groups at any given time is determined by taking into account a number of factors, including:

- The time of year an assessment is made;
- The amount of water used in the current water year up to the date of the assessment;
- The amount of water stored in the storages;
- Allowance for evaporative and seepage losses from storages;
- Allowance for future inflows and the probability of those inflows occurring at particular times in the water year;
- Allowance for the requirements of high priority water allocation for the first four months of the next water year;
- Allowance for transmission and operational losses along the river; and
- The net amount of the water allocation volume moved into the current water year from the previous water year.

The values for these factors applied in the announced allocation formula seek to maximise the availability of medium and medium A priority water allocation and secure the reliability for high priority water allocations as determined by testing in the department's hydrologic model (IQQM) over the long-term historical period. Importantly the values given for these factors should not be taken out of the context of their purpose as part of the overall package used to

determine the announced allocation. For example, the values for some of the factors vary depending on the probability of natural inflows which in effect reduce the need for future provisions associated with losses at certain times of the year.

The announced allocation formula provides for announced allocation differential of up to 20% for medium A priority water allocations over medium priority water allocations in the upper Dawson sub-scheme. This is consistent with arrangements previously in place for supplies from the channel systems in the Dawson scheme.

1.1 General rules for announced allocations

The water year for the Dawson Valley Water Supply Scheme is from 1 October to 30 September in the following year.

Separate assessment of announced allocation percentage must be made for each priority group in each sub-scheme.

The initial announced allocation percentage for a water year must be announced within 2 weeks after the start of that water year.

The ROL holder may announce an interim announced allocation at any time during a water year. An interim announced allocation percentage must not be greater than the percentage that would be calculated using the formulas in Section 1.2. An interim announced allocation has effect as if it was an announced allocation calculated using the formulas in Section 1.2.

The ROL holder must announce an interim announced allocation immediately prior to the commencement of a water year. The basis/criteria for the determination of the interim announced allocation for the start of the water year must take into account water user requirements, and be made available to water users.

Announced allocation percentages must not be reduced during a water year.

Announced allocation percentages must not be greater than 100%.

Announced allocation percentages must be rounded to the nearest 1%.

Announced allocation percentages must be reviewed, and revised percentages announced within 2 weeks after a major inflow occurs. A major inflow is defined as one that would result in:

- For times when the announced allocation is less than 10% prior to the inflow:
 - The announced allocation percentage increasing by 2% or more;
- For times when the announced allocation is more than 10% prior to the inflow:
 - The announced allocation percentage increasing to 100%; or
 - The announced allocation percentage increasing by 5% or more.

If the announced allocation percentage is less than 100%, the announced allocation percentage should be reviewed at intervals not greater than 3 months.

The ROL holder should advise water users of forecast announced allocations, including details of the parameters used in determining the forecast values. The criteria for forecasting announced allocations, including the timing, frequency and level of accuracy must take into

account water user requirements, and be made available to water users.

1.2 Calculation of announced allocation percentages

1.2.1 Medium and medium A priority water allocations

1.2.1(a) Upper sub-scheme

The initial announced allocation and any revised announced allocations for medium priority water allocations (AAm) and for medium A priority water allocations (AAma) must be determined from the following relationships.

$$(AAm * MPA) + (AAma * MAPA) = (UV + IN - HPA - RE - TOL + USE - VIWY) * 100$$

Where:

If AAma ≤ 20%, AAm = 0%

If AAma > 20%, AAm = AAma-20%

If AAm > 80%, AAma = 100%

The parameters used in these relationships are defined in Section 5.

1.2.1(b) Lower sub-scheme

The announced allocation percentage for medium priority water allocations in the lower sub-scheme must be determined from the following relationship.

$$AAm * MPA = (UV + IN - HPA - RE - TOL + USE - VIWY) * 100$$

The parameters used in this relationship are defined in Section 5.

1.2.2 High priority water allocations

The announced allocation percentage for high priority water allocations in a sub-scheme (AAh) must be 100% if the announced allocation percentage determined for both medium and medium A priority water allocations in that sub-scheme is greater than zero.

If the announced allocation percentage for medium and medium A priority water allocations in a sub-scheme is zero, the amount of water that may be taken by high priority water allocations in that sub-scheme may be subject to the critical water supply water sharing rules in Section 2.2.

2 Critical water supply water sharing rules

2.1 Critical water supply water sharing rules for 1 July to 30 September

The announced allocation arrangements preferred by irrigators and adopted for this ROP is an aggressive approach whereby the amount of water allocated in the early part of the water year is more than the amount available in storage at that time to assure supply of all allocated water throughout the water year. Essentially this means that there is an inherent dependence on wet season inflows to satisfy these allocations established prior to the wet season.

To account for the risks associated with the aggressive announced allocation approach, these critical water supply rules aim to provide a safety net for supplies for essential needs in the event that all the allocated water cannot be supplied. Circumstances when these rules might need to be applied include for example, the failure of a wet season to significantly replenish storages or due to a marked overall shift in the current irrigation demand pattern towards the latter part of the water year.

Under these rules, the available supplies are shared between water users proportionally to the volume of unused entitlement, after high priority water needs for the start of the next water year, and essential water needs for the current water year, such as drinking water, are addressed.

2.1.1 Activation of the rules

For each sub-scheme, activation of these critical water supply water sharing rules must be decided by the ROL holder as soon as practicable after 1 July on the basis of the third quarter meter readings and usage assessments as follows:

- The ROL holder must assess the amount of available supply for the remainder of the water year after making the normal provisions under the announced allocation rules for high priority supply into the next water year and losses.
- The ROL holder must assess the amount of unused entitlement.
- If the unused entitlement is more than 5% greater than the available supply, the ROL holder must activate the rules given in Section 2.1.3.

2.1.2 End of the rules

The ROL holder must end the critical water sharing rules activated under Section 2.1.1 in a sub-scheme and resume normal announced allocation procedures:

- If the announced allocation for medium and Medium A priority allocation increases; or
- At the end of the water year.

An announced allocation increase confirms that the supply availability has been restored to a safe condition for the remainder of the water year.

2.1.3 Critical water sharing rules for 1 July to 30 September

If these rules are activated under Section 2.1.1, the ROL holder must discontinue supply under the announced allocation arrangements and re-allocate the available supplies in the sub-scheme as follows:

- (a) Determine the essential water needs (refer to Section 2.1.4) for the remainder of the water year and allocate water in proportion to those needs up to the lesser of:
 - The total amount of available supply; or
 - 10% of the nominal high priority allocation in the sub-scheme; and
- (b) Allocate the remainder of the available supply in proportion to the unused individual entitlements as adjusted for any allocation made under (a) above.

While these rules are active, the ROL holder must regularly review the available supply and the unused entitlement.

If a review results in more than 10% additional water being available for supply than currently allocated under these rules, the ROL holder must proportionally allocate the additional water to the holders of unused entitlements when these rules were activated. Additional allocation should first address any allocation shortfall under (a) above.

An allocation under this section must not exceed an individual's entitlement at the time.

2.1.4 Essential water needs

For the purpose of this critical water supply water sharing rule, essential water needs must include that part of a town water supply required for essential services including drinking water and sanitation but excluding lawns and gardens. The ROL holder in conjunction with water allocation holders may establish additional essential purposes.

2.2 Critical water supply water sharing rules for high priority water allocations when announced allocation for medium and medium A priority water allocations are zero

The ROL holder may implement restrictions on the supply of high priority water in a sub-scheme provided:

- The announced allocation for both medium and medium A water allocations in the sub-scheme is zero;
- The restrictions are decided by the ROL holder in conjunction with high priority water allocation holders; and
- The objectives of the Water Resource Plan (WRP) are not compromised.

Factors that should be taken into account when deciding whether to implement restrictions, and the nature of those restrictions, include:

- The amount of water available in the system, and its distribution between each of the storages in each sub-scheme;
- The rules for releases of water from storages;
- The amount of high priority water allocation demand and its distribution, both spatially and temporally;
- The likely evaporative, transmission and other operational losses that may be incurred in delivering the water to water allocation holders;
- The circumstances and needs of individual high priority water allocation holders;

- The ability of individual high priority water allocation holders to modify their water demands; and
- The likelihood of further inflows in the short and medium term.

Restrictions that may be imposed may include, but are not limited to:

- An announced allocation, limiting the amount of water that may be supplied to high priority water allocation holders; and
- Limitations on the amount of high priority water allocation that may be supplied to an individual in a specific period (for example, maximum daily diversion rate, maximum weekly diversion rate in a particular month, maximum diversion to a particular date).

3 Transfer of water between water years

The ROL holder may develop and apply scheme practices for carry over and forward draw of water entitlements in accordance with the principles and rules in this section.

3.1 Principles for transfer of water between water years

The ROL holder must have regard to the following principles in developing and applying scheme practices for carry over and forward draw of water entitlements.

Carry over and forward draw practices must not have an adverse impact on the objectives of the WRP.

Entitlements must not be:

- Carried over from the current water year to any future year other than the next water year; or
- Brought forward from a future water year to the current water year, other than from the next water year.

The volume of an individual water entitlement carried over to the next water year must not exceed the unused portion of the entitlement at the end of the water year. The unused portion of an entitlement must not exceed the amount determined under section 2.1.3, if the critical water supply water sharing rules for 1 July to 30 September applied to the entitlement at the end of the water year.

The volume of individual water allocation brought forward to the current water year must not exceed the announced allocation volume for the allocation at the start of the next water year.

The ROL holder must apply such loss factors to carry over water as necessary to avoid:

- Adverse impacts on other water entitlement holders; and
- Adverse impacts on the objectives of the WRP.

The ROL holder must consider the effects of storage overflow on the volume of carry over.

3.2 Rules for transfer of water between water years

The following rules apply for the transfer of water between water years.

The total volume permitted to be brought forward to a water year for a sub-scheme must not exceed 10% of the total nominal allocation for that sub-scheme.

Forward draw to a water year must not be permitted prior to finalisation of the assessments for the activation of critical water supply water sharing rules for 1 July to 30 September given in Section 2.

The total volume permitted to be carried over to a water year for a sub-scheme must not exceed 10% of the total nominal allocation for that sub-scheme.

Carry over from the current water year to the next water year must not be permitted prior to finalisation of the assessments for the activation of critical water supply water sharing rules for 1 July to 30 September given in Section 2.

The ROL holder must not supply water carried over from the previous water year that was unused:

- At 1 November; or
- For the upper sub-scheme, at the time an overflow of Moura Weir commences; or
- For the lower sub-scheme, at the time an overflow of Neville Hewitt Weir commences.

3.3 End of water year minor adjustments

As an administrative arrangement to account for the timing of the end of water year metered use reading and for the operational convenience of water users, the ROL holder may, in addition to any carry over or forward draw permitted under Section 3.1 and Section 3.2, make minor carry over and forward draw adjustments to entitlements. For an individual, the adjustments must not exceed 2% of the individual entitlement at the end of the water year for which the meter reading applies, or 10 ML whichever is the lesser.

4 Seasonal water assignment rules

Under Section 146B of the Water Act the holder of a water allocation may enter into an arrangement for a seasonal assignment in relation to the allocation. However, the allocation holder may enter into the arrangement only with the consent of the ROL holder. The ROL holder may give consent only if the assignment is allowed under the seasonal water assignment rules in the ROP.

For the Dawson Valley Water Supply scheme, there are few specific rules given in the ROP. For example, volume limits for seasonal assignments within each sub-scheme are not specified. This approach allows the ROL holder greater flexibility to develop scheme practices for seasonal assignment in conjunction with the water users that suit the wide range of difficult supply circumstances specific to this system.

The ROL holder is required to report (refer Section 4.1.1 of Attachment 4.1G) on trends in seasonal assignment and evaluate whether seasonal assignment practices are impacting on supply for individual water users or groups of water users or impacting on the objectives of the WRP.

Chapter 8 of the ROP allows the chief executive to initiate changes to the seasonal assignment rules if considered necessary to protect the objectives of the WRP.

4.1 Principles for seasonal water assignment

The ROL holder must have regard to the following principles in developing scheme practices and for making decisions for consent of seasonal water assignment arrangements.

The effects of an individual seasonal assignment and the cumulative effects of successive or repeated seasonal assignments must not:

- Impact adversely on the WRP objectives;
- Impact adversely on the availability of water to other water users in any part of the scheme; or
- Subject waterholes to an increased potential for environmental harm.

The water under seasonal assignment may only be supplied from within the Dawson Valley Water Supply Scheme area.

4.2 Rules for seasonal water assignment

The following rules apply in developing scheme practices and for making decisions for consent of seasonal water assignment arrangements.

Water supplied under a seasonal water assignment may be used for any purpose.

Seasonal assignment of a water allocation with a specified purpose of ‘distribution loss’ is not permitted.

The net amount of seasonal water assignment between the upper Dawson sub-scheme and the lower Dawson sub-scheme must not exceed the limits given in Table 1.

Table 1: Permitted net amount of seasonal water assignment between sub-schemes

Upper Dawson sub scheme to lower Dawson sub-scheme (ML)	Lower Dawson sub-scheme to upper Dawson sub-scheme (ML)
200	0

5 Definition of parameters

AAM = Announced allocation percentage medium priority

The percentage of the nominal volume for a medium priority water allocation that may be supplied for the current water year in a sub-scheme.

AAMA = Announced allocation percentage medium A priority

The percentage of the nominal volume for a medium A priority water allocation that may be supplied for the current water year in a sub-scheme.

MPA = Medium priority water allocations

The volume of medium priority water allocations in a sub-scheme.

MAPA = Medium A priority water allocations

The volume of medium A priority water allocations in a sub-scheme.

HPA = High priority allocations

The volume of high priority water allocations in a sub-scheme.

USE = Total volume of water taken

The volume of water taken in a sub-scheme in the current water year up to the time of the assessment of the announced allocation (excluding any water taken in the current water year that had been carried over).

UV = Useable volume

UV is determined by summing the useable volume of each of the storages included in the assessment of the announced allocation, as per the following equations:

$$UV = \text{sum}(UV_{\text{storage}})$$

$$UV_{\text{storage}} = CV - DSV - SL$$

$$UV_{\text{storage}} = 0 \text{ if } CV - DSV - SL \text{ is less than zero}$$

Where:

UV_{storage} is the useable volume of each storage.

CV is the current volume of the storage.

DSV is the dead storage volume of the storage.

SL is the storage losses.

For the purpose of assessment of the announced allocations, the volumes of Glebe Weir, Gylanda Weir, Theodore Weir, Moura offstream storage, and Moura Weir are included in the calculation for the upper sub-scheme, while the volume of Neville Hewitt Weir is included in the calculation for the lower sub-scheme. The volume of Orange Creek Weir is ignored in the calculation.

SL = Storage losses

SL is the projected storage losses from the storages for the remainder of the water year.

The storage loss depths to be used for each storage are given in Table 2. The value next to the current month is multiplied by the current surface area of the storage. The storage loss for each storage is determined and then summed to give the total storage loss.

Table 2: Projected storage losses for each storage

Month in which announced allocation is calculated	Upper sub-scheme storage loss (mm)	Lower sub-scheme storage loss (mm)
October	990	990
November	990	990
December	990	990
January	990	990
February	990	990
March	815	815
April	645	645
May	515	515
June	420	420
July	340	340
August	255	255
September	145	145

IN = Inflow

IN is the allowance for inflows used in the calculation of the announced allocation. The inflows to be used are given in Table 3. The value which must be used for inflows is the value in the table for the month in which the calculation is undertaken.

Table 3: Inflow allowances

Month in which announced allocation is calculated	Upper sub-scheme inflows (ML)	Lower sub-scheme inflows (ML)
October	2,500	700
November	1,555	432
December	1,447	432
January	1,379	47
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0

RE = Reserve

RE is the storage volume set aside for supply and associated losses in future water years. The reserve volumes for calculating the announced allocations are given in Table 4. The value for the current month at the time of the calculation is the value used.

Table 4: Reserve volumes

Month in which announced allocation is calculated	Upper sub-scheme reserve (ML)	Lower sub-scheme reserve (ML)
October	2,500	700
November	1,555	432
December	1,447	432
January	1,379	47
February	4,000	1,500
March	4,000	1,500
April	4,000	1,500
May	4,000	1,500
June	4,000	1,500
July	4,000	1,500
August	4,000	1,500
September	4,000	1,500

TOL = Transmission and operational losses

TOL is an allowance for river transmission and operational losses expected to occur in running the system from the date of the announced allocation assessment to the end of the current water year. TOL varies with the announced allocation for medium priority water allocations.

TOL are calculated using the formula below. Values for TOL1 and TOL2 are given in Tables 5 and 6. TOL1 and TOL2 are to be linearly interpolated for intermediate values of medium priority announced allocation.

Upper sub-scheme

$$\text{TOL} = \text{TOL1} * \frac{[\text{MPA} + \text{MAPA} + \text{HPA} - \text{USE}]}{\text{MPA} + \text{MAPA} + \text{HPA}}$$

Lower sub-scheme

$$\text{TOL} = \text{TOL2} * \frac{[\text{MPA} + \text{HPA} - \text{USE}]}{(\text{MPA} + \text{HPA})}$$

Table 5: TOL1 for upper sub-scheme

Upper sub-scheme transmission and operational loss (ML)				
At 0% AAm	At 10% AAm	At 50% AAm	At 80% AAm	At 100% AAm
250	550	1300	1700	1850

Table 6: TOL2 for lower sub-scheme

Lower sub-scheme transmission and operational loss allowance (ML)		
At 0% AAm	At 60% AAm	At 100% AAm
100	400	550

VIWY = Net total volume of unused water allocation transferred into the current water year from the previous water year

VIWY is the net total volume of unused water allocation that is transferred into a water year from the previous water year, taking into account:

- The volume of water carried over to the current water year from the previous water year;
- The volume of water brought forward from the current water year to the previous water year; and
- The volume of water carried over to the current water year that had been supplied in the current water year as at the date of the assessment of the announced allocation.

Attachment 4.1G

Dawson Valley Water Supply Scheme Monitoring program

1 Water quantity

1.1 Height and stream flow

The Resource Operations Licence (ROL) holder must record height and flow data in accordance with Table 1.

Table 1: Locations in the Dawson River where height and flow data is required

Location	Height data	Flow data
Glebe Weir inflow		✓
Glebe Weir storage	✓	
Glebe Weir outflow		✓
Gyranda Weir inflow		✓
Gyranda Weir storage	✓	
Gyranda Weir outflow		✓
Theodore Weir inflow		✓
Theodore Weir storage	✓	
Theodore Weir outflow		✓
Moura Weir inflow		✓
Moura Weir storage	✓	
Moura Weir outflow		✓
Neville Hewitt Weir inflow		✓
Neville Hewitt Weir storage	✓	
Neville Hewitt Weir outflow		✓

It is preferred that continuous time series data be collected. However, the chief executive may approve the collection of data in a format and standard other than for continuous time series data.

The methodology for determining height and flow data, including data format and standard, must be approved by the chief executive.

1.1a Operating level of storages

The ROL holder must record for Glebe Weir, Gyranda Weir, Theodore Weir, Moura Weir and Neville Hewitt Weir:

- The daily storage height; and
- The daily storage outflow.

For the purposes of this section:

- The methodology for determining the daily storage height and daily storage outflow must be approved by the chief executive; and
- The data must be real time information upon which operational decisions were based – not data that has subsequently changed for example through a verification process.

1.1b Stream flow for the purpose of first post-winter flow management strategies

The ROL holder must record for each storage where a first post-winter flow management strategy applies under Section 4 of Attachment 4.1E:

- The storage inflow;
- The storage height; and
- The storage outflow.

For the purposes of this section:

- The methodology for determining the storage inflow, storage height and storage outflow must be approved by the chief executive;
- The storage inflow, storage height and storage outflow are only required to be recorded for the duration of the implementation of the first post-winter flow management strategy; and
- The data must be real time information upon which operational decisions for the implementation of the strategy were based – not data that has subsequently changed for example through a verification process.

1.1c Stream flow for the purpose of seasonal base flow management strategies

The ROL holder must record for each storage where a seasonal base flow management strategy applies under Section 5 of Attachment 4.1E:

- The daily storage inflow volume;
- The daily storage inflow volume adopted for the purpose of determining passing flow requirements under the rules for the seasonal base flow management strategy. That is, the inflow volume after any adjustment to account for water released from an upstream storage for maintaining storage heights or to supply water users, in accordance with the seasonal base flow rules;
- The daily storage height; and
- The daily storage outflow.

For the purposes of this section:

- The methodology for determining the daily storage inflow volume, daily storage inflow volume adopted for the purpose of determining passing flow requirements, daily storage height and daily storage outflow must be approved by the chief executive; and
- The data must be real time information upon which operational decisions for the implementation of the strategy were based – not data that has subsequently changed for example through a verification process.

1.2 Releases from storages

The ROL holder must record details of the basis for each release decision for each storage under the rules for releases of water from storages given in Section 3 of Attachment 4.1E, including:

- The general rules for releases;
- The release rate rules;
- The first post-winter flow, seasonal base flow and fishway management strategies; and
- The quality of water released from storages.

The ROL holder must record the time, date and release rate each time a release rate is changed for each storage. In addition, for storages with a multi-level inlet, the ROL holder must record the level from which the release is made and the basis of the decision for determining that level.

The ROL holder must record the daily volume released (through the outlet/s and fishway) from each storage.

1.3 Announced allocations

The ROL holder must record details of announced allocation determinations, referred to in Section 1 of Attachment 4.1F, including:

- The date and value for announced allocations, including the initial and any interim announced allocations; and
- The parameters applied for each announced allocation determination, including the initial and any interim announced allocations.

1.4 Critical water supply water sharing rules for 1 July to 30 September

The ROL holder must record details of any limitations on the supply of water between 1 July and 30 September under the critical water supply water sharing rules in Section 2.1 of Attachment 4.1F, including:

- The date and extent of any volume limitations; and
- The parameters applied for the determination of any volume limitation.

1.5 Critical water supply water sharing rules for the supply of high priority water when medium A announced allocations are zero

The ROL holder must record details of any restrictions on the supply of high priority water referred to in Section 2.2 of Attachment 4.1F, including:

- The date of the restriction;
- The nature of the restriction; and
- The basis for the determination of the restriction.

1.6 Transfer of water between water years

The ROL holder must record details of the transfer of water between water years referred to in Section 3 of Attachment 4.1F, including:

- Scheme practices applied for carry over and forward draw of water entitlements;
- The basis of each decision to adjust the amount of water an individual may be supplied in a water year and the volume of the adjustment;
- The basis of each decision to approve a carry over or forward draw for each individual water user;
- The volume of water carried over from a water year to the next water year by sub-scheme; and
- The volume of water brought forward from the next water year to a water year by priority group and sub-scheme.

1.7 Seasonal water assignment

The ROL holder must record details of individual seasonal water assignment arrangements.

1.8 Water taken by water users

The ROL holder must record the volume of water taken by water users as follows:

- For each individual water user specified for each zone:
 - The total volume of supplemented water taken each quarter;
 - The total volume of supplemented water entitled to be taken at any time;
 - The basis for determining the total volume of supplemented water entitled to be taken at any time, including any adjustments for approved seasonal water assignments and transfers into or out of the water years;
 - The total volume of metered water taken as ‘riparian entitlement water’; and
 - The zone.

Water taken under a water allocation with purpose ‘distribution loss’ should be recorded as an individual water user.

1.9 Water diversions

The ROL holder must record the daily volume of water diverted to:

- Gibber Gunyah channel system;
- Theodore channel system; and
- Moura Offstream Storage.

The methodology for determining the volume must be approved by the chief executive.

The ROL holder must record the start and end of each period of diversion to Moura Offstream Storage.

1.10 Waterholes

The ROL holder must:

- Establish a unique identifier for any waterhole from which supplemented water is taken that is drawn down more than 0.6 metres below cease to flow level; and
- Record the water level in the waterhole each day that supplemented water is taken from the waterhole and the water level is more than 0.6 metres below the cease to flow level.

2 Impact of storage operation on aquatic ecosystems

The ROL holder must undertake the following to establish any impacts on aquatic ecosystems that are potentially related to the operation of storages.

Section 2.1 Bank condition

The ROL holder must inspect banks for evidence of collapse and/or erosion within the ponded area and downstream of storages following instances of rapid water level changes or large flows through storages, or other occasions when collapse and/or erosion of banks may be likely. The distance downstream is the distance of influence of storage operations.

Any instances of bank slumping or erosion observed must be investigated to determine if the instability was associated with the nature or operation of the infrastructure.

2.2 Water Quality

The ROL holder must monitor water quality in relation to relevant infrastructure in accordance with the department's Water Monitoring Data Collection Standard.

2.3 This section not required

2.4 Fish stranding

The ROL holder must investigate instances of fish stranding downstream of storages to determine if the fish stranding is associated with operation of infrastructure. The distance downstream of storages is the distance of influence of storage operations.

3 Reporting

There are four levels of reporting for ROL holders:

- Quarterly report for the previous quarter;
- Annual report for the previous water year;
- Operational reports; and
- Emergency reports.

3.1 Quarterly report

The ROL holder must transfer the following data to the chief executive:

- Water quantity – all records referred to in Sections 1.1a and 1.1c;
- Release from storages – where applicable, the level from which releases were made referred to in Section 1.2;
- Water diversions – daily volume of water diverted to Moura Offstream storage and the start and end of each period of diversion to Moura Offstream storage referred to in Section 1.9;
- Waterholes – all records referred to in Section 1.10;
- A summary of bank condition monitoring and incidences of slumping referred to in Section 2.1;
- Water quality – all records referred to in Section 2.2; and
- Seasonal water assignments – all records referred to in section 1.7.

3.2 Annual report

The annual report must include, but not be limited to, discussion and recommendations with regard to monitoring and assessment for the previous water year as follows.

3.2.1 Water monitoring

A summary of the implementation of the rules for releases from storages, other than for first post-winter flow, seasonal base flow, fishway management and quality of water released.

A summary of the implementation of the first post-winter flow and seasonal base flow management strategies for each applicable storage, including:

- Overview of strategy implementation, including the basis of decisions; and
- An evaluation of the first post-winter flow and seasonal base flow management arrangements and outcomes.

A summary of the implementation of the fishway management strategy for each applicable storage, including:

- Overview of strategy implementation;
- Periods of operation of the fishway; and
- Total period of operation of the fishway.

A summary of the implementation of the quality of water released from storages rules for each applicable storage, including:

- Overview of rule implementation;
- Basis of the decisions on the level from which to make releases; and
- Periods of release from each offtake level.

A summary of waterhole management including:

- Overview of waterhole management implementation; and
- Periods when the water level in a waterhole was more than 0.6 metres below its cease to flow level for more than 2 consecutive days and supplemented water was being taken.

A summary of announced allocation determinations, including:

- An evaluation of the announced allocation procedures and outcomes; and
- The date and value for each announced allocation.

A summary of the critical water supply water sharing rules, including:

- An evaluation of the rules and outcomes; and
- The date and nature of any limitations or restrictions on the volumes that may be supplied.

A summary of the transfer of water between water years specified by sub-scheme, including:

- An evaluation of rules and outcomes;
- The total volume of water carried over to the water year from the previous water year;
- The total volume of water carried over from the water year to the next water year;
- The total volume of water brought forward by priority group to the water year from the next water year; and
- The total volume of water brought forward by priority group from the water year to the previous water year.

A summary of the volumes of water taken by water users, specified by zone, including:

- The total volume of supplemented water taken;
- The total volume of supplemented water entitled to be taken;
- The basis for determining the total volume of supplemented water entitled to be taken, including any adjustments for approved seasonal water assignments and transfers into or out of the water years;
- The announced allocation volume at the end of the water year;
- The total volume of supplemented water taken between 1 July to 30 September; and

- The total volume of metered water taken as ‘riparian entitlement water’.

A summary of seasonal water assignment arrangements, including:

- An evaluation of the seasonal water assignment rules and outcomes, including:
 - An evaluation of any circumstances of supply difficulties when the supply difficulties were linked to seasonal water assignment practices; and
 - Identification of and reporting on any trends in seasonal assignment;
- The total number of seasonal water assignment arrangements; and
- The total volume of water seasonally assigned.

Details of changes to storages or their operation that may have an impact on the implementation of the ROP.

Details of new monitoring devices such as equipment to measure stream flow.

3.2.2 Impact of storage operation on aquatic ecosystems

Bank condition and fish stranding

A summary of bank condition and fish stranding monitoring including:

- Results of investigations of bank slumping or erosion identified in ponded areas and downstream of storages;
- Results of any investigations of fish stranding downstream of storages; and
- Changes to operation of storages to reduce instances of bank slumping, erosion or fish stranding.

Water quality

Discussion and assessment of the following water quality issues:

- Thermal and chemical stratification in each storage;
- Water quality in each storage;
- Contribution of the storage and its management to the quality of water released;
- Cumulative effect of successive storages on water quality; and
- Cyanobacteria population changes in response to stratification in each storage.

3.3 Operational reports

The ROL holder must notify the chief executive within 1 business day of becoming aware of the following operational incidents:

- Noncompliance by the ROL holder with the rules given in the ROP;
- A decision relating to each announced allocation;
- A decision to limit the supply of water between 1 July and 30 September;
- A decision relating to any restrictions on the taking of high priority water; and
- Instances of fish stranding downstream of a storage.

The ROL holder must provide an operational report to the chief executive for the following operational incidents:

- Noncompliance with the rules in the ROP; and
- Instances of fish stranding downstream of a storage.

The report must provide details of the incident, conditions under which the incident occurred and any responses or activities carried out as a result of the incident.

The ROL holder must provide an operational report to the chief executive within 5 business days after a decision relating to each announced allocation. The report should include the parameters applied referred to in Section 1.3.

The ROL holder must provide an operational report to the chief executive within 5 business days after a decision to limit the supply of water between 1 July and 30 September. The report should include the parameters applied referred to in Section 1.4.

The ROL holder must provide a report to the chief executive within 5 business days after implementation of a first post-winter flow management strategy ends. The report should include:

- Storage inflow, storage height and storage outflow records referred to in Section 1.1b.

3.4 Emergency report

An emergency for the purpose of this ROP includes an occurrence, which by the nature of its severity, extent or timing might be regarded as an emergency (for example, contamination of water supply, structural damage to infrastructure or a danger to human health).

For any emergency, the ROL holder must:

- Notify the chief executive immediately; and
- Provide a report to the chief executive on the emergency including details of the emergency, conditions under which the emergency occurred, any responses or activities carried out as a result of the emergency and any impacts on the ROP.

Attachment 4.1H

Dawson Valley Water Supply Scheme

Water allocation change rules

1 Permitted changes

The permitted changes apply only to water allocations with purpose ‘agriculture’ or ‘any’.

Application for the following changes to a water allocation will be approved. On approval, a change certificate will be issued by the chief executive, which may be lodged with the registrar of water allocations.

1.1 Location

Subject to Section 1.1.1, a change to the location of a water allocation from one of the following zones to any other of those zones:

- Dawson B;
- Dawson C;
- Dawson D.
- Dawson E;
- Dawson F;
- Dawson G;
- Dawson H;
- Dawson I;
- Dawson J;
- Dawson K;
- Dawson L; or
- Dawson M.

For the permitted changes to the location of a water allocation given in this section, conversion factors do not apply to the volume for the water allocation – that is, the volume for the water allocation will be the same before and after the change of location. However, this does not preclude consideration of conversion factors to enable changes under Section 3.

1.1.1 Limitations on change of location

A proposed change is not a permitted change if the proposed change would result in a distribution of medium and high priority water allocations not provided for in Tables 1, 2, 3 and 4 (see Section 3 for proposed changes that can be processed under Section 130 of the Water Act).

If a location for a medium A priority water allocation is changed from Dawson I to another location, at the time the change of location is approved, the priority group will be set as medium.

1.2 Purpose

A change to the purpose of a water allocation from ‘any’ to ‘agriculture’ or from ‘agriculture’ to ‘any’.

1.3 Priority group

A change to the priority group of a water allocation from medium priority to medium A priority if the zone specified for the water allocation is Dawson I, provided:

- The proposed change would not cause the maximum volume in Table 4 to be breached.

1.4 Amalgamation or subdivision

A change to subdivide a water allocation provided:

- The sum of the nominal volumes of the new water allocations is equal to the nominal volume of the water allocation that is being subdivided; and
- The location and priority group of the new water allocations is the same as that of the water allocation that is being subdivided.

A change to amalgamate water allocations provided:

- The nominal volume of the new water allocation is equal to the sum of the nominal volumes of the water allocations that are being amalgamated;
- The location and priority group of the water allocations that are being amalgamated are the same; and
- The location and priority group for the new water allocation is the same as that of the water allocations that are being amalgamated.

Table 1: Permitted distributions of high priority water allocations in zones Dawson M, L, K, J, I, H, G, F, E, D, C and B

Volume of high priority water allocation (ML)	Dawson M & Dawson L	Dawson K & Dawson J	Dawson I & Dawson H	Dawson G, Dawson F & Dawson E	Dawson D, Dawson C & Dawson B
Minimum volume	0	200	662	3,119	998
Maximum volume	0	600	1,060	3,519	998

Table 2: Permitted distributions of medium (including medium A) priority water allocations and interim water allocations in zones Dawson M, L, K, J, I, H, G, F, E, D, C and B

Volume of medium priority water allocation (ML)	Dawson M & Dawson L	Dawson K & Dawson J	Dawson I & Dawson H	Dawson G, Dawson F & Dawson E	Dawson D, Dawson C & Dawson B
Minimum volume	560	6,350	25,500	9,450	6,838
Maximum volume	1,760	9,850	30,500	14,450	8,838

Table 3: Maximum volumes of medium and high priority water allocations in specified zones

Location (Zone)	Volume of high priority water allocation (ML)		Volume of medium priority water allocation (ML)	
	Volume on ROP approval	Maximum volume	Volume on ROP approval	Maximum volume
Dawson C	0	0	1,892	1,942
Dawson B	350	350	683	733

Table 4: Minimum and maximum volumes of medium A priority water allocations in Zone Dawson I

Location	Volume of medium A priority water allocation (ML)		
	Volume on ROP approval	Minimum volume	Maximum volume
Dawson I	19,456	3,405	19,456

2 Prohibited changes

The following changes are prohibited changes:

2.1 Location

A change to a location that is not within the extent of the Dawson Valley, Nogoia Mackenzie, Lower Fitzroy or Fitzroy Barrage water supply scheme.

2.2 Priority group

A change to a priority group that is not medium, medium A or high.

2.3 Purpose

A change to a purpose that is not 'agriculture' or 'any'.

2.4 Volume

A change to the volume that is not a consequence of a change to another attribute of a water allocation.

2.5 Other

A change that requires an amendment to this ROP, other than an amendment provided for in Chapter 8.

3 Application for change under Section 130 of the Water Act

If a water allocation holder wishes to apply for a change to a water allocation that is not permitted under Section 1, and not prohibited under Section 2, an application may be made under Section 130 of the Water Act for the change.

The chief executive will deal with applications made under Section 130 of the Water Act, in accordance with the Water Act. That process is as follows:

- Notice of the application is published in local newspapers. The notice includes information about where the application can be inspected and invites submissions from the public on the application;
- The chief executive determines if the application should be approved having regard to the potential impact on a range of interests including other entitlement holders and aquatic ecosystems;
- If the chief executive approves the application, the chief executive will issue a change certificate that may be lodged with the registrar of water allocations; and
- If the chief executive refuses the application, the Water Act provides for an appeal process.

3.1 Purpose

Any application to change the purpose of a water allocation from 'distribution loss' to 'any' must be supported by information to substantiate to the satisfaction of the chief executive an efficiency gain within the associated channel system. An application may be made for efficiency gains made since the issue of the interim resource operations licence for the Dawson Valley Water Supply Scheme in November 2000.

4 Registration of change

If an application to change a water allocation is approved, the chief executive will issue a change certificate. The water allocation holder may lodge the change certificate with the registrar of water allocations who will change the water allocation on the water allocation register.

However, the registrar will not register the change until a supply contract has been entered into between the water allocation holder and the ROL holder for supply of the changed water allocation.

Attachment 4.11

Dawson Valley Water Supply Scheme

Amending critical water supply management arrangements

1 Critical water supply management arrangements

1.1 Introduction

The Resource Operations Plan (ROP) rules for infrastructure operation and environmental management (refer Attachment 4.1E) and for water sharing (refer Attachment 4.1F) include arrangements for dealing with periods of low water availability. These arrangements are referred to as the critical water supply management arrangements.

The critical water supply management arrangements initially specified in the ROP are based on broad-scale basin-wide hydrologic modelling. These initial arrangements may need to be refined and further developed to ensure the arrangements appropriately deal with local issues and circumstances particular to the Dawson Valley Water Supply Scheme.

Over time the arrangements can also be amended to allow adaptation to changing circumstances and refinement through improved knowledge about the operation of the system at times of low water supply.

For example, the critical water supply water sharing rules given in Attachment 4.1F deal with situations when the full announced allocation entitlements cannot be supplied as a consequence of a substantial failure of a wet season. The initial arrangements for sharing the available supplies, including securing supplies for essential needs, may warrant ongoing development.

Variations to the rules associated with the minimum operating levels for storages and to the waterhole drawdown limits given in Attachment 4.1E may also be considered to accommodate local water user and environmental needs under particular circumstances.

1.2 Criteria for critical water supply management arrangements

Critical water supply management arrangements must have regard to the following:

- Provision of water for essential water needs must have first priority;
- The objectives of the Water Resource Plan;
- The effects on water allocation security performance;
- The effects on natural ecosystems and the physical integrity of the watercourse; and
- The public interest.

For the purpose of the critical water supply management arrangements, essential water needs must include that part of a town water supply required for essential services including drinking water and sanitation but excluding lawns and gardens. The Resource Operations Licence (ROL) holder in conjunction with water allocation holders may establish additional essential purposes.

1.3 Initial review of the critical water supply management arrangements

The ROL holder must undertake an initial review of the suitability of the critical water supply management arrangements. A report on the initial review must be provided to the chief executive within 6 months of the commencement of the ROP.

The initial review must include recommendations on whether amendments to the arrangements should be considered.

1.4 Proposals to amend the critical water supply management arrangements

The ROL holder may submit a proposal to amend the critical water supply management arrangements at any time.

The chief executive may require the ROL holder to prepare a proposal to amend the critical water supply management arrangements at any time.

If the initial review of the critical water supply management arrangements under Section 1.3 indicates changes to the arrangements should be considered, the chief executive may require the ROL holder to prepare a proposal to amend the critical water supply management arrangements within a timeframe set by the chief executive.

A proposal to amend the critical water supply management arrangements must include:

- Proposed changes to the rules for infrastructure operation and environmental management (refer Attachment 4.1E) and for water sharing (refer Attachment 4.1F);
- An assessment of the effects of the proposal on natural ecosystems and the physical integrity of the watercourse and the proposed environmental monitoring requirements;
- Details of consultation with stakeholders including water users, local communities and environmental interests; and
- Any other information that will assist the chief executive to decide the proposal.

1.5 Amending the critical water supply management arrangements

The chief executive may amend the rules for infrastructure operation and environmental management (refer Attachment 4.1E) and for water sharing (refer Attachment 4.1F) that apply during periods of low water availability. The chief executive will consider the following in deciding to amend the rules:

- Any proposal to amend the critical water supply management arrangements submitted by the ROL holder; and
- The criteria given in Section 1.2.

1.6 Evaluation of critical water supply management arrangements

The ROL holder must annually evaluate the critical water supply management arrangements in regard to their suitability for periods of low water availability.