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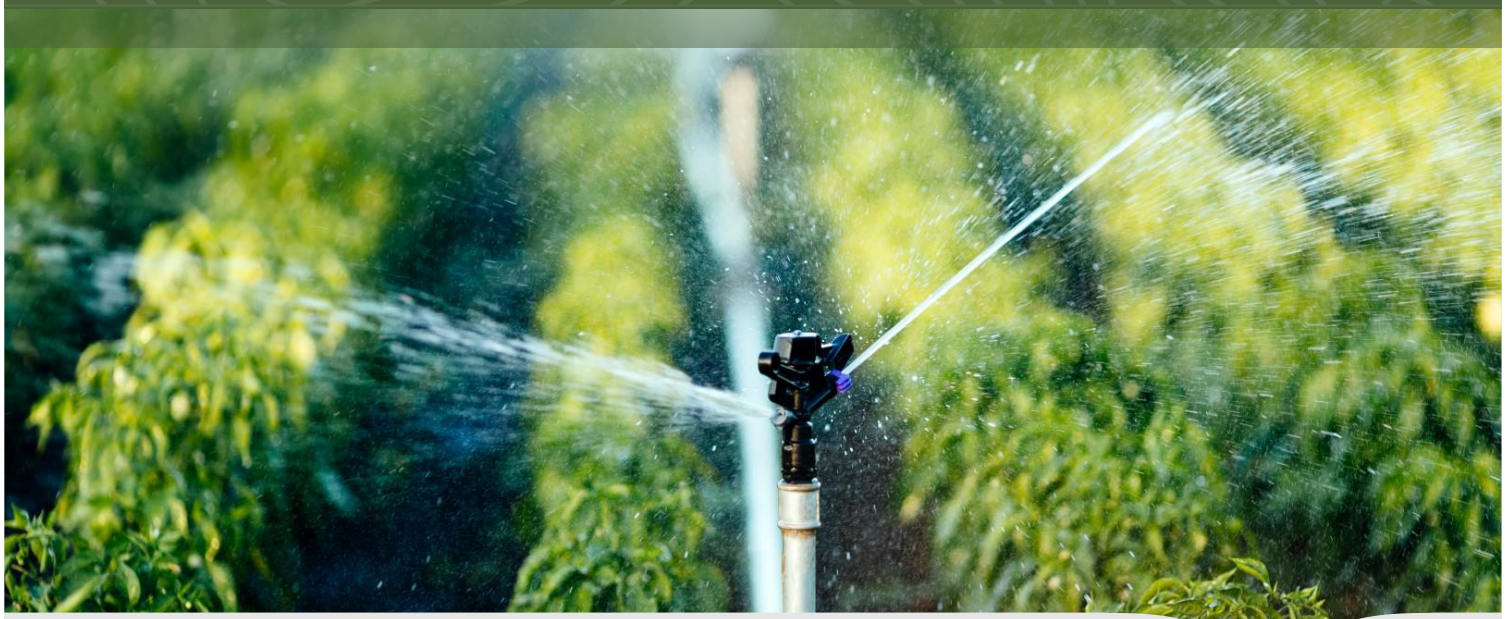

Strategic Water Infrastructure Reserve

Dawson River Pilot Project Review Report

September 2022

rdmw.qld.gov.au

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Executive summary

The Water Plan (Fitzroy Basin) 2011 (Fitzroy Basin Water Plan) reserves unallocated water for strategic water infrastructure within the Dawson, Connors and Fitzroy Rivers to enable the future development of infrastructure projects. Advancement and delivery of such projects are generally aligned with water demands from industry, town water supplies and agriculture but are often deferred in changing and challenging economic conditions. The *Water Act 2000* (Water Act) was amended to allow the temporary release of Strategic Water Infrastructure Reserve (SWIR) water for a maximum of three years where infrastructure projects have been deferred while ensuring these reserves remain available for strategic infrastructure projects in the future.

In 2019, a trial pilot project was launched releasing water from the Fitzroy Basin Water Plan reserved for strategic water infrastructure in the Dawson River to allow landholders to expand or diversify irrigation development and cropping activity. The Dawson Valley Water Management Area (DVWMA) was selected due to an increasing demand for water, and high under-utilisation of existing water entitlements.

The objectives of the pilot project were to provide ability for water users on the Dawson River to temporarily access committed water reserves under a water licence with the intent to support the existing suite of measures providing flexible water management that strengthens job creation and economic development and provide a short-term stimulus for the water trading market.

Altogether, 90,000 megalitres (ML) of unsupplemented water was made available. Of this available reserve, 69,500ML was granted to 12 licensees on 1 October 2019 for three years. The water licences were conditioned to ensure that unsupplemented water could only be taken under certain flow conditions with limitations on daily and annual maximum volumes to ensure existing entitlement holders were protected. Licences cannot be renewed, reinstated, relocated, amalgamated or subdivided and expire on 30 September 2022 with the water returning to the State.

The findings from the implementation of pilot project (during the SWIR licences have been in effect) and whether the objectives have been met is summarised below:

Water use

- Water taken under SWIR licences was less than the maximum allowable annual volume in all three years.
- The average unsupplemented water use in the DVWMA increased by 17%.
- The average supplemented water use in the Dawson Valley Water Supply Scheme (DVWSS) increased by 5%.

In summary, for the years that the SWIR licences have been in effect, the use of unsupplemented water in the DVWMA and the use of supplemented water use in the DVWSS have increased.

Water trading

- The number of permanent trades of unsupplemented surface water allocations in the DVWMA decreased by 78% and the volume of water traded decreased by 47%.
- The number of permanent trades of supplemented surface water allocations in the DVWSS decreased by 60% for the Medium Priority Group and increased by 4% for the Medium A Priority Group.
- The volume of water traded increased by 20% for the Medium Priority Group and decreased by 84% for the Medium A Priority Group.
- There were no major changes in seasonal assignments or volumes for unsupplemented or supplemented water allocations when compared to previous years.

Overall, the data shows that water trading decreased during the years that the SWIR licences have been in effect, and hence the outcome of stimulating the water market trade was not achieved through the pilot project. The review at this point is unable to determine whether the pilot project has achieved a long-term objective of stimulating the water market and further review will be required following the expiry of the SWIR licences.

Economic outcomes

- Based on aerial imagery, an increase in irrigation area of approximately 1,900 hectares (ha) has occurred for land attached to 11 SWIR licences. The majority of the increase in irrigation area (95%) of the 1,900ha has been undertaken by three SWIR licensees. The area of development was similar to the cumulative area proposed to be developed from submissions made during the release process.
- Data provided by Cotton Australia reports that the release of the SWIR contributed to an increase area of cotton production of 2,300ha, amounting to approximately 23,000 lint cotton bales extra per annum, worth approximately $16 million, along with $2 million worth of cotton seed.
- Analysis of available aerial imagery shows an increase in water storage infrastructure by 275ha during the pilot project.

Interestingly, the licensees that constructed the water storage infrastructure are not the same licensees that increased area under irrigation.

Initial indications by submitters proposed that the water released under the pilot project would support a wide range of agricultural crops production, including cotton, grains and cereals and small crops. Comparison of aerial imagery and data provided by Cotton Australia shows a similar increase in irrigation area with cotton representing the dominant agricultural crop grown. SWIR licensees report that in addition to increases in irrigated area, additional water security has allowed for double cropping opportunities that have provided greater economic outcomes. This has led to increased employment opportunities on farm and local industry which has further supported the local community.

It is recommended that any future release of strategic water reserves within the State adopt the following:

- Consider the short-term nature of the release with water only able to be released for up to three years and manage expectations regarding the longer-term access to this water by entitlement holders and the community.
- Review if the demand for new water cannot be met through full utilisation of existing water entitlements, increasing water efficiency and water trading.
- Review the current water trading market and establish if changes are required to trading rules that allow water users to utilise their existing water entitlements.
- Consider pricing structure of the water and release process (fixed-price or competitive) to ensure that existing water entitlements including supplemented water allocations are not unfairly disadvantaged.
- Consider that areas the water is made available should stimulate and enhance water trading markets.
- Ensure that any licence conditions, including maximum daily volumetric limits, are adhered to protect existing water allocations, security objectives and environmental flow objectives.
- Provide an avenue for stakeholders to raise concerns and address these (if appropriate) that may need further consideration for future releases.
- Consider the importance of strategic water reserved for future critical strategic infrastructure for Queensland and ensure that water plan reviews include reserves of unallocated water.

It should be noted that infrastructure projects utilising the SWIR in the Fitzroy Basin Water Plan are actively being considered, including Nathan Dam (as a supply option in the Southern/Darling Downs

Regional Water Assessment being undertaken by the Department of Regional Development, Manufacturing and Water (DRDMW)), as well as infrastructure projects to supply future urban water demands for Rockhampton, and water for future hydrogen production in Gladstone.

Strategic Water Infrastructure Reserve

Dawson River Pilot Project

We offered **90 000ML** of water a year for **temporary use**

69 500ML was granted to 12 licensees each year for 3 years

Volume (ML) used each water year (Oct–Sept)

2019/20	16 257
2020/21	21 930
2021/22 *(up to 30 April 2022)*	26 011

Changes to other water use

Average unsupplemented water use ↑17%

Average supplemented water use ↑5%

1900ha of additional irrigated cropping land

↑ in cropping frequency

↑ employment and investment

Permanent trades

of unsupplemented water ↓78%

Volume

of unsupplemented water permanently traded ↓47%

Contents

Appendices

1. Scope

This report evaluates the pilot project to establish the effectiveness of the project in achieving the objectives including strengthening job creation and economic development and providing a stimulus for the water trading market.

The report provides an overview of the legislative provisions that led to the development of the pilot project, including a review of the release process and the granting of water licences. Data collected and analysed during the term of the water licences including water usage, trading and on-property development has been included. Economic data including direct and indirect employment was provided by irrigators and major stakeholders within the local community.

Stakeholder and licensee feedback regarding the objectives of this pilot project are also included to evaluate its success.

2. Background

Queensland's water resources are fundamental for our economic, social, environmental, and cultural wellbeing and sustain the prosperity of our regional communities. The Department of Regional Development, Manufacturing and Water's (DRDMW) role as a water regulator is to ensure water is managed fairly and responsibly and to deliver sustainable, safe, secure and affordable water to all Queenslanders. The *Water Act 2000* (Water Act) and subordinate legislation, including water plans, govern how water resources are managed within Queensland.

Unallocated water is reserved under Queensland's water planning framework to enable short and long-term use for purposes such as town water supply, projects of regional significance, strategic infrastructure, and for projects that advance the social and economic aspirations of Indigenous people, without compromising the security of existing users or the environment.

Unallocated water held as Strategic Water Infrastructure Reserve (SWIR) under water plans facilitates the development of water infrastructure projects (such as new dams or weirs). Key drivers to develop such projects include water demand from existing and potential users, cost recovery of investment in associated infrastructure and generating long-term economic benefits at a local and state level. Until such infrastructure is constructed and commissioned, SWIR water is reserved within water plans and has remained unavailable to water users.

Increasing interest from stakeholders in accessing unallocated water reserves combined with the Queensland Government's ongoing commitment to flexible water management mechanisms prompted DRDMW to examine innovative ways to release water. Legislation was developed to enable SWIR water to be made temporarily available for use while still maintaining the ultimate intention of reserving this water for strategic water infrastructure.

This led to the trial pilot project of a SWIR release (water reserved for infrastructure on the Dawson River) in the Dawson Valley under the Fitzroy Basin Water Plan. This management area was selected due to an increasing demand for water, and high under-utilisation of existing water entitlements.

2.1 Regulatory framework

The Water Act provides a framework for the sustainable management of Queensland's water resources by establishing a system for the planning, allocation and use of water. Chapter 2, Part 2 of the Water Act provides for the planning for the sustainable management of Queensland's water through the preparation and implementation of water plans.

The Water Act provides the opportunity for the release of unallocated water if a volume is stated in a water plan or prescribed by regulation. Queensland has 22 water plan areas to balance the needs of water users (e.g. towns, agriculture and other industries) and the environment at a catchment level.

Underpinned by science and community consultation, water plans meet cultural, social, economic and environmental outcomes specific to the catchment.

Section 40A, 40B and 40C of the Water Act describes how the department may release unallocated water reserves while considering the outcomes and objectives of the relevant water plan. DRDMW administers the process for releasing unallocated water in accordance with Part 2, Division 2 of the *Water Regulation 2016* (Water Regulation) and a granted water licence must be for a term of no more than three years. The water licence cannot be renewed, reinstated, relocated, amalgamated or subdivided. Once a water licence of this nature expires or is surrendered, cancelled or repealed, the water made available under the licence returns to the State.

2.2 Intent of pilot project

The pilot project aligns with initiatives and opportunities outlined in the "2019-2020 Queensland bulk water opportunities statement (QBWOS)" with the identification that significant volumes of uncommitted, underutilised and unallocated water are currently available in Queensland that could be used for economic development.

The purpose of unallocated water held in the SWIR is to facilitate the development of particular water infrastructure projects (e.g. new dams) in the relevant water plan area. As the volume of water set aside in a SWIR for a plan area is determined as part of the hydrologic modelling that underpins plan development, the volume in the reserve will not adversely impact the water allocation security objectives, or the environmental flow objectives, of the plan.

The pilot project was intended to provide landholders with an incentive to expand or diversity irrigation areas, provide greater flexibility and opportunities for cropping frequencies. It made committed water reserves available within a water plan, under water licences, with the objective of stimulating the water trading market, strengthening job creation and stimulating economic development. Water licences were temporary (for a maximum of three years) to ensure that the water could be returned to the State to construct new strategic infrastructure or be utilised to facilitate the development of other key water projects.

2.3 History of the Dawson River Management Area

In 2006 the Queensland Government's Central Queensland Regional Water Supply Strategy identified Nathan Dam as the preferred water supply solution in the Dawson River sub catchment to provide water security to mining, electricity generation, urban and agriculture in the Surat Basin and the Dawson Callide sub-region.

Sunwater Limited's (Sunwater) Nathan Dam and Pipelines project (Nathan Dam Project) was declared a coordinated project on 2 May 2008. The Coordinator-General's evaluation report on the Environmental Impact Statement for the Nathan Dam Project (EIS evaluation report) was published on 31 May 2017 and lapsed on 1 June 2021, as construction of the project had not substantially started within four years of the report being published. The EIS evaluation report stated that the Nathan Dam Project's delivery timeframes were contingent largely based upon water demands from new mining customers within the Surat Basin.

Previous stakeholder engagement and requests from existing water users to access additional water within the Dawson River sub catchment provided the opportunity for a pilot project to be developed to make SWIR water associated with Nathan Dam available for temporary use.

Existing water users can access water within the via unsupplemented water allocations and supplemented water allocations via the DVWSS. Water use is primarily associated with the irrigation of agriculture crops and commodities including cotton, fodder, cereal and horticultural crops. Water is also taken for urban water supply for the townships of Theodore, Moura, Baralaba and Duaringa, and industrial uses, principally for mining.

Unsupplemented water allocation holders may take water as described under the water sharing rules for the DVWMA as defined under the Fitzroy Basin Water Plan Area Water Management Protocol (June 2021). Limitations exist on water taken when flow threshold conditions are triggered at various

flow management locations. Water taken under unsupplemented water allocations is generally pumped/transferred into on-farm storages for later application.

The DVWSS includes water infrastructure such as weirs and off-stream storages and distribution channels along the Dawson River. Supplemented water allocation holders are advised by Sunwater prior to the water year (Oct -Sept), an announced allocation for the commencement of the following water year. This provides a degree of water security that allows water users to plan for their own enterprises. Announced allocations can be increased up to 100% as a result of inflows during a water year.

2.4 Stakeholder engagement – initial demand

Initial stakeholder engagement was undertaken in November 2018 through a telephone survey with unsupplemented and supplemented water allocation holders to determine their short-term water demands and interest in participating in the pilot project. Of the surveyed participants, 102 showed an initial interest in the pilot project to access temporary water to support their short-term water needs. Responses were generally aligned to the following themes:

- Ability to access temporary water was seen to complement other water entitlements.
- A known demand exists for additional water (even if temporary) to provide stimulus for economic investment decisions.
- Price of water was considered an important criterion for decision making by water users.
- Temporary access product has limitations on the term and the ability to undertake certain future dealings as well as being subject to opportunistic take.

The existing water sharing rules within the DVWMA could be improved to provide greater confidence and flexibility in accessing water to support investment decisions to further develop irrigation areas and associated infrastructure. This would also lead to further interest and water taken under a pilot project.

Thirty-nine responded that they did not require additional water due to the following reasons: stock and domestic use only, supplemented water use only, and no infrastructure in place to be able to take advantage of additional water. Contact could not be made with 28 allocation holders.

An expression of interest (EOI) form was sent out to allocation holders who showed an initial interest in the pilot project with 20 EOI’s received. Based on the level of demand and interest from irrigators, a decision was made to continue with the proposed pilot project.

A targeted face-to-face consultation meeting was held in Theodore with interested parties on 23 January 2019. A total of 11 stakeholders attended. Below summarises the general matters raised by attendees and responses provided to the impending release process.

Table 1: General matters raised by attendees at meeting in Theodore on 23 January 2019

Matter Raised	Response
Three-year term	As the term of the SWIR release is legislated under the Water Act to a maximum of three years, there is no provision for a water licence to be granted for a longer period. Licences cannot be renewed, reinstated, relocated, amalgamated or subdivided.
Effect on downstream users	The irrigators gave an example of a low flow event from Cracow that triggered a 30 cumec flow for one day and only benefited one zone. Modelling has been undertaken and this issue has been considered in the assessment for the release and the development of the product specification.
Effect on Announced Allocations	The distribution channel irrigators and Theodore Water had concerns that the take of new water harvesting water would affect any potential increase over the water year of their announced allocations. This issue has been considered in assessment for the release.
Expiry of licences	The irrigators preferred that all the proposed water licences expired at the same time. This has been considered with a three-year term proposed to start at the beginning of the 2019/2020 water year and expire at the end of the 2021/2022 water year.

Consultation with key stakeholders including the then Minister for Natural Resources, Mines and Energy, Sunwater, Theodore Water, the then Department of State Development, Manufacturing and Infrastructure Planning, the Department of Agriculture and Fisheries, AgForce and the Queensland Farmers Federation was undertaken ahead of the decision to release SWIR.

Further targeted consultation was held with various stakeholders including Sunwater as the proponent for the Nathan Dam and Pipeline Project and the Resources Operations Licence (ROL) Holder within the DVWSS. A meeting was held with Sunwater representatives on 14 February 2019 where they provided support for the pilot project and proposed release. Sunwater confirmed that if Nathan Dam or any other infrastructure were to be developed, it would not impact on the three-year term of the proposed water licences.

A follow-up consultation with stakeholders and irrigators was undertaken via face-to-face meetings held in Moura, Theodore and Taroom on 13 and 14 March 2019. A total of 33 attendees across the three locations were presented with further information relating to the process for the release (proposed timeframes), the volume of water that would be recommended for release (90,000ML nominal volume), proposed eligibility requirements and proposed product specifications and conditions.

3 Pilot implementation

3.1 Release process

In March 2019, the pilot project release process was initiated via publication of a notice of sale. Submissions were invited from individuals or companies for a minimum and maximum water volume in accordance with the document ‘Release of unallocated water for temporary access to strategic water infrastructure reserve Terms of Sale – March 2019’ (Terms of Sale). The closing date for the submissions was 10 May 2019.

The details for the water licence parameters and products being made available were described in Schedule 1 (Water Availability Details) of the Terms of Sale. Table 2 shows the key water availability and price parameters as offered under the Terms of Sale.

A total of 15 submissions were received, with the sum of the maximum volumes requested via submitters being 87,000ML (lower than the total nominal entitlement release of 90,000ML). Submitters stated that the water would be used to develop an additional 3,000 hectares of irrigated agriculture (predominantly cotton and horticulture) and to increase water security for their existing irrigation practices. Water uses proposed included irrigation of cotton, grains and pulses, hay and pastures for beef cattle.

Key water availability and price parameters for the Dawson SWIR release process

Key water availability parameters:

- take of water from Dawson River from Utopia Downs G.S to Junction with Fitzroy River
- total nominal entitlement of 90,000ML (maximum annual volume made available)
- total daily volumetric limit of 4,737ML/day
- passing flow condition of 2,592ML/day.

Key Price parameters:

- Fixed price of $20/ML of nominal entitlement
- Upfront payment at time of acceptance of draft water licence offer
- Annual water charge of $4.60/ML of water taken (subject to annual CPI).

3.2 Assessment of submissions

All eligible submissions were assessed against the evaluation criteria and other relevant requirements under the Terms of Sale.

Evaluation criteria within the Terms of Sale:

- the purpose for which the water is required:
- the efficiency of existing and proposed water use practices
- land suitability
- there is land available that may be developed under the Vegetation Management Act 1999
- ecological assets and high value environmental features will not be adversely affected under the proposed development
- the topography, including the slope of the land, soils and drainage concerns
- known cultural heritage sites will not be adversely affected under the proposed development
- the impact the proposed taking of, or interfering with, the water may have on the flow of water, existing water licences, and statutory authorisations to take or interfere with water

The outputs from the Integrated Quantity and Quality Model (IQQM) hydrological model of the release volume and proposed licence conditions including the minimum passing flow of 30 cumecs/day satisfied the water allocation security and environmental flow objectives and considered criteria under section 27 of the Fitzroy Basin Water Plan. The stated flow rates including the daily volumetric limit (DVL) and the maximum instantaneous extraction rate were determined in accordance with the Daily Volumetric Limit and Maximum Rate Relationship Tables 2 – 5 in the Terms of Sale.

These rates of take and passing flow conditions were established to ensure that new water licences would not compromise the reliability of existing entitlements and ensure that peak flows would continue to provide ecological benefits to waterholes and floodplains.

3.3 SWIR water licences granted

Following assessment of submissions, 14 of the 15 submitters were offered a water licence. Twelve of these submitters accepted.

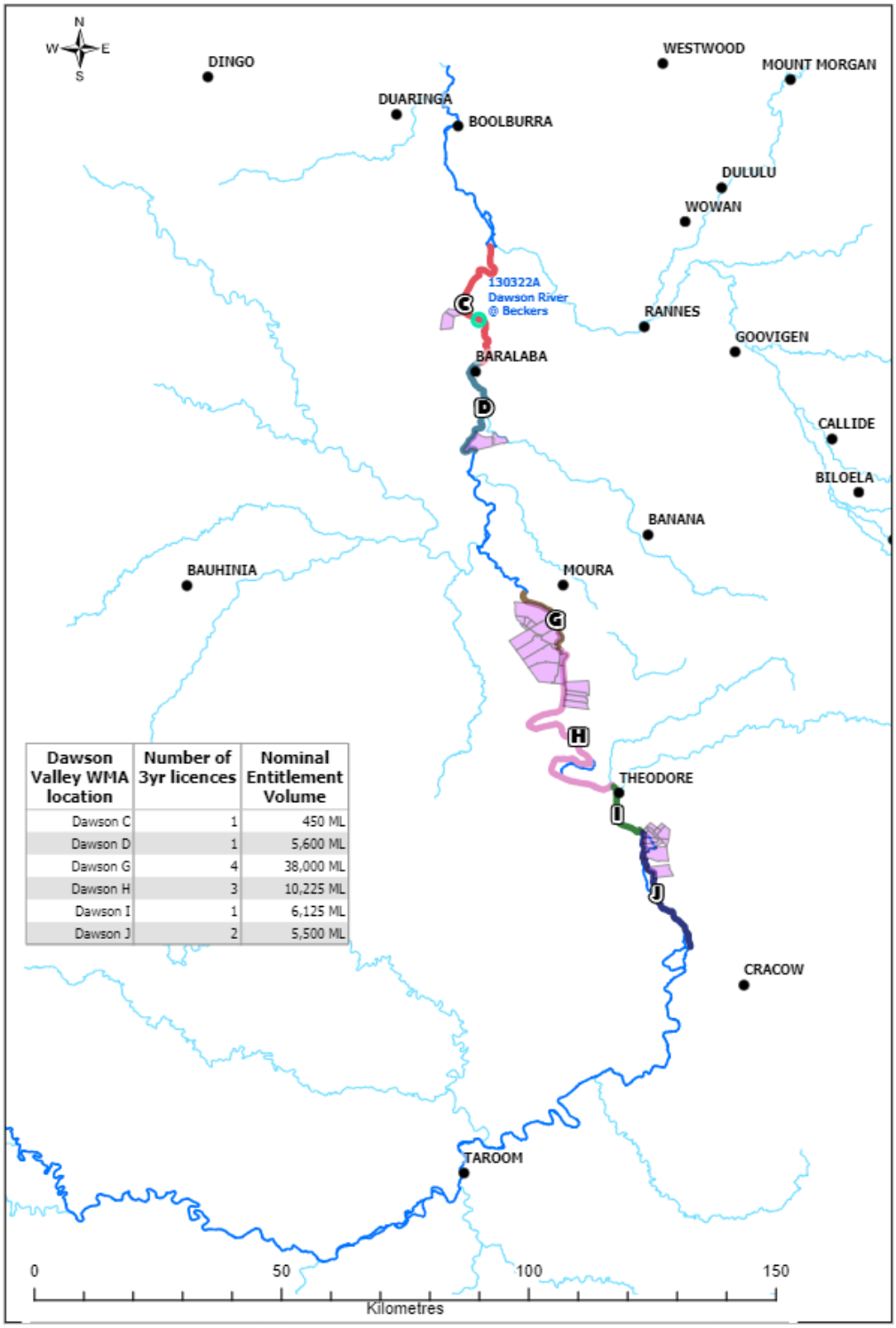
On 1 October 2019, a notice of decision and accompanying water licences were granted to the successful submitters, for a total volume of 65,900ML at the locations shown in Figure 1. Eleven of the

licences granted were to existing irrigators with one licence granted to the holder of a Distribution Operators Licence (DOL) within the DVWSS. Details of the water licences are included in Table 2.

The granting of the water licences coincided with the water year for the DVWMA and DVWSS, that being from 1 October to 30 September. Water licences were granted for a maximum period of three years with an expiry date of 30 September 2022. All SWIR licences were conditioned to the 2,592ML per day (30 cumecs) passing flow condition, to align with the hydrological modelling undertaken to ensure that the water allocation security and environmental flow objectives were met under the Fitzroy Basin Water Plan. Appendix B provides an example of the Schedule B conditions issued on SWIR water licences.

Table 2: Summary of the SWIR water licences granted in the Dawson River Catchment in 2019

WL number	Licensee	Zone	Volumetric Entitlement (ML)	Max extraction rate (L/sec)	Daily Volumetric Limit (ML/day)
621197	Licensee 1	C	450	315	24
621202	Licensee 2	D	5,600	4,720	295
621200	Licensee 3	G	3,800	2,890	200
621201	Licensee 4	G	3,800	2,890	200
621203	Licensee 5	G	15,200	12,740	800
621204	Licensee 6	G	15,200	12,740	800
621994	Licensee 7	H	5,000	4,210	263
621195	Licensee 8	H	2,000	1,565	106
621196	Licensee 9	H	3,225	2,505	170
621199	Licensee 10	I	6,125	5,170	323
621198	Licensee 11	J	4,000	3,125	211
621205	Licensee 12	J	1,500	1,145	79
Total			**65,900ML**		



Dawson Valley WMA location	Number of 3yr licences	Nominal Entitlement Volume
Dawson C	1	450 ML
Dawson D	1	5,600 ML
Dawson G	4	38,000 ML
Dawson H	3	10,225 ML
Dawson I	1	6,125 ML
Dawson J	2	5,500 ML

Figure 1: Locations of take under the SWIR water licences by zones in the DVWMA

4 Water use and trading

There are three water markets currently operating in Queensland:

- water allocation market: trading of registered water allocation titles
- seasonal water assignment market: seasonal assignment of water allocations and other entitlements
- relocatable water licence market: relocation of water licences from one land parcel to another.

Establishing water markets provides certainty for the water industry and helps create a stable and more attractive business environment. Trading water entitlements can facilitate better decision making about usage and requirements. Over time, this promotes efficiency and can make businesses more profitable.

Water trading is available where water allocations have been established and specified within a water management protocol or operations manual in an area within a water plan. The water management protocol sets out the rules for water sharing and permanent water trading of supplemented and unsupplemented water allocations within the plan area, while the seasonal water assignment rules are contained in the operations manual for supplemented water.

The Fitzroy Basin Water Plan Area Water Management Protocol (June 2021) Chapter 3, Part 3 DVWSS describes the permitted and prohibited changes for supplemented water allocations. Chapter 4 Water management areas – general provisions outline the general rules and dealings that are permitted and prohibited for unsupplemented water allocations. Chapter 5 DVWMA includes water sharing rules, dealings and seasonal assignment rules specific to this management area.

4.1 SWIR water licences

DRDMW makes announcements to unsupplemented water allocation and SWIR licence holders when various flow threshold conditions have been met within the DVWMA to allow holders to commence and cease the take of water. For the water years 2019-2020 and 2021-2022, flow conditions provided SWIR licensees with the ability to access their full volumetric limit. In the 2020-2021 water year, available flow conditions resulted in an opportunity for SWIR licensees to take water at approximately 65-80% of their maximum nominal entitlements.

Tables 3, 4 5 show total water taken under SWIR licences and available water that could have been taken for the water years 2019-2020, 2020-2021 and 2021-2022 respectively. Data for 2021-2022 is from 1 October 2021 to 30 April 2022.

The following summary is provided on the water data from the three water years:

- In 2019-2020 water year, the recorded take (>98% of the total volume) was via seven of the 12 SWIR licences, amounted to 16,257ML or 25% of the total water available (65,900ML) able to be accessed. 87% of the total water taken was via three of the 12 licences. Five SWIR licensees did not take any water or extracted minimal volumes (<1% of volumetric licence limits).
- In 2020-2021 water year, the total recorded take was via 10 of the 12 SWIR licences, 21,930ML or 50% of the maximum volume of 43,029ML which could be taken during the announced periods. 78% of the total water taken was via four of the 12 licences.
- In 2021 – 30 April 2022 (50% of the water year), the total water taken under 11 of the 12 SWIR licences was 26,011ML or 39% of the total water available (65,900ML). 90% of the total water taken was via six of the 12 licences. Note - This is the take for 50% of the water year at the time of this report, and further opportunities for the take of SWIR water for the remainder of 2021*/22 water year may arise.*

Overall, the data showed that water take under the SWIR licences was less that the maximum allowable take in all three years. There was an increasing trend in the number of licensees taking a

greater proportion of their volumes allowable under announced periods. Annual water take increased year on year throughout the pilot project, which at the time, was presumed to coincide with increased development of irrigation areas, off-stream water storages and double cropping techniques.

Table 3: Water taken under SWIR water licences for 2019-2020 water year including available volumes which could have been taken under the announced periods

WL number	Client	Zone	Entitlement (ML)	Daily Volumetric Limit (ML/day)	Total time announced periods (hrs/days)	Volume (ML) which could be taken during the announced periods	Total volume taken (ML)	Total volume taken to total water available (%)
621197	Licensee 1	C	450	24	987 hrs (41.125 days)	450	152	34
621202	Licensee 2	D	5,600	295	987 hrs (41.125 days)	5,600	799	14
621200	Licensee 3	G	3,800	200	840 hrs (35 days)	3,800	0	0
621201	Licensee 4	G	3,800	200	840 hrs (35 days)	3,800	29	1
621203	Licensee 5	G	15,200	800	840 hrs (35 days)	15,200	3,874	25
621204	Licensee 6	G	15,200	800	840 hrs (35 days)	15,200	6,401	42
621194	Licensee 7	H	5,000	263	867 hrs (36.125 days)	5,000	24	1
621195	Licensee 8	H	2,000	106	867 hrs (36.125 days)	2,000	0	0
621196	Licensee 9	H	3,225	170	867 hrs (36.125 days)	3,225	627	19
621199	Licensee 10	I	6,125	323	867 hrs (36.125 days)	6,125	3,904	64
621198	Licensee 11	J	4,000	211	840 hrs (35 days)	4,000	448	11
621205	Licensee 12	J	1,500	79	840 hrs (35 days)	1,500	0	0
Total			**65,900ML**			**65,900ML**	**16,257ML**	**25%**

Table 4: Water taken under SWIR water licences for 2020-2021 water year including available volumes which could have been taken under the announced periods

WL number	Client	Zone	Entitlement (ML)	Daily Volumetric Limit (ML/day)	Total time announced periods (hrs/days)	Volume (ML) which could be taken during the announced periods	Total volume taken (ML)	Total volume taken to total water available (%)
621197	Licensee 1	C	450	24	331 hrs (13.8 days)	331	317	96
621202	Licensee 2	D	5,600	295	331.3 hrs (13.8 days)	4,071	1,613	40
621200	Licensee 3	G	3,800	200	280 hrs (11.7 days)	2,333	747	32
621201	Licensee 4	G	3,800	200	280 hrs (11.7 days)	2,333	525	23
621203	Licensee 5	G	15,200	800	280 hrs (11.7 days)	9,333	5,749	62
621204	Licensee 6	G	15,200	800	280 hrs (11.7 days)	9,333	5,725	61
621194	Licensee 7	H	5,000	263	328 hrs (13.7 days)	3,629	2,927	81
621195	Licensee 8	H	2,000	106	328 hrs (13.7 days)	1,449	0	0
621196	Licensee 9	H	3,225	170	328 hrs (13.7 days)	2,323	788	34
621199	Licensee 10	I	6,125	323	328 hrs (13.7 days)	4,414	2,766	63
621198	Licensee 11	J	4,000	211	288 hrs (12 days)	2,532	774	31
621205	Licensee 12	J	1,500	79	288 hrs (12 days)	948	0	0
Total			**65,900ML**			**43,029ML**	**21,930ML**	**51%**

Table 5: Water taken under SWIR water licences for 2021-2022 water year (from 1 October 2021 to 30 April 2022) including available volumes which could have been taken under the announced periods

WL number	Client	Zone	Entitlement (ML)	Daily Volumetric Limit (ML/day)	Total time announced periods (hrs/days)	Volume (ML) which could be taken during the announced periods	Total volume taken (ML)	Total volume taken to total water available (%)
621197	Licensee 1	C	450	24	1176 hrs (49 days)	450	203	45
621202	Licensee 2	D	5,600	295	1176 hrs (49 days)	5,600	3,257	58
621200	Licensee 3	G	3,800	200	982 hrs (40.91 days)	3,800	410	11
621201	Licensee 4	G	3,800	200	982 hrs (40.91 days)	3,800	2,716	72
621203	Licensee 5	G	15,200	800	982 hrs (40.91 days)	15,200	2,809	19
621204	Licensee 6	G	15,200	800	982 hrs (40.91 days)	15,200	9,232	61
621194	Licensee 7	H	5,000	263	1056 hrs (44 days)	5,000	2,498	50
621195	Licensee 8	H	2,000	106	1056 hrs (44 days)	2,000	0	0
621196	Licensee 9	H	3,225	170	1056 hrs (44 days)	3,225	873	27
621199	Licensee 10	I	6,125	323	1056 hrs (44 days)	6,125	2,889	47
621198	Licensee 11	J	4,000	211	990 hrs (41.25 days)	4,000	800	20
621205	Licensee 12	J	1,500	79	990 hrs (41.25 days)	1,500	324	22
Total			**65,900ML**			**65,900ML**	**26,011ML**	**39%**

4.2 Supplemented and unsupplemented water via water allocations

DRDMW makes announcements to unsupplemented water allocation holders when various flow threshold conditions have been met within the DVWMA to allow holders to commence and cease the take of water. Water data was collated for unsupplemented water allocations within the DVWMA for zero or low flow thresholds and for allocations with flow threshold conditions of 1,296ML/day (15 cumecs) and 2,592ML/day (30 cumecs).

Tables 6, 7 and 8 provide the summary of collated water data under these authorisations and the SWIR licences within the DVWMA for the 2019-2020 water year, 2020-2021 water year and 2021- 30 April 2022 (50% of the water year) respectively. More detailed water take figures by water allocation groups is provided in Appendix A for each water year.

The following summary is provided on the water data from the three water years:

- Cumulative take of water within the DVWMA under all existing authorisations (including unsupplemented water allocations and SWIR water licences) was 30,239ML in 2019-2020 water year, 30,466ML in 2020-2021 water year and 36,359ML for the 2021 – 30 April 2022 (50% of the water year).
- During the 2019 – 2022 water year, 54% of the water harvesting take was SWIR water, during the 2020 – 2021 water year, 72% of the water harvesting take was SWIR water and during the 2021 – 2022 water year (50% of water year), 72% of the water harvesting take has been SWIR water to date.
- The cumulative take of water under all allocations (not including SWIR licences) has not exceeded respective volumes of 62,787ML (2019 – 2020 water year), 44,898ML (2020 – 2021 water year) and 62,395ML (2021 – 2022 (50% of water year)) which was permitted to be taken under announced periods within the DVWMA.

Overall, the data shows that total water taken under unsupplemented allocations and SWIR licences was similar in 2019/2020 and 2020/2021 and has increased in 2021/2022. During this period, the percentage of total water taken via SWIR licences compared to unsupplemented allocations has increased from 54 to 72%. This has resulted in a decreasing trend in unsupplemented water taken via allocations with the same flow threshold (30 cumecs) from 34% to 24%.

Table 6: Summary of water take in DVWMA for 2019- 2020 water year (unsupplemented allocations and SWIR licences)

	Volumetric Limit (ML)	Volume (ML) which could be taken during the announced period	Total volume taken (ML)	Total volume taken to total water available (%)
Nil &low flow water allocations	1,374	1.374	177	13
15 cumec water allocations	40,076	40,076	6,585	16
30 cumec water allocations	21,337	21,337	7,220	34
SWIR water licences	65,900	65,900	16,257	25
Total	**128,687ML**	**128,687ML**	**30,239ML**	**23%**

Table 7: Summary of water take in DVWMA for 2020- 2021 water year (unsupplemented allocations and SWIR licences)

	Volumetric Limit (ML)	Volume (ML) which could be taken during the announced period	Total volume taken (ML)	Total volume taken to total water available (%)
Nil &low flow water allocations	1,374	1.374	148	11
15 cumec water allocations	40,076	30,234	4,297	14
30 cumec water allocations	21,337	13, 290	4,091	31
SWIR water licences	65,900	43,029	21,930	51
Total	**128,687ML**	**87,927ML**	**30,466ML**	**35%**

Table 8: Summary of water take in DVWMA for 2021- 30 April 2022 water year (50% of water year) (unsupplemented allocations and SWIR licences)

	Volumetric Limit (ML)	Volume (ML) which could be taken during the announced period	Total volume taken (ML)	Total volume taken to total water available (%)
Nil &low flow water allocations	1,374	1,374	0	0%
15 cumec water allocations	40,076	39,684	5,244	13%
30 cumec water allocations	21,337	21,337	5104	24%
SWIR water licences	65,900	65,900	26,011	39%
Total	**128,687ML**	**128,295ML**	**36,359ML**	**28%**

Tables 9 and 10 show the unsupplemented water use (not including SWIR water) in the DVWMA and the supplemented water use in the DVWSS respectively. Supplemented water data was provided in annual reports by Sunwater. Data has been summarised from the 2014/15 to 2020/21 water year to provide a longer series of water use data for comparative purposes prior to and after the commencement of the pilot project.

Table 9: Unsupplemented surface water taken in the DVWMA from water years 14/15 to 21/22

Water year	Annual volumetric limit** (ML)	Volume taken (ML)	Water taken as % of annual volumetric limit
14/15	62,787	11,103	18%
15/16	62,787	14,649	23%
16/17	62,787	2,822	4%
17/18	62,787	16,554	26%
18/19	62,787	1,715	3%
19/20	62,787	13,983	22%
20/21	62,787	8,700	14%
21/22*	62,787	10243	16%
Unsupplemented water use 14/15 - 18/19	62,787	46,843 (aver 9,369/yr)	aver 15%
Unsupplemented water use 19/20 - 21/22	62,787	32,926 (aver 10,975/yr) (↑ 17%)	aver 17%

**Data available up to 21/4/22 for the 2021/22 water year*
***Annual volumetric limit may not represent the total volume of water available to be accessed per water year*

Table 10: High, Medium and Medium A priority supplemented water use in the DVWSS from water years 14/15 to 21/22

Water year	Entitlement (ML)	Available water (ML)	Volume taken (ML)	Water taken as % of entitlements
14/15	51,668	52,315	35,115	67%
15/16	51,394	54,738	33,527	61%
16/17	51,394	52,430	48,609	93%
17/18	54,483	51,973	46,049	87%
18/19	54,483	56,535	48,519	86%
19/20	54,483	44,133	33,633	77%
20/21**	54,483	64,238	55,112	86%
Supplemented water use 14/15 - 18/19		267,991 (aver 53,598/yr)	211,819 (aver 42,364/yr)	aver 79%
Supplemented water use 19/20 - 20/21		108,371 (aver 54,185/yr) (↑ 1.1%)	88,745 (aver 44,372/yr) (↑4.7%)	aver 82%

** No data for 2021/2022 available at the time of publication. * Source – Sunwater Annual Reports -* Report Statistics - Sunwater
Note – Data is provided for irrigation in the Dawson Valley only. ** Source – Sunwater ROL Annual Report

Analysis of the data from Tables 9 and 10 is summarised below.

- The average unsupplemented water use in the DVWMA has increased by 17% (when compared to the average for the preceding water years 2014/15 to 2018/19) for the years that the SWIR licences have been in effect.
- The average available supplemented water in the DVWSS slightly increased by 1%, and the average supplemented water use in the DVWSS has increased by 5% for the years that the SWIR licences have been in effect. Note – no data was available for the 2021/2022 water year at *the time of publication.*

Overall, unsupplemented water use in the DVWMA and supplemented water use in the DVWSS have increased for the years that the SWIR licences have been in effect.

4.3 Water trading

4.3.1 Permanent trades

Permanent trades of unsupplemented surface water allocations in the DVWMA are shown from 2014/15 to 2021/22 in Table 11, and permanent trades of supplemented surface water allocations in the DVWSS are included in Table 12.

Table 11: Permanent trades of unsupplemented surface water allocations in the DVWMA

Water year	Water Allocation group	Number of trades	Volume traded (ML)
14/15	11B	2	1,236
14/15	11A	2	494
14/15	12A	1	144
16/17	11A	11	1,453
17/18	11A	4	278
18/19	11A	8	1,215
18/19	11B	2	1,614
19/20	10B	1	1,282
20/21	11A	3	1,197
20/21	13C	1	25
21/22	10A	1	22
21/22	10B	1	351
21/22	11A	1	38
Trades between 14/15 - 18/19		Total 30 (aver 6/yr)	Total 6,434 (aver 919/yr)
Trades between 19/20 - 21/22		Total 8 (aver 1.3/yr) (↓78%)	Total 2,915 (aver 486/yr) (↓47%)

**2021/2022 trading data is until 31 March 2022*

Table 12: Permanent trades of supplemented surface water allocations in the DVWSS

Water year	Priority Group	Number of trades (no land)	Volume traded (ML) (no land)
14/15	Medium	2	522
14/15	Medium A	2	25
15/16	Medium	4	816
15/16	Medium A	1	30
16/17	Medium	9	2,062
16/17	Medium A	3	1,593
17/18	Medium	12	1,599
17/18	Medium A	2	228
18/19	Medium	10	1,543
18/19	Medium A	4	3,634
19/20	Medium	1	16
19/20	Medium A	4	167
20/21	Medium	5	3,130
20/21	Medium A	1	10
21/22*	Nil	Nil	Nil
Trades between 14/15 - 18/19	Medium Medium A	Total 37 (aver 7.4/yr) Total 12 (aver 2.4/yr)	Total 6,542 (aver 1,308/yr) Total 5,510 (aver 1,102/yr)
Trades between 19/20 -21/22	Medium Medium A	Total 6 (aver 3/yr) (↓60%) Total 5 (aver 2.5/yr) (↑4%)	Total 3,146 (aver 1,573/yr) (↑20%) Total 177 (aver 88.5/yr) (↓84%)

**2021/2022 trading data is until 31 March 2022.*
Note – trading data includes all allocations for irrigation, industrial, urban and Sunwater.

The number of permanent trades of unsupplemented surface water allocations in the DVWMA decreased by 78% and the volume of water traded decreased by 47% for the years that the SWIR licences have been in effect when compared to the previous five water years. The number of permanent trades of supplemented surface water allocations in the DVWSS decreased by 60% for the Medium Priority Group and increased by 4% for the Medium A Priority Group for the years that the SWIR licences have been in effect when compared to the previous five water years. For the same comparative time periods, the volume of water traded increased by 20% for the Medium Priority Group and decreased by 84% for the Medium A Priority Group for the years that the SWIR licences have been in effect. It must be noted that the data available for permanent trades in the DVWSS includes all allocations for irrigation, industrial, urban and Sunwater.

4.3.2 Seasonal assignment (temporary trading)

Seasonal assignment of unsupplemented and supplemented allocations are permissible within the DVWMA and DVWSS respectively. There have been no seasonal water assignments of unsupplemented surface water allocations in the DVWMA from 2014/2015 to 2020/2021. Conversely, seasonal assignments of supplemented allocations from 2014/15 to 2018/19 (Table 13) averaged 104 trades for all allocations with an average of 11,248ML of volume traded per water year for irrigation usage. A similar number of average trades and volumes per water year have occurred within the pilot project, although the irrigation data available at the time of publication was restricted to only the 2019/2020 water year.

Table 13: Seasonal assignment of supplemented surface water allocations in the DVWSS

Water year	Number of assignments	Volume assigned (ML)
14/15	89	10,550 (10,610)
15/16	46	5,350 (5,765)
16/17	158	14,943 (15,238)
17/18	130	13,423 (14,082)
18/19	95	11,974 (12,404)
19/20	99	8,663 (9,092)
20/21	114	(15,653)
21/22*	N/A	N/A
Seasonal assignment of supplemented water 14/15 – 18/19	Total 518 (aver 104/yr)	Total 56,240 (aver 11,248/yr) irrigation only
Seasonal assignment of supplemented water 19/20 – 20/21	Total 213 (aver 107/yr) (no change)	Total 8,663 (2019/2020 only) irrigation only

**No trading data for 2021/2022 at time of publication*
Note - volume assigned total relates to irrigation only. Total in brackets relates to total volume assigned including industrial, irrigation, urban and Sunwater.Source - seasonal assignment number of assignments sourced in Sunwater ROL annual reports. Volume assigned from Sunwater Annual Reports - Report Statistics - Sunwater

5 Development – irrigation area and storages

In the absence of actual data from SWIR licences, a desktop analysis of aerial imagery was used to determine changes in irrigation areas and water storage infrastructure prior to the granting of SWIR water licences (October 2019) and in April 2022. Based on the aerial imagery, an increase in irrigation area of approximately 1900 ha has occurred for land attached to 11 water licences. The majority of the increase in irrigation area (95%) of the 1900 ha has been undertaken by only three SWIR licensees.

For water storage infrastructure, there has been an increase in area of 275 ha over the same period. Approximately 42% of the 275 ha in detected water storage infrastructure has been constructed by a single SWIR licensee, with two other licensees accounting for a further 24% of the total area under new water infrastructure. Therefore 76% the total area under new water infrastructure has been constructed by three SWIR licensees.

Further information was requested from SWIR licensees in July 2022 through a survey questionnaire during the consultation period for the Review Report in relation to the development of irrigation areas and storages to validate the desktop analysis. Less than half of the SWIR licensees submitted survey responses, and due in part to the limited number of responses received, DRDMW has been unable to determine the actual increased irrigation area and storage areas as a result of the SWIR release in the DVWMA.

Note - This analysis has not included potential areas of development under the licence held by the distribution operator licensee as knowledge of water distributed to individual irrigators is unknown.

6 Impacts to existing water users – stakeholder feedback

6.1 Sunwater

In a letter dated 4 August 2021 to DRDMW, Sunwater advised that their customers and operations team had indicated that the SWIR water licences has had an impact on the flexibility of water delivery. This statement was made as a result of a water harvesting announced event by a flow event downstream of Theodore Weir (Zone H) and the subsequent take by SWIR licensees in Zone I of the DVWMA, which reportedly resulted in the draw-down of Theodore Weir. This matter has been considered by DRDMW and has prompted a proposed review in flow announcements made by the department for Zones H and I.

Sunwater recommended that, in future, the volume of SWIR water to be made temporarily available should be determined by updated detailed modelling. Sunwater also requested appropriate conditions be placed on SWIR water licences so that water stored in its infrastructure for their customers is fully protected.

6.2 Supplemented and unsupplemented allocation holders

DRDMW has received several reports that the take of SWIR water has impacted unsupplemented allocation holders within zones A and B of the DVWMA. Investigation by DRDMW using available flow data determined that there was no evidence to substantiate these claims and no correlation could be made regarding the inability for existing unsupplemented water allocation holders to access their entitlements. DRDMW is aware that other holders have expressed concerns about the SWIR water licences however no official complaints have been received. Feedback received during consultation with stakeholders and irrigators support a review of hydrological modelling in a future release process to ensure that any concerns raised have been considered and addressed.

6.3 Compliance with water licence conditions

All SWIR licences have been monitored for compliance with conditions as part of standard departmental procedures. There were several instances of breaches in conditions where the maximum daily volumetric limits have been exceeded. No compliance action has resulted to date, however investigations continue. Annual volumes taken across the first two (2) water years have been within the volumetric limits of all SWIR licences.

7 Pilot project evaluation

7.1 Release process

Commencing with engagement of stakeholders and Sunwater in November 2018, followed by public meetings with irrigators and a formal expression of interest during early 2019, DRDMW drafted the release process and the Terms of Sale. On 26 March 2019 the release of 90,000ML of unallocated water was published on the Business Queensland website, which provided for irrigators to make a submission under the Terms of Sale for temporary access to SWIR water. The submission period concluded on 10 May 2019, followed by assessment by DRDMW as per the Terms of Sale. The process resulted in the allocation of 65,900ML of water being granted temporarily for three years to 12 licensees.

7.2 Stakeholder engagement – review

DRDMW has undertaken stakeholder engagement prior to and during the pilot project to provide opportunities for input and feedback from interested parties on the pilot project objectives. Stakeholder engagement has included meetings and written correspondence with key stakeholders, surveys to irrigators to establish demand for water and development associated with SWIR licences, a public meeting held in Theodore with DVWMA irrigators and industry groups and visits to properties associated with SWIR licences.

During the final year of the pilot project, DRDMW consulted with stakeholders, existing allocation holders and SWIR licences in July 2022 to review this report (while in draft) and seek further feedback on the pilot project. SWIR licensees were requested via a survey to provide evidence of increases in irrigated land, water storage infrastructure, variation of crops and cropping frequency and economic stimulus by employment and capital investment during the pilot project. The information provided was considered and where required, amendments were made to this report to reflect feedback received from all parties. The following sections provides a more comprehensive overview of the feedback received from various stakeholders and interest groups that were engaged as part of the pilot project.

7.2.1 Sunwater

Consultation with Sunwater, the Resource Operations Licence holder for the DVWSS and the project proponent of the Nathan Dam and Pipelines project has been undertaken through formal correspondence.

Sunwater raised concerns of the current pilot project and considerations for any future release process, as summarised below:

- As the DVWSS relies on weirs refilling (multiple times) to achieve maximum allocation each year, our customers and operations team have indicated that the SWIR water has had some impact on the flexibility of water delivery. An example of this impact is the draw-down of Theodore Weir during an announced flow event by SWIR licensees.
- In future, Sunwater requests appropriate conditions be placed on SWIR water licences so that water stored in its infrastructure for customers is fully protected.
- The volume of SWIR water to be made temporarily available will need to be determined by updated detailed modelling. This will confirm the extent of the impact on Sunwater customers and operations.
- While Sunwater is broadly supportive of an extension to the current temporary arrangements for a further three years, the identified impacts arising from the SWIR should be appropriately considered and addressed prior to any extension.
- Due to no increased demand from mining interests in the region and the recent expiry of the Coordinator-General's Report, Nathan Dam will not be constructed in the three years following expiry of the current SWIR water licences in September 2022.
- Sunwater's Regional Blueprint process has reviewed infrastructure options in the Dawson-Callide region, including raising Glebe Weir and construction of Paranui Weir and that planning work for infrastructure options in the Dawson sub-catchment is expected to be completed by mid-2023.
- Sunwater continue to develop plans for other infrastructure projects within the Dawson sub-catchment over the coming years.
- While the planning for infrastructure options in the Dawson sub-catchment is underway, Sunwater suggest that any release of SWIR water should be only temporary for no more than three years as per the Water Act.

7.2.2 SWIR licence holders

As part of an initial review of the pilot project, an anonymous survey was undertaken with the SWIR licenses in August 2021 to seek information on irrigation and water infrastructure development, capital investment and general feedback on the pilot project. DRDMW received seven responses from the twelve licensees with recommendations largely based on announcements of flow events, reporting of water taken and concerns of flow monitoring locations for individual zones within the DVWMA. The following summaries the feedback received on these recommendations:

- Announced periods

  "Announced periods need to be proactive rather than reactive - most of the events the past year the announced period has started over 24 hours after the flow condition has been met. This often results in irrigators technically not being able to start water harvesting until after the peak of the flow has passed. It also results in the tail of the event dropping a lot quicker than would normally occur."

  "Happy with announced periods, perhaps could be done via SMS *as well as email. Perhaps an electronic means to enter meter reads would be easier."*

  "Sometimes I think we should be harvesting a day earlier based on the levels seen and maybe checking of more than one gauging station should happen in case of inflows from other more localized creeks and inflows."

- Reporting of use

  "An online app for reporting meter use would greatly improve the system as it has been tedious and complicated process to submit multiple claim forms for multiple pump sites which was compounded in 2020 when you had one flow go between a 30 cumec and 15 cumec multiple times."

  "Clearer guidelines for reporting SWIR water to normal flood harvesting water to allocation water and then reporting to Sunwater. The announced periods for water harvesting may need to be reviewed earlier to allow for preparation to pump."

- Irrigation zones

  "Irrigation zones also need addressing as some irrigators who are below the flow monitoring point can technically pump when water isn't actually flowing past them. This occurred this year when irrigators above Theodore weir were allowed to pump for 24 hours even though there was no water flowing over Theodore weir. This is because their flow condition point for Zones H & I is at Woodleigh and you had a localised flow event coming through Lonesome Creek which trigger the pumping event even though no water was going over Theodore Weir in Zone I. There is also a discrepancy for some irrigators who are below the flow monitoring point that can take water without affecting the gauging station i.e. those irrigators in Zone H below Woodleigh, in Zone F below Moura weir and countless other points up and down the system. Those irrigators directly above the gauging station impact the flow directly and are disadvantaged if the volume being pumped drops the flow condition below the 30 cumec trigger level."

In response to the feedback, DRDMW has reviewed the method of determining the announced periods and improvements will be adopted. Where delays to announcements are made, DRDMW must extend the period by a similar time up to a maximum of 24 hours as stated in the Fitzroy Basin Water Management Protocol (June 2021). Advancements in technology and telemetry are currently being investigated and these will benefit irrigators in reporting use and announcements. Further considerations to the flow monitoring locations for irrigation zones have been proposed and should a future release process occur, a review of the flow threshold condition will be undertaken.

Irrigators were well informed about the temporary nature of the SWIR release for a three-year period, and the SWIR Terms of Sale Submission Form Part B – required submitters to acknowledge the following statement:

> *'I acknowledge that a water licence granted from this SWIR is for short-term access. I will seek and/or utilise alternative water supplies upon cancellation, surrender or expiry of any water licence granted from the SWIR under this process.'*

The short-term access to SWIR water has been acknowledged by submitters in the submission form, however, some comments provided in response to the survey reflected a desire and expectation from the SWIR licensees that access would continue beyond 30 September 2022 when licences expire.

Feedback received from a SWIR licensee suggested that:

- Significantly more investment would occur if access to water was given over a longer period
- Significantly more development would occur (would even double an initial investment) if there was a guarantee that the licences would be renewed at its current levels
- Significantly more SWIR water would be taken if it was released again, especially considering purchases of additional properties between Moura and Baralaba
- A permanent release of water would allow to consider development of a new weir/weirs
- There is a number of new irrigators that have purchased land in the last three years who have expressed interest in taking up an allocation if it was made available.

Feedback was provided by SWIR licensees in July 2022 on the Review Report (in draft) which was similar in theme to that provided by other stakeholders (detailed below in section 8.2.3), feedback provided by SWIR licensees is summarised below:

- The pilot project has facilitated an increase in irrigation area and production.
- The release of SWIR water offers an alternative option to meet water needs and lessens the need to purchase extra water via the water trading market and suggest that stimulation of the water market will occur when there is no access to alternative water. Stakeholders have recommended that the inclusion of water trading as a metric of success of the SWIR water in the DVWMA should not be included for any future release.
- Recommend that DRDMW review current rules in water trading which include trading zones and convert tributary licences to volumetric entitlements.
- The volumes of water stored on farms currently has provided confidence to plant increased areas in 2022/2023.
- Supportive of another temporary SWIR release and believe the release of SWIR water has had a significant positive impact on the irrigation community in the DVWMA.

7.2.3 Other stakeholders

On 22 August 2021, DRDMW received a letter from Andrew French, the President of the Dawson Valley Cotton Growers Association (DVCGA), which represents a significant number of irrigators in the Dawson Valley, seeking to be involved in discussions with DRDMW regarding how the availability of this water should be managed into the future.

The DVCGA stated that:

- It is broadly supportive of the SWIR water being made available to irrigated agriculture in the Dawson Valley and that it has seen the benefits that have come to the region and communities from subsequent investment in additional infrastructure and the enhanced production.

- It requests that, prior to any renewal process, it is briefed (preferably through face-to-face meetings) on how the project has worked to-date, and whether any licence holders have been unfairly impacted by the release, and how access to the released water is managed.
- It does not have a position on whether all irrigators have been treated fairly through this process, but it is aware of a number of individual irrigators who do contend their access has been affected negatively.
- Its expectation is that no irrigators should be any worse off than if Nathan Dam was built.
- It would see benefit in this engagement becoming an annual event, which would not only report on the operation of the SWIR water but also on the general operations of the Dawson River.

On 17 September 2021, DRDMW responded to the DVCGA accepting the opportunity to meet with the organisation and members. A public meeting with DVWMA irrigators was held in Theodore on 8 October 2021 to gather information about the release process and the management of SWIR water licences. All SWIR licensees were invited as well as stakeholders who were part of the initial consultation meetings prior to the Pilot project release and irrigators contacted via the DVCGA network.

SWIR licensees who were present at the meeting expressed concern regarding the lack of long-term water security due to the short-term nature of the product. Feedback from attendees at the public meeting is included below in Table 14.

Table 14: Summary Feedback from public meeting held on 8 October 2021

Positive or negative	Topic
Positives	• increased area of irrigation
	• increased production
	• more jobs
	• investment in infrastructure to store water
	• benefit of using water on farms rather than building huge dams
Negatives	• the need to pay for the water upfront, before building storages
	• the first year of the Pilot Project being 'lost' to building new infrastructure capable of storing SWIR water
	• three-year term of SWIR licences does not provide future water security

The following general matters were raised at the meeting:

- Zones within the DVWMA are too big and the Fitzroy Basin Water Management Protocol (June 2021) rules regarding measuring flows and regulating take of water could be improved. Installation of additional gauging stations on the Dawson River to improve monitoring flow events and water use.
- Announcement of water harvesting events by DRDMW could be improved. The group discussed timing of announced periods and use of the current logging system.
- Establish a working group to represent interest of various groups of stakeholders within the DVWMA in relation to releases of SWIR water. The primary function of the group would be to provide a consultative forum that can channel any matters arising among stakeholders with regard to the SWIR releases to DRDMW in an effective and efficient way through a few dedicated representatives.

Feedback on the Review Report (in draft) was provided by a number of stakeholders including the DVCGA, Queensland Farmers' Federation, AgForce, Queensland Farmers Limited, Theodore Water and Cotton Australia. The feedback received from these stakeholders was very similar in theme and is summarised below.

- The pilot project has strengthened economic potential for the region as the available water has allowed for farm expansion and increased crop yield, increased water security, increased business viability and returns.
- Stakeholders have provided feedback on the evaluation of water trading data and the evaluation of stimulation of the water trading market as an objective of the pilot project. Stakeholders consider that the release of SWIR offers an alternative option to meet water needs and lessens the need to purchase extra water on the temporary trading market and suggest that stimulation of the water market will occur when there is no access to alternative water. Stakeholders have recommended that the inclusion of water trading as a metric of success of the SWIR water in the DVWMA should not be included for any future release.
- To facilitate an increase in water trading, recommend that DRDMW review current water trading rules which include trading zones and convert tributary licences to volumetric entitlements.
- Acknowledge that during the three years of the pilot project release, the world cotton prices have moved to record highs which has resulted in the largest cotton production planting area in the Dawson Valley since before the record floods of 2010/2011. There is consideration that as markets continue to move, the Dawson Valley is expected to see a more diverse range of crops being grown when it makes financial sense for irrigators to do explore such options.
- Provided additional double cropping opportunities as a direct result of the SWIR water. The SWIR water has provided the opportunity to grow an additional winter cereal/legume crop following an irrigated summer crop, enabling landholders to fully maximise their developed irrigation areas.
- Supportive of another temporary SWIR release as an investment in the region's agricultural production potential, local business growth and employment opportunities. A second release of SWIR water to be expedited, so farmers and their community can benefit from the economic and social outcomes during the 2022/2023 season, providing a degree of certainty whilst continuing to recognise that the SWIR water is offered on a temporary basis.

7.3 Effects on the water market

As part of the anonymous survey conducted between 10 and 20 August 2021, the respondents were asked whether the SWIR water had affected the water market. Four respondents were not sure, did not know or did not notice any difference since the SWIR water release. Three survey respondents noted that:

> *"Over the last three years, supplemented water has definitely become more expensive."*
>
> *"There would be no denying that SWIR has been the catalyst for more on farm storages to be built and therefore an immediate increase for the demand of supplemented water to fill these structures. Other things like water stockbrokers have impacted the market along with an increased commodity prices and the ability to pay more."*
>
> *Unsupplemented – "There was no willing sellers of permanent licences left in the system so even though there have been no off-market permanent trades I don't think the SWIR water has influenced this market. It was also extremely cumbersome and costly to temporary trade this market, so I don't think it has affected the temporary market either."*
>
> *Supplemented – "Due to the increased area and storages development it has increased demand for temporary water particularly early in the season if there has not been a flow event. In 2021 we purchased a large volume (+1500ML) at $150ML in the temporary market in order to get our crop through. Sunwater and others may say that due to increased storage volumes those taking SWIR water are not going to use their supplemented water and thus announced allocation volumes will be lower due to the requirement of allocation needing to be used before the weirs fill up again. Given our experience above and the fact that we are currently on 101% negates this argument."*
>
> *"Yes, in the short term, I have been able to sell my water for double the price during the drought because there is no dam."*

There has been no change in seasonal water assignments of unsupplemented surface water allocations in the DVWMA since the SWIR release. No seasonal assignments occurred prior to or following the SWIR release for any water year since 2014/2015 onwards.

While there is interest in trading of unsupplemented water, stakeholders reported the following seasonal assignment impediments:

- The application and approval process is too lengthy – by the time a seasonal assignment is processed, the opportunity to take water has passed.
- The cost of applying for a seasonal assignment.
- A seasonal assignment rules specify that it can only occur for the total volume of a water allocation, so it can't be split between users.
- There are limitations on trading between zones in the DVWMA.
- There is no ability to relocate unused water licences on tributaries to the Dawson River.

These issues will be considered by the department for future legislative and water plan reviews.

8.4 Fitzroy Basin Water Plan outcomes

Section 11 to section 15 of the Fitzroy Basin Water Plan prescribes the outcomes for water in the plan area. Water is to be allocated and sustainably managed in a way that:

- recognises the natural state of watercourses, lakes, springs, and aquifers has changed because of the taking of, and interfering with, water; and
- seeks to achieve a balance in the following outcomes
  - the general outcomes mentioned in section 12
  - the specific surface and groundwater outcomes mentioned in section 13
  - the general ecological outcomes mentioned in section 14
  - the specific ecological outcomes mentioned in section 15.

Surface water outcomes for the plan area as prescribed in section 13 of the Fitzroy Basin Water Plan and include:

- to make water available in the Upper Dawson and Lower Dawson sub catchments to support:
  - water supplies for mining and industry
  - growth in the population of towns and communities and agriculture.
- to make water available in the Fitzroy subcatchment to support urban, industrial and other uses.
- to protect the probability of being able to take water from the Fitzroy River under a water allocation held by a water service provider for the supply of town water.

Division 3, Subdivision 4, section 45 of the Fitzroy Basin Water Plan prescribes the reserve volume for unallocated water for strategic water infrastructure is 90,000ML on the Dawson River. Schedule 11 currently prescribes water allocation groups to take unsupplemented surface water, including the flow condition, water allocation group and number of days to take unsupplemented surface water.

The pilot project to release SWIR water was undertaken in accordance with the process stated in the Fitzroy Basin Water Management Protocol (June 2021) as prescribed in section 48 (3) of the Water Plan. Multiple scenarios for hydrological and ecological review were undertaken in the determination of the specified water product for the Dawson SWIR release. As the cumulative take of water within the DVWMA (under all existing water allocations and SWIR licences) has not exceeded the limits of take modelled for all existing water allocations in the water plan, and the overall performance of the DVWMA has been within the Fitzroy Basin Water Management Protocol (June 2021) limits, it is considered that the hydrological and ecological outcomes of the Water Plan have been met.

8 Pilot project performance against objectives

The objective of the release of SWIR water in the DVWMA was to provide ability for water users on the Dawson River to access committed water reserves under a water licence with the intent to support the exiting suite of measures providing flexible water management that strengthens job creation and economic development. The pilot project's performance against the project objectives is measured in terms of economic growth, increased production rates while meeting water security and environmental objectives defined in the Fitzroy Basin Water Plan, stimulation of the water trading market and consideration that a project should not adversely affect other water users.

8.1 Economic investment

During the development of the Terms of Sale for the pilot project, it was considered that a temporary release would best be suited to develop enterprises which have existing infrastructure to take water. Approximately 80% of the water harvesters who expressed an interest in obtaining SWIR water advised that they had existing water storages and could use that infrastructure for temporary access to additional water. There were also water harvesters who did not have developed infrastructure but were looking to construct or had works under construction at various degrees of completion.

The SWIR licences were granted to irrigators who had developed or were in the development stages of their enterprises. It was anticipated that the temporary SWIR release would allow irrigators to expand their irrigation area without undertaking further investment in additional or new water storage infrastructure.

Responses to an anonymous survey from SWIR licensees indicates that all respondents have invested into refurbishment of existing infrastructure on their properties (such as replacement pumps and pump structures, upgrading irrigation channels) and/or construction of new infrastructure (new storages, expanding irrigation areas, building supply channels, installation of new pumps and pump & irrigation equipment). Respondents reported the capital that had been invested into new infrastructure, with some respondents reporting investments greater than $500,000, greater than $1 Million and one respondent indicating that they had invested in excess of $5 million.

Further information was sought by DRDMW during consultation of the Review Report (in draft) in relation to economic investment. SWIR licensees that submitted survey questionnaire responses reported capital expenditure of $33 million during the three-year period that the SWIR licences have been in effect. As less than half of SWIR licensees submitted survey responses, the total capital expenditure invested during the three-year SWIR licence period is likely to be greater than the capital expenditure figures provided. The investment of capital reported confirms that the project objective to strengthen economic development by increasing the opportunities for businesses to benefit through infrastructure upgrades and installation has been achieved.

8.2 Production and employment

There is limited information on production and employment growth associated with the release of SWIR water under the pilot project. DRDMW requested SWIR licensees via a survey in July 2022, to provide evidence of increases in irrigated land, water storage infrastructure, variation of crops and cropping frequency and economic stimulus by employment and capital investment during the pilot project. Less than half of the SWIR licensees submitted survey questionnaire responses and while this provides an indication of production and economic growth, the actual figures are likely to be much higher. Information provided in the survey questionnaire is summarised below.

- Irrigated area increased by 1,719ha and water storage infrastructure increased by 20,880ML.
- Double cropping opportunities increased productivity by approximately 30% per hectare.
- The number of full-time employees increased by 46 and casual employees by 16. In addition, 5 fulltime positions are yet to be filled due to workforce shortage issues. Earthworks and pump

infrastructure installation during the three years of the SWIR release provided ongoing employment for contractors, with many works delayed due to workforce shortages.

In July 2022, Cotton Australia and the DVCGA provided information on local production and employment growth associated with investment in cotton throughout the Dawson Valley. Information that was provided is summarised below.

- Cotton Australia, using data obtained from Queensland Cotton, indicated that the area of cotton production increased by 23,00ha in 2022. This generated an increase in approximately 23,000 lint cotton bales, worth approximately $16million, along with $2million worth of cotton seed. Ten additional people were employed in casual positions at the Moura Cotton Gin to meet the increase in local cotton production.
- DVCGA provided figures of area planted to cotton in 2018/19 (4,776ha) and 2021/22 (7,073ha), an increase of approximately 2,300ha. A significant portion of this increase in area was reported to be attributed to the availability of SWIR water.
- DVCGA reported that access to the SWIR water has allowed growers to gain access to more water earlier in the season, allowing planting of a larger area when yield potentials are higher. SWIR water has provided water security over the full growing of season of cotton contributing to increased yields.
- DVCGA reported that increase in production, has shored up the security of the Cotton Gin and Qld Cotton to continue to maintain and improve the facility so that it can remain viable in the future.

The reported increases in both production and employment confirms that the project objective to increase job creation and economic development has been achieved.

8.3 Stimulation of the water trading market

The water trading market of unsupplemented and supplemented water was under-utilised at the time of the SWIR release. The SWIR release process was considered a stimulus to increase the water trading currently available and to promote discussion and possible changes to water sharing rules within the DVWMA. This was to allow for irrigators to access a greater portion of unsupplemented water currently available following the temporary water licences granted under this process as well as providing more stimulus to the entire water trading market.

It can be determined from the trading data that the grant of SWIR licences has had an effect on the number of permanent trades of unsupplemented surface water allocations, however the volume of water traded in the DVWMA has significantly decreased. Further analysis of this data is required to establish if the volumes traded are of lesser quantities than previous trades, meaning that irrigators have targeted allocations with larger volumes in preference to those with smaller volumes.

From the available trading data, it is unclear what effects the grant of the SWIR licences has had on the permanent trade of supplemented surface water allocations in the DVWSS, the number of trades has significantly decreased for the Medium Priority Group, however the volume of water for the Medium Priority Group has increased. The number of trades for the Medium A Priority Group has slightly increased and yet the volume traded has significantly decreased for the Medium A Priority Group.

For temporary trading or seasonal assignments, there has been no change to unsupplemented allocations however there has been a history of no or very little trading occurring in this market for a significant period. A slight increase (8%) was noted with seasonal assignments of supplemented surface water allocations since SWIR release when compared to past trends however data is limited to the first two water years of the pilot project. A further review of this data is warranted after the current SWIR release to establish a more complete picture of any response by the water trading market.

Feedback from SWIR licensees and other irrigators indicates that trading was more prevalent prior to the pilot project as irrigators were seeking to secure additional water during development of existing or

new properties. Water entitlements that have not been traded (either temporarily or permanently) either have low annual volumetric or daily volumetric limits or are limited by trading rules within the Fitzroy Basin Water Plan Area Water Management Protocol (June 2021). The release of SWIR water has reduced further trading of entitlements as irrigators secured water under this process to sustain or continue development of irrigation area and infrastructure. SWIR licensees report that they would re-enter into the water trading market if a future release of SWIR water did not eventuate provided that trading rules were amended.

8.4 Meeting water security and environmental objectives

Unallocated water releases and granting of entitlements must meet the water security and environmental objectives of a water plan. The SWIR water licence conditions which included daily volumetric limit, maximum rate of take and passing flow conditions were modelled to ensure these objectives were met, existing users would not be impacted and that flows would continue to provide ecological benefits to waterholes and floodplains.

From information available to DRDMW, the following is noted:

- There was no non-compliance issues detected in annual volumes taken or passing flow conditions for SWIR licences. Some minor non-conformance on daily maximum rates of take were detected and are being investigated.
- The cumulative take of water within the DVWMA (under all existing water allocations and SWIR licences) has not exceeded the limits of take modelled in the water plan.
- Matters of concern about effects on existing unsupplemented allocations raised by irrigators to the DRDMW have been investigated and have not uncovered any impacts attributed to the SWIR release.

It is concluded that the SWIR release and associated granting of temporary water licences in the DVWMA has ensured that water security and environmental objectives as defined in the Fitzroy Basin Water Plan have been met.

8.5 Conclusion

The pilot project was an opportunity to establish whether the release of SWIR water for a temporary period of a maximum three years would lead to a stimulus of water trading, irrigation development and an economic stimulus to local and regional communities. The review identified that progress has been made on each of these objectives, however information from the full term of the release is required to provide an accurate account.

There has been limited trading on a permanent or temporary basis with some permanent trading of allocations showing a negative trend. Irrigators stated that trading was more prevalent prior to the release of SWIR water and has reduced as water security under the SWIR release has met their requirements. Conversely, the temporary trading market for supplemented allocations has increased in line with an increase in water taken under SWIR licences. This may reflect a preference in accessing a water product that is either less expensive or provides opportunities to trade other entitlements for an economic gain.

The review therefore concludes that, as a result of the SWIR release, volumes available under existing water entitlements have not been exhausted, and have been replaced by the opportunistic SWIR water harvesting volumes. Further review of trading rules may facilitate increased trading opportunities that currently limit irrigators seeking additional water security.

Prospective SWIR water licensees initially proposed during the submission process to increase irrigated land by 3,000ha and cropping frequency. The review has identified that there has been an increase in irrigated land of approximately 1,900ha from 11 SWIR licensees with DVCGA reporting an increase in cotton production of 2,300ha during the same period. Although SWIR licensees were informed and consented to the temporary period of licences granted, development of water storage

infrastructure has increased by 275ha. Notably, investment in irrigation land and water infrastructure have only occurred for a select number of SWIR licensees, with some licensees indicating that irrigation development is staged, based on economic returns on investment over many years. A number of SWIR licensees have reported 30% production increases of resulting from double-cropping opportunities enabled by the SWIR licences.

The SWIR release has resulted in strengthening job creation and economic development in the DVWMA due to investment in on-property infrastructure, increased production and increased employment at the property and local scales. The limitations of information provided to DRDMW obscure the actual scale and property-level consistency of the economic stimulus at the is unclear, however it shows that employment opportunities have increased through ongoing investment. Local employment supporting the cotton industry through increased production will assist with future investment decisions on local Cotton Gins. Stakeholders and irrigators, including those that secured water licences under the pilot project, strongly support a future release.

9 Recommendations

A review of the pilot project release of the SWIR water has been undertaken to demonstrate project effectiveness and determine how well the project delivered on the objectives. The findings, conclusion and recommendations within this Review Report will be taken into consideration for any implementation of future release of SWIR water within a water plan.

It is recommended that any future release of SWIR water within a water plan clearly defines the indicators to be used to determine the project success against the objectives. The indicators should be clearly defined and communicated to submitters prior to the release of any SWIR water. These indicators should include milestone reporting and frequent engagement between DRDMW and the licensees, during the period of the temporary SWIR licence, to progressively gather information throughout the project. Information to be provided at the end of each water year should include:

- actual increased area of irrigated land
- increased water storage volumes (Ha/ML)
- new pumping infrastructure
- variation of crops and/or increase in cropping frequency
- increase in employees/job creation
- supplemented and unsupplemented water trading volumes and frequency
- capital investment.

The decision for irrigators to expand irrigation is a long-term decision taken at their risk, and the granting of SWIR licences, provides a short term, temporary, opportunistic take of water under a SWIR licence. The temporary nature of the release of SWIR water, and the time taken for licensees to utilise the SWIR water, confirms that it is those licensees who have infrastructure in place already who can benefit from the temporary opportunistic take of SWIR water, as the majority of the tangible effects of the utilisation of the SWIR water, ie increased utilisation of SWIR water, increased water storage infrastructure and increased irrigation areas are being demonstrated during the later stages of a release process. Furthermore, consideration of the timing of the release process to establish a period prior (i.e. 12 months) to allow irrigators to plan and invest, may improve the uptake and benefits of new water for the full period of a SWIR release.

It is recommended that any future considerations of SWIR water releases under water plans consider if the water demand has been exhausted, including full utilisation of existing water entitlements, increasing water efficiency and water trading prior to releasing SWIR water. A further recommendation is for DRDMW to explore if current water trading opportunities in the water trading market is an impediment to water licensees utilising their existing water entitlements.

It is also recommended that irrigators that express an interest in SWIR water releases are very clearly informed as to the temporary nature of SWIR water. The short-term release of SWIR water is not a solution to longer term water security and the importance of alternative long-term water supply is essential in the development and design of the expansion of irrigation areas. However, there are opportunities to examine how local development may provide other tangible solutions to increase long-term water security with an emphasis though that the existing water entitlements are being either fully utilised or trading market is supported by rules to facilitate this occurring.

To conclude and summarise, it is recommended that any future release of SWIR water within the State adopt the following recommendations:

- Consider the short-term nature of the release with water only able to be released for up to three years and manage expectations regarding the longer-term access to this water by entitlement holders and the community.
- Review if the demand for new water cannot be met through full utilisation of existing water entitlements, increasing water efficiency and water trading.
- Review the current water trading market and establish if changes are required to trading rules that allow water users to utilise their existing water entitlements.
- Consider pricing structure of the water and release process (fixed-price or competitive) to ensure that existing water entitlements including supplemented water are not unfairly disadvantaged.
- Consider that areas the water is made available should stimulate and enhance water trading markets.
- Ensure that any licence conditions, including maximum daily volumetric limits, are adhered to protect existing water allocations, security objectives and environmental flow objectives.
- Provide an avenue for stakeholders to raise concerns and address these (if appropriate) that may need further consideration for future releases.
- Consider the importance of strategic water reserved for future critical strategic infrastructure for Queensland and ensure that water plan reviews include reserves of unallocated water.

Appendix A Water use summary within Dawson Valley Water Management Area within 2019-2020, 2020-2021 and 2021-March 2022 (water years by location (zone)).

Dawson Valley water management area: 2019-2020 Water year: Water use summary by water allocation group (WAG)

WAG	Number of allocations	Average (ML)	Permitted (ML)	Taken (ML)	Utilised (%)
Class 13C	(11)	1,278	1,278	177	14
Class 10C	(1)	96	96	0	0
Class 13A	(2)	1,452	1,452	487	34
Class 12A	(13)	2,088	2,088	57	3
Class 11A	**(84)**	25,196	25,196	5,269	21
Class 10A	**(35)**	11,340	11,340	772	7
Class 11B	**(8)**	7,172	7,172	1,397	19
Class 10B	**(10)**	14,165	14,165	5,823	41
Total water allocations	**(164)**	62,787	62,787	13,982	22
Total number & low flow WAs	**(12)**	1,374	1,374	177	13
Total 15 cumec WAs	**(134)**	40,076	40,076	6,585	16
Total 30 cumec WAs	**(18)**	21,337	21,337	7,220	34
SWIR 2019-2022	(12)	65,900	65,900	16,257	25
Total entitlements	**(176)**	**128,687ML**	**128,687ML**	**30,240ML**	**23%**

Dawson Valley water management area: 2020-2021 Water year: Water use summary by water allocation group (WAG)

WAG	Number of allocations	Average (ML)	Permitted (ML)	Taken (ML)	Utilised (%)
Class 13C	(11)	1,278	1,278	148	12
Class 10C	(1)	96	96	0	0
Class 13A	(2)	1,452	1,060	487	47
Class 12A	(13)	2,088	1,303	0	0
Class 11A	**(84)**	25,196	18,700	3,172	17%
Class 10A	**(35)**	11,340	9,171	628	7
Class 11B	**(8)**	7,172	4,666	612	13
Class 10B	**(10)**	14,165	8,623	3,479	40
Total water allocations	**(164)**	62,787	44,898	8,536	19
Total number & low flow WAs	**(12)**	1,374	1,374	148	11
Total 15 cumec WAs	**(134)**	40,076	30,234	4,297	14
Total 30 cumec WAs	**(18)**	21,337	13,290	4,091	31
SWIR 2019-2022	(12)	65,900	43,000	21,930	51
Total entitlements	**(176)**	**128,687ML**	**87,898ML**	**30,240ML**	**35%**

Dawson Valley water management area: 2021-2022 Water year: Water use summary by water allocation group (WAG)

WAG	Number of allocations	Average (ML)	Permitted (ML)	Taken (ML)	Utilised (%)
Class 13C	(11)	1,278	1,278	0	0
Class 10C	(1)	96	96	0	0
Class 13A	(2)	1,452	1,060	0	0
Class 12A	(13)	2,088	2,028	0	0
Class 11A	**(84)**	25,196	25,196	4,086	16
Class 10A	**(35)**	11,340	11,340	1,158	10
Class 11B	**(8)**	7,172	7,172	270	4
Class 10B	**(10)**	14,165	14,165	4,834	34
Total water allocations	**(164)**	62,787	62,395	10,348	17
Total number & low flow WAs	**(12)**	1,374	1,374	0	0
Total 15 cumec WAs	**(134)**	40,076	39,684	5,244	13
Total 30 cumec WAs	**(18)**	21,337	21,337	5,104	24
SWIR 2019-2022	(12)	65,900	65,900	26,011	39
Total entitlements	**(176)**	**128,687ML**	**128,295ML**	**36,359ML**	**28%**

Appendix B Schedule B Conditions on the SWIR Licences

1. Water may be taken under this water licence when the chief executive announces the start of the announced period when the flow exceeds 2592 megalitres per day at [xxxx] Gauging Station in accordance with the Dawson Valley Water Management Area Water Sharing Rules.
2. Take of water must cease at or before the end of the announced period.
3. For water taken under this water licence, the licensee must record meter readings, time and date
   a. At the start of taking water; and
   b. At the cessation of taking water
4. Following the cessation of taking water, the licensee must transfer the data recorded to the chief executive within 24 hours.
5. The maximum volume of water that may be taken under the water licence in a day (the daily volumetric limit) is {x} megalitres.
6. No money is payable or refundable by the DNRME or the State Government on the cancellation, surrender or expiry of the licence.
7. A measuring device approved by the chief executive must be installed and working to measure the volume of water taken.
8. The water licence cannot be renewed, reinstated, relocated, amalgamated or subdivided.
9. The water licence is granted for a period of 3 years only, from 1 October 2019 to 30 September 2022 and the water returns to the State on the expiry of the water licence.
10. The water year for this water licence is 1 October to 30 September.

Appendix C Summary of water utilisation within Dawson Valley Water Management Area within 2019-2020, 2020-2021 and 2021 – March 2022 (water years by water allocation group (WAG))

Dawson Valley Water Management Area: Water use summary by location (zones) 2019-2020

Dawson Zones			No and low passing flow water allocations						15 cumec flow water allocations						30 cumec passing flow water allocations						SWIR water licences (30 cumec passing flow)					
Zone	AMTD (km)	Description	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised (ML)	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised (ML)
O	428.0–453.5	Euromba Creek Junction to Utopia Downs Gauging Station	Class 13C	(4)	342	342	**70**	20%	Class 13A	(0)	0	0	**0**	0%												
N	356.5–428.0	Upstream limit of Glebe Weir to Euromba Creek Junction		(7)	936	936	**107**	11%		(2)	1,452	1,452	**487**	34%												
M	326.2–356.5	Glebe Weir to upstream limit of Glebe Weir							Class 12A	(4)	322	322	**0**	0%												
L	311–326.2	Effective upstream limit of Gyranda Weir to Glebe Weir								(0)	0	0	**0**	0%												
K	270.7–311	Orange Creek Weir to effective upstream limit of Gyranda Weir								(9)	1,766	1,766	**57**	3%	Class 11B	(1)	493	493	**0**	0%						
J	242–270.7	Effective upstream limit of Theodore Weir to Orange Creek Weir							Class 11A	(14)	4,762	4,762	**2,525**	53%		(3)	1,552	1,552	**865**	56%	SWIR	(2)	5,500	5,500	**448**	8%
I	228.5–242	Theodore Weir to effective upstream limit of Theodore Weir								(8)	1,298	1,298	**543**	42%		(1)	658	658	**0**	0%	SWIR	(1)	6,125	6,125	**3,904**	64%
H	167–228.5	Effective upstream limit of Moura Weir to Theodore Weir								(22)	7,974	7,974	**208**	3%		(1)	1,596	1,596	**0**	0%	SWIR	(3)	10,225	10,225	**651**	6%
G	150.2–167	Moura Weir to effective upstream limit of Moura Weir								(39)	10,644	10,644	**1,993**	19%		(1)	1,805	1,805	**0**	0%	SWIR	(4)	38,000	38,000	**10,304**	27%
F	133–150.2	Mimosa Creek junction to Moura Weir								(1)	518	518	**0**	0%		(1)	1,068	1,068	**532**	50%						
E	107–133	Effective upstream limit of Neville Hewitt Weir to Mimosa Creek junction							Class 10A	(6)	2,480	2,480	**582**	23%	Class 10B	(1)	1,805	1,805	**0**	0%						
D	82.7–107	Neville Hewitt Weir to effective upstream limit of Neville Hewitt Weir								(13)	5,428	5,428	**0**	0%		(2)	2,792	2,792	**1,874**	67%	SWIR	(1)	5,600	5,600	**799**	14%
C	48–82.7	Don River junction to Neville Hewitt Weir								(10)	2,356	2,356	**191**	8%		(2)	543	543	**0**	0%	SWIR	(1)	450	450	**152**	34%
B	18.37–48	End of supplemented section to Don River junction	Class 10C	(0)	0	0	**0**	0%		(5)	558	558	**0**	0%		(4)	7,220	7,220	**3,949**	55%						
A	0–18.37	Fitzroy River junction to end of supplemented section (downstream end of Boolburra waterhole)		(1)	96	96	**0**	0%		(1)	518	518	**0**	0%		(1)	1,805	1,805	**0**	0%						

Dawson Valley Water Management Area: Water use summary by location (zones) 2020-2021

Dawson Zones			No and low passing flow water allocations						15 cumec flow water allocations						30 cumec passing flow water allocations						SWIR water licences (30 cumec passing flow)					
Zone	AMTD (km)	Description	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised (ML)	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised (ML)
O	428.0–453.5	Euromba Creek Junction to Utopia Downs Gauging Station	Class 13C	(4)	342	342	**52**	15%	Class 13A	(0)	0	0	**0**	0%												
N	356.5–428.0	Upstream limit of Glebe Weir to Euromba Creek Junction		(7)	936	936	**96**	10%		(2)	1,452	1,060	**497**	47%												
M	326.2–356.5	Glebe Weir to upstream limit of Glebe Weir							Class 12A	(4)	322	243	**0**	0%												
L	311–326.2	Effective upstream limit of Gyranda Weir to Glebe Weir								(0)	0	0	**0**	0%												
K	270.7–311	Orange Creek Weir to effective upstream limit of Gyranda Weir								(9)	1,766	1,060	**0**	0%	Class 11B	(1)	493	302	**0**	0%						
J	242–270.7	Effective upstream limit of Theodore Weir to Orange Creek Weir							Class 11A	(14)	4,762	3,810	**1,692**	44%		(3)	1,552	979	**528**	54%	SWIR	(2)	5,500	3,480	**774**	22%
I	228.5–242	Theodore Weir to effective upstream limit of Theodore Weir								(8)	1,298	1,017	**374**	37%		(1)	658	473	**85**	18%	SWIR	(1)	6,125	4,414	**2,766**	63%
H	167–228.5	Effective upstream limit of Moura Weir to Theodore Weir								(22)	7,974	6,246	**359**	6%		(1)	1,596	1,148	**0**	0%	SWIR	(3)	10,225	7,366	**3,715**	50%
G	150.2–167	Moura Weir to effective upstream limit of Moura Weir								(39)	10,644	7,283	**747**	10%		(1)	1,805	1,108	**0**	0%	SWIR	(4)	38,000	22,333	**12,745**	55%
F	133–150.2	Mimosa Creek junction to Moura Weir								(1)	518	354	**0**	0%		(1)	1,068	656	**0**	0%						
E	107–133	Effective upstream limit of Neville Hewitt Weir to Mimosa Creek junction							Class 10A	(6)	2,480	1,981	**0**	0%	Class 10B	(1)	1,805	1,312	**115**	9%						
D	82.7–107	Neville Hewitt Weir to effective upstream limit of Neville Hewitt Weir								(13)	5,428	4,337	**296**	7%		(2)	2,792	2,029	**118**	6%	SWIR	(1)	5,600	4,075	**1,613**	40%
C	48–82.7	Don River junction to Neville Hewitt Weir								(10)	2,356	1,882	**332**	18%		(2)	543	394	**0**	0%	SWIR	(1)	450	331	**317**	96%
B	18.37–48	End of supplemented section to Don River junction	Class 10C	(0)	0	0	**0**	0%		(5)	558	503	**0**	0%		(4)	7,220	3,911	**3,246**	83%						
A	0–18.37	Fitzroy River junction to end of supplemented section (downstream end of Boolburra waterhole)		(1)	96	96	**0**	0%		(1)	518	467	**0**	0%		(1)	1,805	978	**0**	0%						

Dawson Valley Water Management Area: Water use summary by location (zones) 2021-2022

Dawson Zones			No and low passing flow water allocations						15 cumec flow water allocations						30 cumec passing flow water allocations						SWIR water licences (30 cumec passing flow)					
Zone	AMTD (km)	Description	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised (ML)	WAG	No.	AVL (ML)	Permitted (ML)	Taken (ML)	Utilised (ML)
O	428.0–453.5	Euromba Creek Junction to Utopia Downs Gauging Station	Class 13C	(4)	342	342	**0**	0%	Class 13A	(0)	0	0	**0**	0%												
N	356.5–428.0	Upstream limit of Glebe Weir to Euromba Creek Junction		(7)	936	936	**0**	0%		(2)	1,452	1,060	**0**	0%												
M	326.2–356.5	Glebe Weir to upstream limit of Glebe Weir							Class 12A	(4)	322	322	**0**	0%												
L	311–326.2	Effective upstream limit of Gyranda Weir to Glebe Weir								(0)	0	0	**0**	0%												
K	270.7–311	Orange Creek Weir to effective upstream limit of Gyranda Weir								(9)	1,766	1,766	**0**	0%	Class 11B	(1)	493	493	**0**	0%						
J	242–270.7	Effective upstream limit of Theodore Weir to Orange Creek Weir							Class 11A	(14)	4,762	4,762	**694**	15%		(3)	1,552	1,552	**254**	16%	SWIR	(2)	5,500	5,500	**1,124**	20%
I	228.5–242	Theodore Weir to effective upstream limit of Theodore Weir								(8)	1,298	1,298	**373**	29%		(1)	658	658	**16**	2%	SWIR	(1)	6,125	6,125	**2,889**	47%
H	167–228.5	Effective upstream limit of Moura Weir to Theodore Weir								(22)	7,974	7,974	**545**	7%		(1)	1,596	1,596	**0**	0%	SWIR	(3)	10,225	10,225	**3,371**	33%
G	150.2–167	Moura Weir to effective upstream limit of Moura Weir								(39)	10,644	10,644	**2,447**	23%		(1)	1,805	1,805	**0**	0%	SWIR	(4)	38,000	38,000	**15,168**	40%
F	133–150.2	Mimosa Creek junction to Moura Weir								(1)	518	518	**0**	0%		(1)	1,068	1,068	**0**	0%						
E	107–133	Effective upstream limit of Neville Hewitt Weir to Mimosa Creek junction							Class 10A	(6)	2,480	2,480	**54**	2%	Class 10B	(1)	1,805	1,805	**0**	0%						
D	82.7–107	Neville Hewitt Weir to effective upstream limit of Neville Hewitt Weir								(13)	5,428	5,428	**1,084**	20%		(2)	2,792	2,792	**139**	5%	SWIR	(1)	5,600	5,600	**3,257**	58%
C	48–82.7	Don River junction to Neville Hewitt Weir								(10)	2,356	2,356	**20**	1%		(2)	543	543	**0**	0%	SWIR	(1)	450	450	**202**	45%
B	18.37–48	End of supplemented section to Don River junction	Class 10C	(0)	0	0	**0**	0%		(5)	558	558	**0**	0%		(4)	7,220	7,220	**4,695**	65%						
A	0–18.37	Fitzroy River junction to end of supplemented section (downstream end of Boolburra waterhole)		(1)	96	96	**0**	0%		(1)	518	518	**0**	0%		(1)	1,805	1,805	**0**	0%						

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