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New interim measures

Overview of changes for 2021-22

Q. What are the interim measures for 2021-22?

We listened to the extensive feedback from communities, and given the broad and mixed views, the Victorian Government will introduce an interim trade rule for 2021-22 and extend interim operating arrangements for another 12 months.

This coming year base flows averaging 1,100 ML per day will be trialled – lower than in any recent years. Higher releases of water in early summer and autumn will also be tested at times when environmental water managers have delivered larger freshes of water before, and mid-summer pulses will be kept to a peak of 3,000 ML per day. These more variable flows will support similar volumes over summer and autumn to last year, but aim to improve environmental outcomes by using lower flows between pulses so that vegetation can become established, helping to reduce erosion and protect riparian habitat.

An interim two-part trade rule matches trade to what can be delivered under the new interim operating rules. The two-part trade rule will see trade capped a 15 December so that the inter-valley trade account is run down by the end of the season, which is critical to support the following year's trade for water users.

The interim exemption from tagged use restrictions will continue for the Lower Broken Creek while we push on with work to design fair tagging rules that provide more certainty year-round for local water users, while preventing this system being exploited as a loophole around trade limits or creating additional delivery risks within the Creek or beyond in the River Murray.

Q. Why are these changes being made?

A. Since the Minister for Water announced interim operating rules, tagged use regulations and the review of the Goulburn to Murray trade rule in August 2019, the Victorian Government has worked to identify long-term options that seek to strike the balance between protecting the lower Goulburn River from prolonged high flows over summer and autumn, support trade that irrigators rely on, protect aboriginal cultural values and support recreational uses of the river.

Scientific advice on the expected outcomes of different flows on the health of the river was used to inform options to improve Goulburn to Murray trade and operating rules and extensive community consultation was undertaken to test these options with the community. The strong and diverse views heard through consultation were then used to inform a decision on the interim rules to sustainably manage trade in the lower Goulburn River.

Q. How have these changes been consulted on?

In March 2021, the Acting Minister for Water released a regulatory impact statement for public consultation, with submissions open until early May 2021. Through this period, we held 70 meetings, a mix of face to face and online



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to adapt to COVID-19 social distancing restriction. We also held 5 public webinars, with recordings available at <https://waterregister.vic.gov.au/water-trading/trading-rules/goulburn-to-murray-trade-review>. We spoke to Traditional Owners, irrigators, industry groups, environmental groups, fishing and recreational stakeholders and individuals as well as local, state and federal government agencies.

We have implemented changes that incorporate the feedback we received, including an interim trade rule that balances environmental protection with trade opportunities for irrigators and interim operating rules while we learn more about smarter, more ecologically sustainable delivery patterns to build into long-term decisions.

Operating rules for the Goulburn River

Why are the trial operating rules not the ones recommended by scientists?

Scientific advice on the expected environmental outcomes of different flows informed the design of the interim changes to rules. The interim rules are expected to avoid the kind of damage to the river caused in 2017-18 and 2018-19, substantially reducing the risk of bank erosion, and likely allow the river to slowly heal over time. They are also expected to provide protection for aboriginal cultural sites and improve recreational values compared to years with unsustainable high flows.

Changes to rules must recognise the Goulburn River as a sustainable working river and seek to strike the balance between protecting the river from prolonged high flows over summer and autumn and supporting trade that we know irrigators rely on. We recognise there is scientific uncertainty with these changes, which is why we have committed to monitoring these impacts over this trial year to incorporate what we learn into the rules before making long-term changes.

Q. The science is uncertain, so how do we know these rules are needed?

2017-18 and 2018-19 saw two years of record trade demand from Victorian tributaries, driven by extreme drought in New South Wales. This caused prolonged high flows over summer and autumn, which is the wrong time of year and caused significant erosion of the riverbanks, loss of vegetation and a reduction in habitat for small native fish in the lower Goulburn River.

The Victorian Government put in place interim protections from 2019, which have taken some pressure off the lower Goulburn River until long-term rules are put in place. This has slowed, but not stopped environmental damage to the lower Goulburn River. Trialling new operating rules in 2021-22 will see similar volumes of Goulburn IVT deliveries compared to the 2020-21 year, but in a more ecologically sustainable, variable pattern. If new rules are not put in place, we would expect to see unseasonably high flows continuing to do significant damage to the health of the lower Goulburn River.

Interim rules will ensure every water user gets fair and sustainable access to water over the long-term, balancing the needs of irrigators and the environment.

Q. How soon will the new rules have a positive impact on the environment along the banks of the Goulburn River?

We have already seen reduced environmental damage and improved vegetation since interim tagged use rules and operating arrangements were put in place in 2019. This year's trial of lower and more variable flows is expected to build on the improvements already seen.

The outcomes of the monitoring program will be publicly reported and the proposed adaptive approach will mean that as we learn more, new scientific, cultural and operational information can continue to be incorporated through improvements to any future operating rules.

Q. How will the implementation be monitored and evaluated to ensure it is doing what it is intended to do?

As part of the Victorian Government's State Budget 2021-22, announced in May, \$2.7 million is committed to monitoring over the next three years and to help inform long-term improvements to operating rules based on the first trial year.

To deliver this monitoring program we will partner with Traditional Owners, scientists and environmental managers to monitor riverbank and vegetation condition, native fish species and their habitats and Aboriginal cultural values such as sites of cultural significance and totem animals that depend on a healthy lower Goulburn River.

This monitoring will continue for three years and will inform a long-term decision on rules based on this first trial year and continuous improvement to rules in line with adaptive management principles.

The Victorian Government is committed to transparency and will make public the outcomes of monitoring. This will include appointing a Community Reference Panel with an independent chair that will ensure full transparency of monitoring and testing of this year's rules.

Q. How will higher releases or pulses be used this year?

This year, to learn more about using short higher volume releases or pulses of water over early summer and autumn to deliver IVT, we will trial two specifically timed larger pulses of up to 6,000 ML per day to seek shared benefit for irrigators and the environment. This will only occur at times when these kinds of freshes have been delivered before by environmental water managers, and only after lower base flow periods averaging 1,100 ML per day.

Mid-summer pulses are important for delivering water in a more environmentally sustainable way during the hottest parts of the year, when demands for water are high. In response to stakeholder concerns about larger freshes of water being delivered over summer, further scientific assessment will be undertaken this year to better understand how the river would likely respond before mid-summer pulses above 3,000 ML are considered.

What we learn through this first trial year will help inform how higher releases can be used to provide trade opportunity for irrigators without impacting private infrastructure or causing environmental damage.

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Trade under the new rules

Q. What do the new rules mean for trade and the irrigators who rely on it?

Around 130 GL of total net trade opportunity is expected for 2021-22 under average conditions. This trade opportunity is more than we've seen in most years under the Basin Plan, but less than in 2017-18 and 2018-19, when record trade resulted in unsustainable high flows that damaged the lower Goulburn River. These two record years were times of extreme drought in New South Wales (NSW), with zero allocations for NSW general security entitlements in the Murray and no water traded from the Murrumbidgee River.

Demand for trade is variable each year in response to seasonal conditions, water market prices and commodities. As shown in the figure below, three of the past eight years, including 2020-21, saw net trade back into the Goulburn system from the Murray. Importantly, with the new interim trade rule there will be a new limit that reflects how much trade can occur without damaging our rivers.

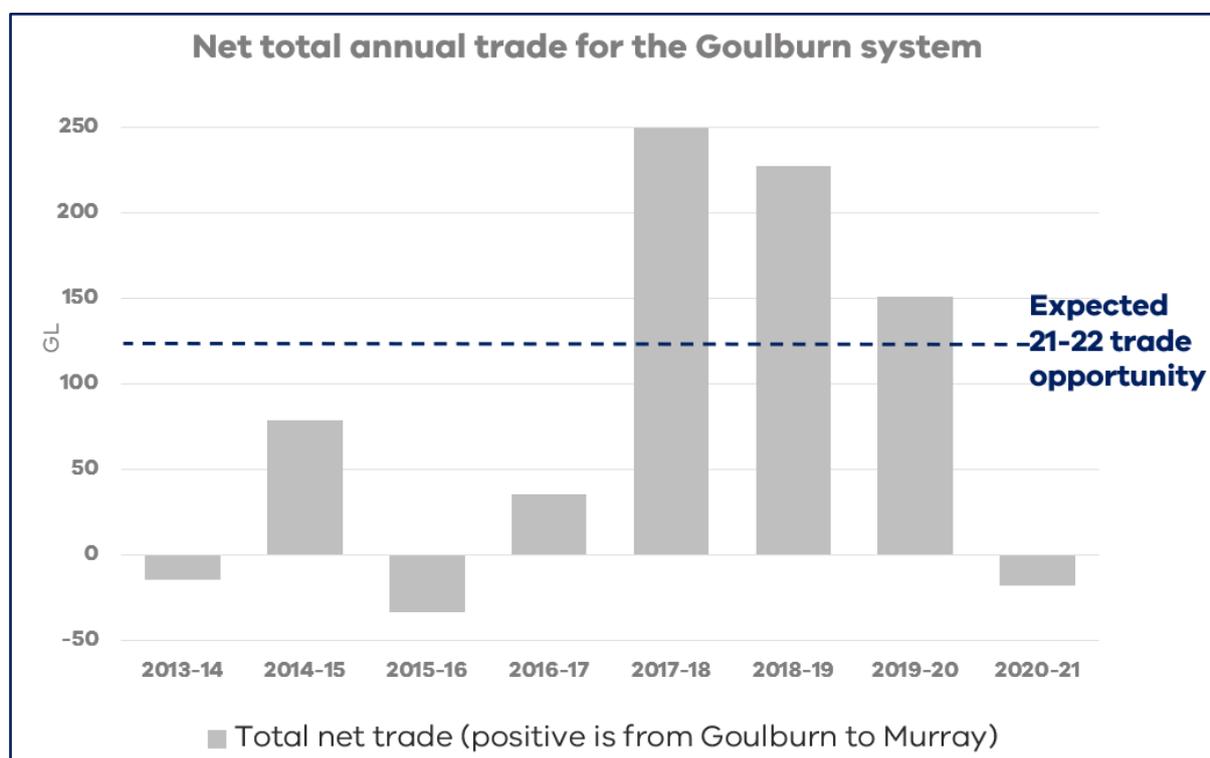


Figure 1: Total net trade from the Goulburn to Murray systems (allocation trade and tagged use only, excludes delivery of legacy commitments).

The current interim Goulburn to Murray tagging restrictions will also continue, to keep a level playing field for all types of trade and to prevent the demand for tagged water being used to get around trade limits. This also helps to reduce the volume of water that is owed for delivery from the Goulburn to the Murray systems, keeping the IVT account balance in line with what can actually be delivered.

Q. When will trade be available?

The interim trade rule means irrigators will know when trade is available earlier, to secure their water for the year ahead. There will trade available on 1 July and again through winter and spring as river operators deliver water at times when the river is naturally higher. Trade is capped from 15 December onwards so that the IVT account balance is drawn down – this is critical to support the next water year's trade opportunity when the market opens on 1 July 2022.

We've also added in a new feature to the interim trade rule that gives river operators extra flexibility to respond to seasonal conditions through spring and defer delivery of traded water to autumn or later in the year. With this new feature we can make sure optimising Murray resources won't restrict trade opportunity to provide more certainty for the market through this period.

Lower Broken Creek

Q. Farmers in Lower Broken Creek zone 6B claim changes to rules will hurt local farmers and prevent them accessing their water – is this correct?

We listened to the extensive feedback heard from irrigators in the Lower Broken Creek and customers will continue to have a temporary exemption from restrictions on tagged use while longer term options are explored and tested with the community. We're committed to putting in place fair tagging rules that don't create loopholes around trade limits but reflect the unique attributes of the system.

Any new rule will not lock out farmers in the Lower Broken Creek to prioritise lower Murray irrigators who will be sending water through the Broken Creek over summer and autumn, but instead will allow flexibility to use water from tagged accounts all year, while preventing this system being exploited as a loophole around trade limits or creating additional delivery risks within the Creek or beyond in the River Murray.

Any rule change for the Lower Broken Creek would only impact the use of Goulburn water from tagged accounts. Local zone 6B allocations would be unchanged and this water can continue to be used all year round, even if it was traded into a zone 6B allocation account from the Goulburn or other Murray trading zones.

Delivery risks in the River Murray

Q. How is the Victorian Government managing delivery risks for irrigators?

The interim rules will run down this year's IVT account balance to help manage delivery risks and provide more trade opportunity during transition to long-term rules. The interim trade rule for the lower Goulburn River will mean that we're only allowing trade to occur that we know can be sustainably delivered under the new operating rules, so that trade from the Goulburn won't increase delivery risks in the Murray.

This builds on the actions taken to date by the Victorian Government to protect existing irrigators from increasing extractions and extraction share through careful assessment of works licences.



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Victoria continues to lead in this space and will keep working with the Commonwealth and Basin states to prioritise delivery issues and look for improvements to managing these risks. We're committed to looking at feasible infrastructure options where the costs stack up, and support the Murray-Darling Basin Authority to optimise river operations as effectively as we can.

Q. Will the interim changes increase the risk of a delivery shortfall in the Murray?

A. The interim changes, which include complementary trade and operating rules, have been designed to prevent trade from the Goulburn increasing delivery risks in the Murray.

The interim rules provide for the volume traded from the Goulburn to be delivered over summer and autumn without increasing Murray system shortfall risks. They also include flexibility to ensure any should any unexpected impacts on Murray delivery shortfall risks due to trade occur, these can be effectively mitigated.

Links to the ACCC water markets inquiry

Q. How do these new rules support the ACCC recommendations for water markets in the Southern Basin?

The Australian Competition and Consumer Commission's (ACCC) recommendations support Victoria's work to design a trade rule that matches trade to what can sustainably be delivered as part of the Goulburn to Murray trade rule review. The ACCC supports dynamic IVT rules that help encourage trade to occur at times when there are fewer impacts on the river system, and reduce trade when there may be negative impacts on the river system.

The interim trade rule – together with the work that Victoria has been doing with river operators – encourages trade and delivery of water through winter and spring, when the river would naturally be higher. We're introducing a summer cap as part of this new interim rule that matches trade to what can sustainably be delivered. The new interim trade rule aims to maximise trade without damaging the environment or creating third party impacts – this is consistent with the principles that have underpinned market development in Victoria, and across the Basin for many, many years.

Questions through consultation

During the recent consultation period we heard a number of questions across the broad range of topics covered in the Goulburn to Murray Trade Review – these are captured below. The Department of Environment, Land, Water and Planning thanks everyone who attended or provided feedback and we appreciate the opportunity to engage in these valuable discussions.

About inter-valley trade (IVT)

Q. What is the Goulburn inter-valley trade (IVT) account?

A. Inter-valley trade (IVT) accounting keeps track of how much water has been traded between valleys. The Goulburn IVT account is used to track how much water is 'owed' to the Murray as a result of trade from the Goulburn, and how much of this water has been delivered by river operators. The Murray Darling Basin Authority (MDBA), as the Murray river operator, determines when water is called out from the Goulburn in consultation with Victorian agencies. The Northern Victoria Water Resource Manager keeps track of the Goulburn IVT account to maintain the balance of water needed to be delivered from the Goulburn to the Murray systems.

Q. What gets recorded on the Goulburn IVT account balance?

A. There are three things that contribute to the balance of the Goulburn IVT account:

- Allocation trade from the Goulburn to the Murray is recorded in the account when the trades are made,
- Water use from tagged accounts is recorded in the account when the water is used; and
- Legacy commitments are recorded in the account during the water year.

Legacy commitments are standing commitments that must be supplied from the Goulburn to the Murray every year. These include around 100 GL of water shares that were issued prior to unbundling in 2007 by cancelling a Goulburn water entitlement and issuing a replacement Murray water entitlement, referred to as 'exchange rate trades'. Legacy commitments also include about 40 GL of water recovered from the Goulburn system for environmental flows in the Snowy and Murray rivers as part of the Water for Rivers program.

Q. Why do changes to the current trade rule have to be made to manage flow in the lower Goulburn?

A. The trade rule prior to 1 July 2021 set a rolling 200 GL limit, allowing trade whenever the Goulburn IVT account balance is below 200 GL.

The Goulburn to Murray trade rule was developed with Victorian entitlement holders to manage the potential impact of spills from the Goulburn IVT account on the reliability of Victorian Murray entitlements. The 200 GL limit strikes a balance between allowing opportunity for trade while minimising the impact from the risk of spill by storing too much water that is owed to the Murray at Lake Eildon.

This rule was not set according to what can be sustainably delivered from the Goulburn to the Murray to manage flows over summer and autumn. The current trade rule has allowed prolonged periods of unseasonal high flows in the lower Goulburn, causing environmental damage to the river.

Q. How will the changes to the trade rule impact how irrigators manage water?

A. Changes to the Goulburn to Murray trade rule will not change who can participate in the water market, impact reliability of current water entitlements or change opportunities to carry over water. The interim trade rule will affect when buyers and sellers can trade between the Murray and Goulburn water markets.



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Just like under the trade rule prior to 1 July 2021, when trade is restricted, Goulburn water sellers will not be able to sell to Murray buyers, and instead will have to seek a Goulburn buyer. Similarly Murray water buyers will not be able to buy from Goulburn sellers when trade is restricted, and instead have to seek to purchase water from other sellers in the system, including other Victorian, NSW or SA Murray sellers below the Barmah Choke; or if trade limits allow - NSW Murrumbidgee sellers, or Victorian and NSW Murray sellers above the Barmah Choke.

Under the interim trade rule there will be less trade available than in the record years of trade (2017-18 and 2018-19) that lead to the significant environmental damage in the lower Goulburn River. These two years were times of extreme drought in NSW, with zero allocations for NSW general security entitlements in the Murray and water was not available from the Murrumbidgee River. However, the interim trade rule allows more trade opportunity between the Goulburn and the Murray in dry years with low Goulburn allocations and will provide more certainty around when trade opportunity is available for irrigators.

Q. Will changes to the trade rule mean that market prices for water allocations are higher in the Murray?

A. When the trade rule between the Goulburn and Murray is closed, prices in the Murray can rise above prices in the Goulburn. With changes to how much water can be delivered in summer months, this difference in price may occur more often or for longer periods.

Many factors influence water market prices in the Goulburn and Murray systems. The change to water market prices in the Murray is difficult to estimate and will vary with the same market drivers that exist now. Market prices for water allocation vary in response to lower seasonal allocations in dry or drought conditions as well as other factors like commodity prices.

Opportunities to trade are important for many irrigation businesses, but trade must be managed within limits that don't cause damage to our waterways or increase delivery risks for existing entitlement holders.

The interim changes will create a more sustainable system which protects the health of the Goulburn River, aligns to environmental thresholds and allows all water users to have the same access to trade opportunities.

About tagged water use

Q. What is tagging?

A. Tagging is one way that water can be traded. It is a way of tracking the source and use of water between valleys, as water from one system (e.g. the Goulburn) is 'tagged' for use in another system (e.g. the Murray). Water shares can be tagged, as well as water allocation that is obtained through trade, using this trade mechanism.

Tagging water shares is an agreed approach across the Murray-Darling Basin for managing the trade of water entitlements between valleys without having impacts on other entitlements.

Setting up a tagged arrangement is a way for customers to use water allocation that they own in other valleys. It is like having a direct debit arrangement rather than having to do a new allocation trade each time water is to be used between valleys.

The use of water from such tagged arrangements is referred to as tagged use. 'Tagged use' or 'tagging' restrictions are used to refer to restrictions (or rules) on the use of water from tagged accounts.

Q. What is a tagged account?

A. A tagged account is an allocation account which is located in one trading zone but marked for use in another. For example, an account in the Goulburn (e.g. trading zone 1A) can be marked for use in the Murray, either upstream or downstream of the Barmah Choke (e.g. zones 6, 6B and 7). This arrangement gives the holder of a tagged account the ability to use their Goulburn water in the Murray.

Q. Have the interim tagged use rules in place since December 2019 been effective?

A. Yes, the interim tagged use rules in place since December 2019 have helped manage the total annual volumes of water delivered from the Goulburn to the Murray, which jumped from an average of 60 GL a year prior to 2014 to 433 GL in 2018-19 (including legacy commitments, allocation trade and tagged use). Tagged use represented nearly half of the total net trade in 2017-18 and a third of the total net trade in 2018-19.

Monitoring has shown reduced environmental damage and improved vegetation since interim tagged use rules and operating arrangements were put in place. Interim tagged use rules have allowed river operators to keep monthly delivery volumes of IVT volumes to around 50 GL per month in 2019-20 and around 40 GL a month in 2020-21, taking pressure off the lower Goulburn River while long-term trade and operating rules can be implemented.

Q. What is a “grandfathered” tag?

A. Under Basin Plan section 12.23, water under tagged arrangements are subject to the same trade limits as allocation trade – except for tagged arrangements established before 22 October 2010. Tagged arrangements established prior to this date are often referred to as “grandfathered” and holders of grandfathered tags can continue to use their tagged allocations even when trade limits apply to others.

Under the interim tagged regulations, grandfathered tags in Victoria will continue to be exempt from trade limits until a decision on long-term tagging regulations is made (due before the end of November 2021 when interim regulations expire).

The preferred option identified in the RIS for grandfathered tags would see these arrangements restricted (and the number reduced) in Victoria over time, in line with other tagged arrangements. The proposed enduring tagging regulations would mean grandfathered tags would become subject to restrictions as they change status through changes in volume, place of take, change of ownership, or change in source.¹

¹ Refer to [Basin Plan section 12.23 grandfathered exemption eligibility rules in Victoria FAQ](#), available on the Victorian Water Register trading rules website.

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Q. Will “grandfathered” tags under section 12.23 always be exempt?

A. Victoria is committed to removing the remaining permanent exemptions from trade rules, including for tagged entitlements grandfathered under Basin Plan trading rule 12.23. Under sections 12.16 and 12.18 of the Basin Plan water trading rules, States can place restrictions on traded water within their State, if the restrictions are necessary for a number of reasons including the need to protect the environment, or to prevent third party impacts. Both of these reasons underlie the need to restrict grandfathered tags.

Victoria’s position is further supported by the ACCC’s recommendations in their final Murray-Darling Basin water markets inquiry report released earlier this year. The ACCC recommended that current exemptions for grandfathered tags be removed to improve the integrity of inter-valley trade limits and that these exemptions detrimentally affect other entitlement holders and the environment².

About the Lower Broken Creek

Q. Why have Lower Broken Creek customers been given a temporary exemption from restrictions on tagged use?

A. Despite being part of the Murray system, the lower Broken Creek (trading zone 6B) can be supplied from either the Goulburn or the Murray. In most circumstances, the Lower Broken Creek is supplied from the Goulburn under a provision in Goulburn-Murray Water’s Goulburn bulk entitlement. Water delivered to this zone is not delivered via the lower Goulburn River and therefore does not increase the environmental risk to the lower Goulburn River.

When water entitlements were unbundled from land in 2007 the customers in the creek were given a choice to hold either Murray entitlements or Goulburn entitlements. Most customers chose Murray entitlements, but a number of customers chose Goulburn entitlements and still manage their water through tagged accounts today.

Due to the unique position of the Lower Broken Creek, the environmental and delivery shortfall risks of delivering water to this trading zone are different to the risks of delivering water to other parts of the Murray system. These customers would be unnecessarily restricted if not given a transitional exemption from restrictions on tagged use while the Goulburn to Murray trade review was underway. The Lower Broken Creek will continue to be exempt from tagging restrictions in the interim while long-term tagged water rules are developed specifically for this system.

² See *Murray-Darling Basin water markets inquiry – final report*, p.23 – available at <https://www.accc.gov.au/publications/murray-darling-basin-water-markets-inquiry-final-report>

Q. Can the Lower Broken Creek exemption from tagged use restrictions just continue for the long-term?

A. The exemption from tagged use restrictions for the Lower Broken Creek has not been available to other Murray water users and was granted while long-term options could be implemented. This is only an interim measure and offers no long-term security for the way people manage their water in the Lower Broken Creek.

If nothing is done this exemption would expire on 30 June 2021 and the Lower Broken Creek customers would be restricted in line with water users in the wider Murray. As the Lower Broken Creek is in the Murray, entitlements holders can trade out their local zone 6B water without restriction to the wider Murray and use entirely from the Goulburn through tagged accounts.

Having unlimited access to use from Goulburn tagged accounts could impact the ability to deliver to meet peak daily, weekly and monthly demand for water used and traded in the Creek in the future. Even though these risks are different to those associated with delivery to the wider Murray through the lower Goulburn River, they need to be understood and managed so that trade rules are equitably made based on the same principles across the whole system.

Q. Can trade out of the Lower Broken Creek to the wider Murray be restricted instead?

A. The option to move the Lower Broken Creek to the Goulburn side of the Goulburn to Murray trade rule was explored during the first round of consultation. This option was not considered acceptable to the customers on the Lower Broken Creek as it would impact the way 95% of the high-reliability entitlement is held on the Creek, as local Murray zone 6B entitlement. We heard that Lower Broken Creek entitlement holders were strongly against making any changes to these entitlements.

Q. Why are tagged use rules from Murray zone 6 to the Lower Broken Creek not considered as part of the review?

A. As part of the Goulburn to Murray trade review, trade from the Goulburn system to the Murray system is being reviewed. Trade from Murray zone 6 (above the Barmah Choke) to the Lower Broken Creek (below the Barmah Choke) is subject to the Barmah Choke trade rule. Review of this rule would require agreement between all southern basin states and the Murray-Darling Basin Authority, which is outside the scope of the Goulburn to Murray trade review.

Q. Will the delivery of water from the Goulburn IVT account through the Lower Broken Creek continue?

A. Yes, delivering some water from the Goulburn IVT account through the Lower Broken Creek when there is spare capacity is proposed to continue to mitigate some of the damage caused by high summer flows in the lower Goulburn River. However, spare capacity and volumes that can be delivered through the Lower Broken Creek will depend on how people use and trade water in the Lower Broken Creek area.

The Department of Environment, Land, Water and Planning (DELWP) and the Goulburn-Broken Catchment Management Authority are working to ensure flows down the Lower Broken Creek do not exceed volumes delivered



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in recent years, and do not result in simply shifting the environmental damage from the lower Goulburn River to other waterways.

Q. Does delivery of water from the Goulburn IVT account through Lower Broken Creek impact the health of the Creek?

A. For over a decade, Goulburn Murray Water (GMW) has been transferring Murray and Goulburn system water through the Lower Broken Creek at the request of the Goulburn-Broken Catchment Management Authority to meet environmental flow objectives. Historically, the use of the Lower Broken Creek to deliver water from the Goulburn IVT account was primarily for meeting ecological targets for water quality and habitat provision. In recent years, higher IVT demand has led to the volume of transfers increasing in Lower Broken Creek, which helps reduce ecological damage from water transfers in the lower Goulburn River and Barmah Choke.

During initial consultation, we heard concerns about the potential for IVT to be delivered through the Lower Broken Creek in a pattern which creates similar environmental damage to that seen in the lower Goulburn River.

The Lower Broken Creek is a much smaller waterway than the lower Goulburn River, which means that the volume of water from the Goulburn IVT account that can be delivered through this system is quite small. However, sustained high flows over summer could still cause ecological damage, including bank erosion. Changes to the Goulburn to Murray trade rule will mean that overall Goulburn IVT deliveries are lower. This will reduce the kind of pressure we have seen on the Goulburn River in recent years.

Q. How is the impact of high flows in Lower Broken Creek being monitored?

A. The Goulburn Broken Catchment Management Authority has been undertaking a monitoring program to better understand the environmental thresholds of the Lower Broken Creek and inform future flow management. This will improve our understanding of the long-term sustainability of continued delivery of water-in-transit within the Lower Broken Creek and ensure IVT water is not delivered in a pattern which puts the local environment at risk from increased erosion. To date, this has included completing an assessment of bank condition to inform future flow management and weir pool operations. The aims of this work undertaken by the Goulburn-Broken Catchment Management Authority are to:

- investigate the impact of consistently high flows on the bank condition of the lower Broken Creek over the 2020-21 irrigation season, and
- identify what, if any, operational changes may be needed to mitigate any impacts from delivery of consistently high flows.

Before and after the 2020-21 deliveries, drone surveys and bank profile measurements were collected, as well as data on erosion, deposition, tree fall and changes in vegetation associated with the high flows. A temporary weir pool drawdown (within operational limits) was also trialled during the high flow period to identify whether such operational adjustments would provide any benefits to bank condition in Lower Broken Creek. Data collection is currently finishing up, with results expected to be reported by the end of August.

About river flows and operating rules

Q. How was the preferred option in the Goulburn to Murray trade review regulatory impact statement for operating rules and trade rules identified?

A. To identify the feasible and preferred options, the Department of Environment, Land, Water and Planning (DELWP):

- Released a consultation paper in early 2020 outlining the preliminary options and invited the public to provide input,
- Held webinars and public meetings to hear community perspectives during March, April and May 2020,
- Reviewed the study of a scientific panel formed to provide advice on the expected environmental and river health outcomes of different flow scenarios,
- Held discussions with Murray-Darling Basin Authority river operators to understand the impact of changes to whole of system operations,
- Commissioned an independent consultant to analyse the scientific panel's flow scenarios and put forward operating rules that optimise delivery of traded water while protecting the lower Goulburn River from the kind of damage seen in recent years,
- Sought scientific advice on the likely outcomes for the river under the proposed operating rules, and
- Tested options with the community through public consultation on the regulatory impact statement.

The identified options were assessed in the regulatory impact statement against a range of objectives, with a focus on maximising trade opportunity within ecological tolerances, without impacting existing entitlements. Options were also assessed against objectives to support the Aboriginal cultural values and the recreational values of the lower Goulburn River, and considered the impacts on waterway health in the lower Murray. The regulatory impact statement communicates the outcomes of this work and the preferred option identified, including proposed operating rules, trade rules and tagged use regulations.

Q. What is the difference in river height between 940 ML per day and 1,100 ML per day?

The difference in river height between flow of 940 ML per versus flows at 1,100 ML per day is around 10 cm. The river height at Murchison, McCoy's Bridge and Shepparton at 940 ML per day and 1,100 ML per day is compared with recent years in the table below.

Table 1: Comparing lower flow options to recent years

Flow	River height at Murchison	River height at Shepparton	River height at McCoy's Bridge
940 ML per day (lower flow option)	0.73 m	2.7 m	1.47 m

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1,100 ML per day (2021-20 interim rules)	0.85 m	2.78 m	1.55 m
1,300 ML per day (2019-20 interim rules)	0.98 m	2.86 m	1.68 m
3,000 ML per day (sustained flows in record years)	1.83 m	3.35 m	2.56 m

Q. Is there flexibility in the interim operating rules to respond to emergency issues?

A. Emergency release of water in response to a poor water quality event is not bound by the operating rules. The Goulburn Water Quality Reserve consists of 30 GL of water that can be released to meet any water quality problems in the river or the lower Broken Creek. Should an emergency water condition emerge, regulated releases of the Goulburn Water Quality Reserve can be made in excess of the limits in the operational rules.

Q. Is there flexibility in the interim operating rules for a pulse in November to achieve environmental benefits?

A. Sometimes environmental managers seek to use pulses of water to encourage fish spawning in late spring. While the interim operating rules prescribe flows over summer and autumn, environmental managers can request to use IVT pulses during that period to support environmental outcomes in the lower Goulburn River.

Existing processes for environmental managers and river operators to work together to best accommodate these requests will continue to be used. In years when spring freshes for fish spawning outcomes are required there is flexibility in the interim operating rules to bring pulses forward whilst ensuring this does not create downstream resource risks.

Q. Is there flexibility in the interim operating rules for environmental managers to use pulses in autumn to meet environmental objectives?

A. Sometimes environmental managers seek to use pulses of water in autumn to boost the growth of vegetation before winter. The interim operating rules apply to all regulated water being delivered. IVT deliveries during the autumn shoulder period can be used to achieve shared benefits for both river management and environmental watering. There is flexibility in when the pulses can occur, so long as the periods of lower base flows between pulses can be achieved. Existing processes for environmental managers and river operators to work together to best accommodate these requests will continue to be used.

About pulses

Q. How will the pulses work?

A. Flows delivered in short pulses over the irrigation season have lower environmental risk than consistent higher base flows and are more in line with the natural variability of river flows. It is important that the timing of these pulses

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allow adequate periods of lower base flow between them so that vegetation can establish and help keep banks stable. These pulses would increase trade opportunity by increasing the volume of water that can be sustainably delivered over summer. It is proposed that three pulses would occur from November to March, with average flows of 1,100 ML per day between them. These pulses would be timed to avoid impacts on key recreational dates throughout summer.

Q. What will the river height be with smaller pulses, and larger 'freshes'?

The difference in river height between summer pulses of up to 3,000 ML per day and larger 'freshes' of up to 6,000 ML per day is shown in the table below. This is well below flood level and below levels at which there can be minor river bank breaches.

Flow	River height at Murchison	River height at Shepparton	River height at McCoy's Bridge
Pulses (3,000 ML per day)	1.83 m	3.35 m	2.56 m
Freshes (6,000 ML per day)	3.04 m	4.19 m	3.98 m
Minor river bank breaches	9.00 m	9.50 m	9.00 m

These flows would only be kept at higher levels for a few days at a time, before receding back down to average base flows of 1,100 ML per day, as shown in the figure below.

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Frequently asked questions

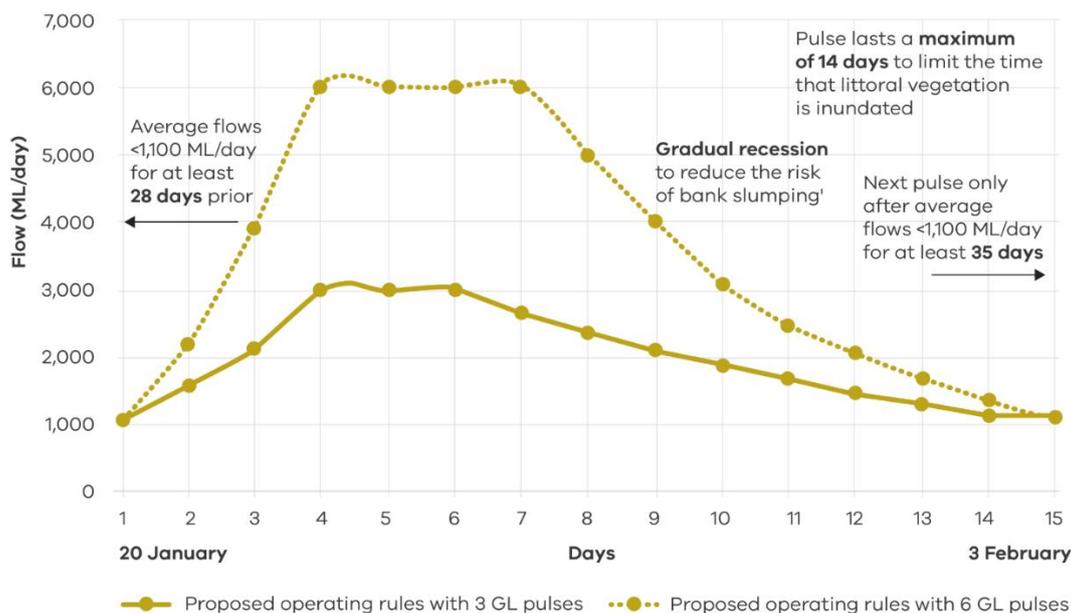


Figure 2: Example pulse flows

Q: Will the 190 gigalitre (GL) rolling limit value increase if pulses in the lower Goulburn can reach 6,000 ML per day during summer and autumn?

A. Yes – the rolling limit would increase if pulses of up to 6,000 ML per day can be used in summer and autumn to deliver IVT. Initial estimates are that in future the rolling limit could increase from 190 GL to a bit over 200 GL, which could result in up to 70 GL more trade opportunity annually if three pulses of 6,000 ML per day could be utilised to support trade opportunity. This is because the value set as the rolling cap in the interim two-part trading rule is calculated based on the volume of IVT water that can be delivered between 15 December and 30 April each year without increasing delivery risks. If pulses can be increased from 3,000 ML per day to 6,000 ML per day, more water can be delivered without further increasing the risk of environmental degradation as seen in 2017-18 and 2018-19.

During 2021-22, trial pulses up to 6,000 ML per day in early summer and autumn will not increase trade opportunity. Instead these trial pulses will be used to reduce the IVT account balance.

Q: Were pulses up to 6,000 ML per day considered by the scientific panel?

A. Yes – scenarios assessed by the scientific panel included pulses up to 6,000 ML per day. However, given the uncertainties around pulses above 3,000 ML per day peaking in February, some more work is needed to ensure an annual mid-summer pulse of up to 6,000 ML per day is not further increasing the risk of environmental degradation.

The interim operating rules, which include the ability to deliver pulses of up to 6,000 ML per day, were informed by the scientific panel's assessment as a balanced approach to allowing traded water to be delivered downstream while minimising impacts to the environment to prevent the kind of environmental damage seen in recent years. The scientific panel have provided comments on the proposed operating rules, which have been published alongside the initial environmental risk assessment and the proposed operating rules.

Q: Will losses increase with pulses of up to 6,000 ML per day?

A. There are a number of factors that affect river losses, including flow rates and the volume delivered. Losses over summer and autumn are likely to be similar when comparing sustained high flows of about 2,700 ML per day of recent years with the proposed lower base flows of 1,100 ML per day together with several 14-day pulses up to 6,000 ML per day. The difference in river losses during the 14-day pulses, whether at 3,000 ML per day or 6,000 ML per day, is not expected to be material.

Q: Who covers losses for the delivery of water from the Goulburn to the Murray?

A. Losses incurred in delivering traded water from the Goulburn to the Murray system are accounted for and covered by the provision for operating losses in the Goulburn system as a whole.

The net impact of moving traded water from one location to another is difficult to determine. There may be more or less losses than occurred when water was delivered to where it was previously used. For example, water could move a short distance downstream, a long way downstream, be traded back upstream or even interstate depending on how willing buyers and sellers are trading water. Losses may also be higher or lower depending on where water is sourced and delivered to, throughout the southern connected Basin. Any consideration of applying the costs of losses to individual transactions would need to be considered carefully and is beyond the scope of the Goulburn to Murray trade review.

Q. Why is the Victorian Government considering moving privately owned pumps in the lower Goulburn?

A. More water could be delivered through the lower Goulburn River over summer if all irrigation and stock and domestic pumps were located at the top of the riverbank. There are privately owned pumps located within the channel, which means that flows during summer and autumn currently cannot exceed 3,000 ML per day without impacting their operation. This has generally been avoided in previous years, or where environmental pulses have occurred in shoulder periods (spring or autumn), a manual notification period ahead of time has been provided.

Under the preferred operating rule, flows would average 1,100 ML per day with three additional pulses over the peak summer and autumn period. If pumps were relocated to the top of the bank, this would mean that higher pulses could be delivered, up to 6,000 ML per day, enabling more water to be delivered to meet traded demands while avoiding ecological damage to the lower Goulburn River. This is of interest not only to Victoria, but also other states who rely on traded water and environmental water holders.

Q. How many landholders would be impacted?

A. There are around 300 licenced diverters in the lower Goulburn. It is not known how many of these licensed diverters have in-channel irrigation pumps that will need to be removed and replaced with new infrastructure at the top of the bank, but it is estimated there could be up to 70. Moving these pumps would involve a feasibility study to establish how many land holders are impacted and then one-on-one discussions with these landholders. This is to enable larger pulse flows of up to 6,000 ML per day under the preferred operating rule.

Goulburn to Murray Trade Review

Frequently asked questions

Q. When would the project commence?

A. This option was tested with the community as part of the Goulburn to Murray trade review Regulatory Impact Statement and funding for implementation is being sought from the Commonwealth given the multiple beneficiaries of this project. A feasibility study will commence shortly in partnership with Goulburn-Murray Water to fully scope this project, which is likely to take up to two and a half years from commencement to be fully operational.

Q. Will higher pulses lead to flooding private property?

A. No, private land is not flooded at flows of 6,000 ML per day as this is still well within the river channel. Moving pumps is not about providing overbank flows – this is beyond the scope of this trade review. The proposed feasibility study is focused only on relocating pumps that are currently creating an operational constraint over summer and autumn.

About delivery shortfall risks and infrastructure

Q. What is a shortfall?

A. A shortfall is when water that is entitled to be used, cannot be delivered when and where it is needed. A shortfall can happen if there is either a heatwave and a sudden spike in demand (referred to as a delivery shortfall), or there is not enough capacity in the system to supply water to meet all downstream needs in summer and autumn (referred to as a system shortfall).

Q. Were infrastructure options considered to maintain or increase the ability to deliver water to the lower Murray?

A. As part of the regulatory impact statement process for the Goulburn to Murray trade review, we assessed all feasible options, including infrastructure options. While they do not present an alternative to any change, a smaller infrastructure project to pursue moving in-channel, privately owned pumps on the lower Goulburn has been recommended to improve operational flexibility and outcomes in the future under long-term operating and trade rule options.

Any major infrastructure project, including bypasses, requires rigorous cost-benefit analysis and extensive community consultation before it can proceed. Time and again, these projects have not been pursued because of up-front capital cost, ongoing operating costs to irrigators and the associated environmental and cultural heritage impacts.

A resilient system that can sustainably deliver water will rely on a combination of measures – improved trade and operating rules, efficient and smart river operations, protecting existing entitlement holders from increasing extractions that add to the risk of shortfalls, and sensible infrastructure options that help to address capacity.