

# Water market transparency

Options paper



## Acknowledgment

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.



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# 1. Introduction

Water markets have been evolving for some time across Victoria to offer fair and efficient sharing of finite water resources and for participants to choose how they use that water, rather than governments.

Large and small markets need to meet Victoria's policy aims of operating effectively, distributing water efficiently across different uses, managing any trade impacts on third parties and providing participants with open access and the confidence to make informed decisions.

Climate change and changing demands are impacting on our water supplies. This means water market frameworks and information must continue developing to match the level of demand and sophistication in the market.

As the water market price of allocation has increased to sustained high levels in 2018-19 and the current season, communities have raised concerns about the transparency of water markets and the ability of markets to serve their intended purpose.

Factors contributing to these concerns include:

- recent droughts and climate extremes producing low rainfall and inflows to dams and climate variability causing uncertainty about water supply
- a permanent decline in water available for irrigation in the southern-connected Murray-Darling Basin following Commonwealth water recovery for the environment and the impacts of limits to consumptive use under the Basin Plan
- sustained high water prices, with allocation water increasing from around \$200 per megalitre (ML) to \$800 per ML in northern Victoria since early 2018
- fierce competition for water, with water shifting from dairy to horticulture and large-scale plantings increasing the total demand for water across southern-connected Murray-Darling Basin
- emerging newer market participants, including water funds and other large holders
- many irrigators sourcing their water through the allocation market and other new products like leases and forward contracts rather than holding entitlements directly as water shares
- media reports calling for greater transparency and concern about speculators' influence on markets, as well misconduct in the wider Murray-Darling Basin outside Victoria.

Some of the people involved in water markets have suggested their concerns would be addressed best by full or greater levels of transparency, with more detailed information about who is buying and selling water in the markets.

In May 2019 the Victorian Government asked the Department of Environment, Land, Water and Planning (DELWP) to look at changes to water market transparency and trade information to strengthen public confidence.

The Minister for Water asked DELWP to investigate 'the options and benefits of a completely transparent water trading system, to provide confidence that the markets are working for irrigators and not being distorted.'

## Purpose of this options paper

This paper canvases a number of options to increase transparency in Victoria's water markets to improve confidence in their fairness and efficiency including:

- full market transparency
- publishing information on large market participants
- improving price and market depth (how much water is for sale) information.

Future improvements in market transparency could include all options, or aspects of each option. DELWP is seeking feedback from the community on these options.

This paper also details work underway to take immediate action on water market transparency.

### 1.1 Scope

DELWP has a role in regulating many of the aspects of water markets, however this options paper focuses on water market transparency.

Other market topics such as carryover and trade rules are out of scope and not discussed in this paper.

### 1.2 Process

This paper has been informed by an early round of targeted community consultation in northern Victoria in July and August 2019. DELWP heard a wide range of views from farmers and stakeholder groups, including:

- a desire for greater transparency balanced with an appropriate level of irrigators' commercial privacy
- a desire for more transparency around large water holders, to ease fears about risks of manipulation and excessive market power by people who own, buy and sell large volumes of water
- there was not enough information available in the market, and it can be hard to find and understand
- accurate real-time information about price and market depth (how much water is for sale) is really important, including tighter rules around zero-priced trades and recording market products like forwards and leases
- questions around high water prices and allowing non-irrigators to invest in the water market when the 'real value of water is to grow food and fibre'
- calls for a central water exchange for the southern-connected Murray-Darling Basin 'to know the real price of things'.

These views reflect more broadly what is being said in the media about water market transparency and have informed the options paper.

DELWP is now seeking feedback from the community on the options in this paper.

Face-to-face community consultation starts across Victoria on 1 October and runs until November. The options paper, details of consultation sessions and how people can comment or make submissions are available on [Engage Victoria](#).

The Victorian Minister for Water will consider the options and the outcomes of this consultation in late 2019.

The Australian Competition and Consumer Commission (ACCC) is now also reviewing markets for tradeable water rights across the Murray-Darling Basin and exploring options to improve the operations, transparency, regulation, competitiveness and efficiency of those markets. Victoria is sharing information to help with the ACCC's review.

### 1.3 What is in this paper

The Victorian government understands the need for greater transparency in water markets now. It is important to consult on long term changes that require legislative change, which is the purpose of this options paper. While this is happening, DELWP will publish more information on how water markets are working now.

Markets exist in various forms and for various products. We researched several different markets, as well as economic principles, to provide a background for options for greater transparency in the Victorian water markets.

A water market has to fulfill different functions to operate effectively. In Victoria's water markets, it was found that clear and easily understood information is important to give participants better access and the confidence to make informed decisions.

There are similar levels of transparency in the Victorian, New South Wales and South Australian water markets, with NSW having slightly more de-identified market information currently available than Victoria. The accuracy and currency of price data is a challenge for all three states, and various brokers and exchanges and other service providers are relied on significantly for 'current' prices.

To learn from more established markets, we compared Victoria's water markets to other non-water markets like the Australian Stock Exchange (ASX), Victorian property market, Chicago Mercantile Exchange Group and Victorian rock lobster fishery, and their levels of transparency. Some of these markets have better price and market depth information that could benefit Victoria's water markets. Most have similar levels of transparency for personal information and generally do not disclose it because of commercial sensitivity.

The detailed review of these topics can be found in the appendix (pages 27-43) and the appendix provides supplementary information to further the discussion on water market transparency.

Some of the terms used in this paper are explained in a glossary on page 34 to help understand the issues in the discussion on water market transparency.

## 2. Options for greater transparency

The options presented in the paper are not mutually exclusive, and aspects of each option or several or all can be pursued.

The options proposed in this paper were selected as they address the main concerns raised in targeted community consultation and include:

- full market transparency
- publish information on large water market participants
- improve real time information on price and amount of water available.

Each one is discussed in detail in this section.

### 2.1 Work already underway to increase transparency

The options discussed in this paper all have potential to increase water market transparency. However, as they all require regulatory change that may take some time, a work program is underway to increase water market transparency immediately.

The Victorian Water Register records water market information collected through water entitlement and allocation transactions, water use, trade limits, allocation announcements and available water. While a lot of information is already shared, we are doing more to report in a way that protects privacy while giving a clearer picture of what is happening in water markets.

The following information will be provided as new reports on the Victorian Water Register website to directly respond to community's concerns about:

- Who owns water?
  - volume of water entitlements reported by type of owner, such as active irrigator, non-active irrigator, not tied to land, water corporations and environment, with no names given
  - size of allocation holding by type of owner (as above)
- Where is water trading?
  - volumes of water trading within and between zones
  - interactive *where can I trade* tool to show how trading limits work, the current trading limits, and what trade limits were applied in real allocation trades
- What is the price of water?
  - every commercial allocation trade, the volume, price and what type of owner bought and sold it
  - every allocation trade with \$0 reported, the volume, and the type of owner who bought and sold, including where it was between the same owner
  - more accurate reporting on Murray allocation prices, by splitting out above and below the Barmah Choke, and separately reporting available water in these areas.

At the same time, a suite of initiatives is underway to make water market information easier to find and understand including:

- adding more information to the recently released Water Market Watch mobile app, including a list of most recent trades with volume and price
- improving how we share information through social media and other information channels
- a public annual report on all of Victoria's water markets

- supporting the new Waterflow information website (and soon to be released mobile apps) with current trade limit data
- working with NSW and SA to improve the consistency of water market information across the southern-connected Murray-Darling Basin.

## 2.2 Option 1 – Full market transparency

### 2.2.1 Definition of full market transparency

Different stakeholders have different interpretations of what they mean by transparency. Market transparency is generally defined by economists to be the degree to which information is available on market conditions, especially on the price, quantity available, and product characteristics. When community and the media call for transparency in the water market, they generally include who is trading and owns water.

For this options paper, full market transparency means making all information in the Victorian Water Register free, publicly available and easy to find and access, including:

- entitlements and allocations, details and names of holders
- transfers of entitlements and allocation, transaction details and names of buyers and sellers
- water use and location, amounts and names of water users
- allocation account balances, a running balance.

### 2.2.2 How full transparency differs from the current situation

#### Water entitlement information

Currently water entitlement information, including water share and take and use licence copy of records, is available to the public if the ID number is known. The copy of record includes all details of the water entitlement, including name of the owner, volume, reliability, and any linked entitlements such as water-use licences. The allocation account number and balance are not listed on the water share. The identification number must be known to obtain a copy of record and a small fee paid.

Full transparency for water entitlements would make all this information available to the public for free. It would make discovering this existing information much easier to find and access.

#### Water allocation information

In contrast, allocation account information is kept private and is not available to the public. An allocation account statement is like a bank account in that it shows a water balance, debits, credits, transfers or trades, overdraw and withdrawals or water use. It shows periodic and total water use, water-use locations or service points, allocations made and carryover details, and historical information.

Full transparency for allocation accounts would likely require a change to the Victorian *Water Act 1989*. Showing water balances and water use are major additions of information that is not currently available to the public.

Water trade activity is currently provided through the Victorian Water Register. Every trade is publicly listed with the date, volume, price and water system for individual water share transfers and allocation trades. No names are publicly listed on current water trade reports.

Full transparency of trade activity would reveal a range of extra information including:

- adding names of the buyer and seller, the allocation account numbers associated with the trade and lodging agent details of the broker or intermediary used
- adding solicitor or lodging agent details for water share transfers, whether it was a whole or part transfer, and the remaining size of the water share if it was a part transfer.

### 2.2.3 Legal considerations

In community conversations in 2005 before water rights were unbundled, people decided that water share ownership could be made public, but it was important to keep details about allocation ownership private. Allocation accounts have the daily water use and transfers that were judged to be commercially sensitive. These preferences were enshrined in the *Water Act 1989* to protect the privacy of allocation accounts and their owners.

The *Privacy and Data Protection Act 2014* provides for the regulation of information privacy, protective data security, and law enforcement data security. In addition, there are provisions in the *Water Act 1989* that apply to water market information, including general protection of people's names, barring names from being used in reports from the Victorian Water Register.

Legislative change would be needed to implement full transparency.

### 2.2.4 Potential benefits and implications

Some of the benefits of full transparency could include:

- that traders might be more inclined not to report \$0 trades, which might improve price accuracy and transparency
- the behaviour of brokers and water funds might change if their accounts were publicly accessible, potentially revealing any unethical conduct, but this could also be offset by the issue of entities choosing to hold multiple accounts
- potentially having greater insight into whether water funds have the ability to cover forward positions or not, which might indicate whether they would be looking to purchase allocation water
- specific strategies by individuals or parties might be revealed to the broader market so people could react faster, or choose not to engage with particular parties or at particular prices
- communities or the general public might view this as providing a greater level of scrutiny, though full transparency would not alter the need for regulatory oversight or compliance and enforcement.

Making more private information public would have benefits and disadvantages for different parties. It is worth noting that in initial community consultation, most people expressed the value in maintaining some degree of privacy. Some people expressed concern that making absolutely everything about the water market transparent could lead to unforeseen perverse outcomes from the use of the data, hassling by brokers, give a greater advantage to large farming businesses who have the time to trawl through all the data and disadvantage time-poor smaller family farms.

The release of extra information would reveal the commercially sensitive business and operational positions, strategies and business relationships of individuals or enterprises. This could increase market manipulation and cause broader market and regional or community issues.

There is the potential risk of people interpreting information incorrectly and turning it into misinformation. This can be exacerbated by company names, corporate entities or trustee arrangements making it difficult to show who actually holds what water.

Some participants might attempt to mask their activity or behaviours, by changing the names under which water shares or allocation accounts are held. People may choose to do this if they want to protect their privacy and do not want others to be able to identify them and their water strategies or practices.

Issues may also arise if Victoria pursues full transparency and other states do not. Only the Victorian side of trades would be transparent, and people may choose to trade in other states to avoid Victoria's transparency rules.

## Full transparency case study

A dairy farmer who has lived and farmed in northern Victoria his whole life is concerned that if water markets are fully transparent water brokers and other agriculture businesses would have too much information about how he conducts his business. He doesn't want to get any more unsolicited calls than he does already. He also thinks that people will find ways around full market transparency, setting up accounts in multiple names. He wouldn't blame them for trying, but there are some things that you just should be allowed to keep private. It's called an allocation (bank) account, and no one would expect bank accounts to be made public.

Privacy of market information exists on a scale from fully transparent to fully private. There are options to increase transparency of some areas of the water market whilst protecting the privacy of other elements. DELWP would like to know where on this scale you think each element of market information should sit.

**Table 1: Potential benefits and implications of full water market transparency**

Ability to address stakeholder concerns	Potential benefits	Potential implications and issues
<ul style="list-style-type: none"> <li>• May help identify concentration of power, but unlikely to prevent abuses</li> <li>• Won't directly or necessarily improve accuracy of price disclosure</li> <li>• Doesn't improve information on market depth (how much water is for sale)</li> <li>• Might increase confidence</li> <li>• Does broadly address what some stakeholders are calling for</li> </ul>	<ul style="list-style-type: none"> <li>• May address some stakeholder concerns and calls for more information</li> <li>• Broker behaviours and practices may be revealed which may drive improvement</li> <li>• Could show water funds ability to cover forward positions</li> <li>• Would reveal who is registering \$0 trades</li> <li>• May generally improve confidence among some stakeholders</li> <li>• Does generally improve transparency</li> <li>• Provides a partial picture of water use</li> </ul>	<ul style="list-style-type: none"> <li>• Requires legislative change</li> <li>• Workarounds exist, and may be exacerbated</li> <li>• Has a range of disadvantages to all stakeholders (loss of privacy)</li> <li>• Could create greater opportunities for collusion and market manipulation</li> <li>• May impact on business and supplier relationships of individuals</li> <li>• May entrench or exacerbate existing power imbalance and disproportionately impact those it is intended to help</li> <li>• May increase hassling by brokers and agriculture businesses</li> </ul>

## Questions on Engage Victoria

Different aspects of the water market may require different level of privacy or transparency. For each aspect below please select the level of transparency you would like for all market participants.

- all entitlements, details and names of owners
- all allocations, details and names of holders
- transfers of entitlements and allocation, transaction details and names of buyers and sellers
- water use and location, amounts and names of water users
- allocation account balances, a running balance.

Full transparency would provide some benefits to water markets, however it does come with implications and potential issues. DEWLP believes there is value in increasing the transparency of water markets in other ways.

### 2.3 Option 2 – Publish information on large water market participants

Targeted focus group consultation showed there is interest in more transparency around the bigger market participants with potential to influence prices through their market activity.

People wanted to know:

- who are the largest holders of entitlement?
- who are the most active buyers and sellers in the allocation market?

Large water market participants can be defined in several ways. For entitlements it could be when an organisation or individual owns more than five per cent of entitlements in a system, and their name and volume held are automatically listed on the Victorian Water Register website. This is similar to what happens in the ASX.

This threshold percentage could be smaller or larger, depending what the community perceives is a big enough system share to potentially influence water markets. Another option is to publish the top 20, 50 or 100 entitlement holders in a list with the volume of their entitlement. No location, use or price details are proposed for entitlements.

A percentage threshold may be harder to implement for allocation, so a list could be published of the top 20, or another number that's decided. The time in which this is published will need to be considered, and whether it is the most trades this week or financial year, or more about volume. These questions will be examined if this option is of sufficient interest to take forward.

This option of publishing information on larger market players addresses stakeholders' concerns but avoids some of the issues of full market transparency.

**Table 2: Potential benefits and implications of publishing information on large water market participants**

Potential benefits	Potential implications and issues
<ul style="list-style-type: none"> <li>Addresses stakeholder concerns about large market participants</li> </ul>	<ul style="list-style-type: none"> <li>People may misinterpret information and try to make conclusions about large players acting illegally in the market. A large market share is not illegal.</li> </ul>
<ul style="list-style-type: none"> <li>Avoid some of the issues associated with full market transparency such as information asymmetry</li> </ul>	<ul style="list-style-type: none"> <li>People may find work arounds to avoid being on these lists</li> </ul>
<ul style="list-style-type: none"> <li>Improve awareness of the activity of large participants</li> </ul>	<ul style="list-style-type: none"> <li>Wouldn't stop unethical behaviour</li> </ul>
	<ul style="list-style-type: none"> <li>Discriminatory- having different rules for different market participants may be viewed as unfair</li> </ul>
	<ul style="list-style-type: none"> <li>Likely to require legislation change to identify individuals</li> </ul>

### Large water market participations disclosure case study

This dairy irrigator in the Goulburn-Murray Irrigation District has been watching water prices rise over the past year and is concerned that large water buyers may be pushing up the price. She would like to know who the largest water holders in her area are. That way she can have more confidence that they aren't using their size and market power to unfairly push up prices. She doesn't think everyone needs to say how much water they have, just those that can have an impact on the market.

#### Questions on Engage Victoria

Do you think names of large water shareholders for each system should be publicly available? Why or why not?

Do you think the names of large allocation holders in a system should have to be listed on a public register? What benefit or disadvantage do you think this would create for the water market?

What do you think the threshold for this public reporting should be? Is it owning 5 per cent, or the top 50 in a system, or another threshold?

## 2.4 Option 3 – Improve real-time information on price and amount of water available

Transparency in water markets is not just about who is buying and selling water. Confidence in the price and the amount of water available is important for people to make informed decisions about when to take part in water markets.

### 2.4.1 Improve existing systems

In Victoria, water brokers have access to a *Broker portal* which enables the online submission and automated approval of trades. A similar functionality is available through the *My Water portal* on the Victorian Water Register website for allocation account holders to complete allocation trades without going to a broker.

Improvement in timeliness of processing trade applications and price reporting could be achieved by requiring all applications to be submitted online. Analysis of commercial trade applications (which excludes zero price trades) has identified that the most significant variation in price reporting is found in manual applications (paper forms submitted to water corporations) and to a lesser extent from the *My Water portal* (refer Figure 11).

Figure 11 shows that the majority of trades are completed through the *Broker portal*. Trades through the *Broker portal* most accurately report price consistent with the market price, compared to highly variable prices reported through the *My Water portal* and manual applications. Note the band of trades in the range of \$150 per ML to \$250 per ML that likely reflect transactions such as forward contracts.

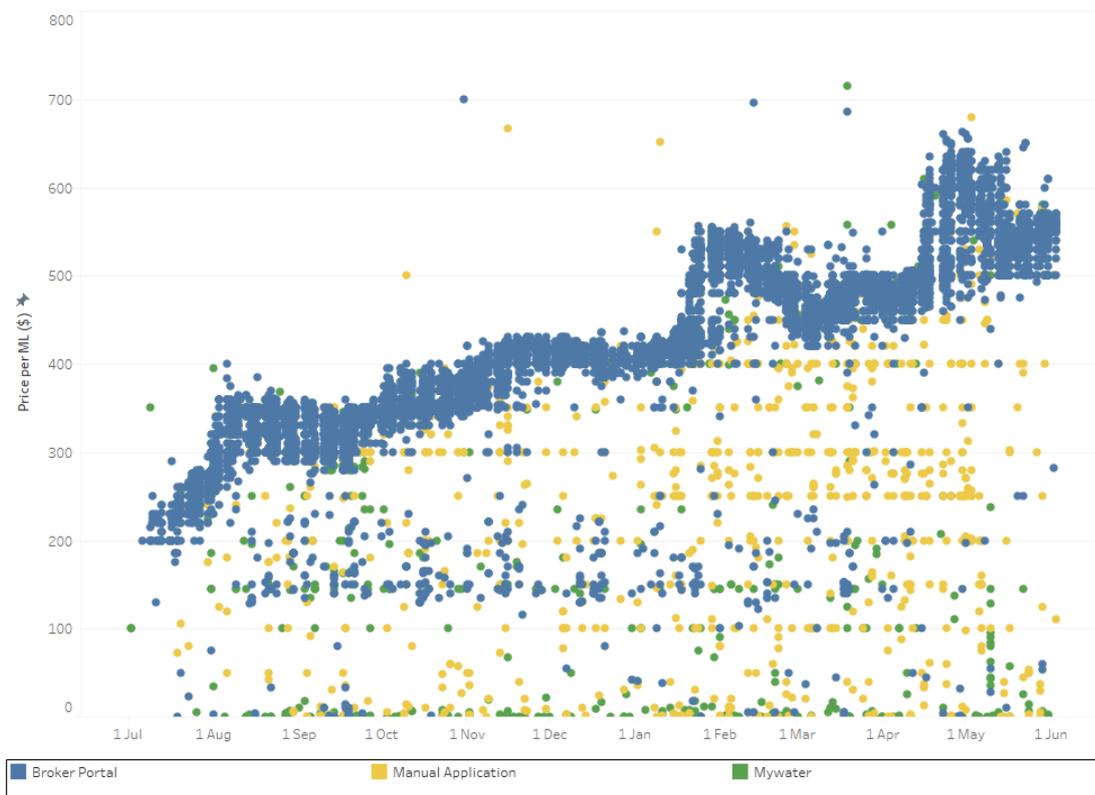


Figure 1: 2018-19 price and source of allocation trade applications in northern Victoria

Other ways the *Broker portal* and *My Water portal* can be improved for more transparency are:

- requiring a reason for trade. This would both capture useful data about different types of allocation trades like forwards and futures, and could well reduce the number of zero dollar trades recorded
- requiring brokers to report a conflict of interest when they (or a related-party) hold an account involved in the trade
- extending the *Broker portal* or *My Water portal* across the southern-connected Murray-Darling Basin to provide consistency across the southern Basin water markets
- expanding automated trade rules assessment across the southern-connected Basin water markets to speed up processing times and make transaction and price data more up-to-date
- expansion of requirements on brokers who use these automated systems would help achieve an additional degree of broker regulation.

Some of these changes can be achieved in the next 12 months, while others like extending the *Broker portal* or *My Water portal* across the southern-connected Basin will take longer. They are not expected to increase processing times or costs to market participants.

These options go some way to addressing concerns about price accuracy but cannot address the call for greater market depth or how much water is for sale.

### Improving real-time price and water availability case study

Having access to multiple water products like forwards and leases has helped this fruit grower have flexibility in her business. But the historical prices for these products aren't recorded on the Victorian Water Register, so it's hard for her to get an accurate picture of how these products fit into the market. If there were more categories than just commercial trades, she would be able to see trends like she can for allocation trade. She also thinks this would get a more accurate seven-day median price.

#### 2.4.2 Central trading platform or exchange

The information market participants most highly value is a market price that they can rely on, followed closely by knowing how much water is for sale (called market depth by economists).

Water market price and depth information is currently scattered across many sources like water brokers, word of mouth, the existing water exchanges and the Victorian Water Register, and people wonder who or what to trust when they can't get consistent and accurate information in real time.

Creating a central trading platform or exchange would give a single market price and accurately show how much water is available for sale all in the one spot.

The Victorian Water Register does not currently collect the necessary information to show market depth. The Water Register publishes allocation price through its website and mobile app. The price recorded in the Water Register, as reported by the broker who completes the transaction or the buyer if no broker was involved, is recorded on the day that the transaction is approved. This date can be several days later than when the actual deal was done because the transaction is lodged after financial settlement is finished.

Adding to the date delay, the headline price published by the Victorian Water Register is a median of the previous seven days. The reason for a median price is that it gives an indication of the market price and works quite well when the allocation market is stable.

Currently buy and sell offers are listed on various broker and exchange websites or arranged between two parties offline. There is nothing to stop one parcel of water being listed with multiple brokers. This hinders transparency because it's hard to know how much water is actually for sale, and it is time consuming to compare prices on different websites.

Many people look to one of the water exchanges to get an indication of price, but then can be frustrated when the price they are quoted is not the same. In northern Victoria the water markets operate largely through water brokers, although some trades are lodged by buyers and sellers directly to their water corporation. Water brokers will quote a price that may be true for the party they are representing, but it is difficult for both the buyer and seller to gauge the accurate market price.

Where a buyer is looking to purchase allocation from a different trading zone to where they intend to use it, the trade depends on approval through trade limits between trading zones. When there is high competition for the available volume that can be traded between zones, market participants have to prearrange the trade. They either have to use a broker or the *My Water portal* to get approval for the trade while there's opportunity

to transfer allocation between the trading zones. This also influences how real time price on the water market is reported.

### **The tristate problem**

Much of the surface water market in northern Victoria is highly connected to the NSW and South Australian water markets and carries major volumes of interstate trade.

Interstate water trade is common, but there are different fees, transaction requirements and processing times. It is hard for a participant to actually know the depth of the market, especially in the Murray system, as information is spread across three states and multiple trading zones. This adds to frustration and confusion about how much and where water is available for sale.

A new aggregated web platform called *Waterflow* is a step forward for the connected interstate water market in that it provides market information from across Victoria, NSW and SA in one place. *Waterflow* provides market information insights to help participants understand the influences on allocation and entitlement price in the various trading zones across the southern-connected Murray Darling Basin. Real time price information is provided from the brokers who have registered with *Waterflow*.

*Waterflow* is a market information service and deliberately not a central trading platform. People interested in buying allocation or entitlement from parcels advertised by the range of water brokers are directed to the individual broker's website. *Waterflow* provides more understanding of the depth of the allocation market, but it does not include all of the allocation available for sale through all water brokers, and there is potential for the same parcel of allocation or entitlement to be advertised through multiple water brokers.

### **Who has water to sell?**

This is a challenge in large and small markets. People offering their water for sale want to be sure they are getting a fair price, and this is usually confirmed by seeing what other people have paid. A platform that has all available allocation and entitlement for all trading zones and water systems would help market participants make informed decisions about fair prices. In small markets with a small number of trades, participants could find information on similar water systems to decide on a fair price.

### **What could a central trading platform or exchange look like?**

A central trading platform or exchange would require all commercial trades to go through it. Trades between related parties could still go through the *My Water portal*. A central trading platform would list all the buy and sell offers to show market depth. The Victorian Water Register (and other state registers) would remain as the authoritative record of water ownership, and any new centralised platform would sit on top of it. The specifics of a platform like this will need to be thoroughly explored before implementation and require close consultation with water market participants and water brokers.

The purpose of a central trading platform would be to:

- provide price data that's close to real time, and give more confidence in the price
- reflect the different water products with their price
- provide an indication of market depth - how much water is available on market.

Many markets, such as the ASX, have moved towards a central exchange as they matured. The connected southern Murray-Darling Basin water market is reaching a level of maturity and monetary value that mean it is worthwhile exploring the benefits from the transparency of a central trading platform. There may also be benefits for smaller water markets in increased transparency from a central trading platform.

Although a southern-connected Murray-Darling Basin central trading platform could provide greater benefit, Victoria would be willing to pursue a Victoria only platform if required.

A central trading platform would likely result in higher transaction costs and potentially increases to processing times. Prompt approval of applications has become critical to many water market participants. Although a central platform might reduce concerns about misleading information on prices, it could also create big changes to the business models of existing water brokers. This will need to be weighed up against the potential benefits of providing more transparent market price and depth information.

## Central trading platform case study

When people list their water on multiple platforms it can be really hard for this crop irrigator to tell how much water is actually for sale. He also finds it hard to get a straight answer on what the current price of water is. It seems like every site has a different price and by the time he goes to buy the water, it's gone, and he has to buy the more expensive water. He would really like to see how much water is available and at what price all in the one place so he can decide if it's a good time to buy.

**Table 3: Potential benefits and implications of a central exchange/trading platform**

Potential benefits	Potential implications and issues
<ul style="list-style-type: none"> <li>• A single trusted source of price and market depth information</li> </ul>	<ul style="list-style-type: none"> <li>• Potentially additional transactional costs to cover the operation and management of the system</li> </ul>
<ul style="list-style-type: none"> <li>• Visibility of all active buy and sell offers and bids, volume and liquidity of the market</li> </ul>	<ul style="list-style-type: none"> <li>• Increased responsibility for government if publicly administered</li> </ul>
<ul style="list-style-type: none"> <li>• Collects data not currently collected by government and therefore can provide more accurate price information</li> </ul>	<ul style="list-style-type: none"> <li>• Potential economic impacts on existing water brokers and water exchanges as they will have reduced business</li> </ul>
<ul style="list-style-type: none"> <li>• Reflect different water products and their prices</li> </ul>	<ul style="list-style-type: none"> <li>• Requires legislative change</li> </ul>
<ul style="list-style-type: none"> <li>• Ability to regulate the behaviour of brokers when using the platform</li> </ul>	

### Questions on Engage Victoria

How important is the following information? Please rank from highest to lowest

- How much water is available to buy
- How much water is being traded
- Real-time market price
- Where can I buy from and sell to
- Who is buying and selling
- How much water is being carried over
- Other (text box please explain)

How will a central trading platform with real time price and availability of water help you?

A central trading platform with real time price and availability of water may require some trade-offs. How much more would you be willing to pay in processing fees?

How much longer are you willing for processing times to be?

What functionality and services should a central trading platform provide?

## 3. Next steps

DELWP is looking for public submissions to refine and confirm options for greater market transparency.

We are inviting feedback from irrigators and the community to help refine the preliminary recommendations and develop final policy recommendations that make sense and meet the needs of water market participants now and for the future.

You are invited to complete the survey on Engage Victoria or upload a written submission.

You can also email a submission to [watermarkettransparency@delwp.vic.gov.au](mailto:watermarkettransparency@delwp.vic.gov.au)

Your feedback will help us to understand community preferences and refine the options.

Community engagement events are being held across Victoria and we invite you to attend and discuss your views on market transparency in person. Details are on Engage Victoria.

For more information about water market transparency and opportunities to get involved please contact the project team at [market.transparency@delwp.vic.gov.au](mailto:market.transparency@delwp.vic.gov.au)

### 3.1 Timeline

DELWP will review the submissions and information collected at community engagement sessions and provide recommendations to the Minister for Water for a decision on how to proceed by the end of 2019.

Work to put agreed changes into action will begin in early 2020. While some actions may be readily implemented, others may take several years.

A feedback report will be published on Engage Victoria once public submissions have been collated.

# Appendix 1 – Victorian water markets

## History

Victoria's water markets were established to allow users to move water in connected systems to where it is most needed. Markets allow farmers, environmental water holders and water corporations to buy and sell water entitlements and allocation so they can manage their own risk. Water markets that work effectively mean water users and their communities can share the benefits of water security and respond to changes in climate, reduced water availability, increased demands and fluctuating commodity prices

Victorian water markets have evolved gradually, and their performance has improved with experience. Recently we have seen more transactions within markets and faster changes in the distribution of water use and mix of market participants.

As climate change and changing demands impact on water supplies, it is even more important that our water markets work efficiently to distribute water between uses and users.

The Victorian Government will make sure that arrangements and regulations continue to support effective markets.

There are several water markets in Victoria including:

- the regulated surface water market in northern Victoria, which is part of the southern-connected Murray-Darling Basin water market
- the southern regulated surface water, or southern market
- the western regulated surface, or western water market
- unregulated surface water markets
- groundwater markets.

This paper does focus on the water market in northern Victoria, as it is the most evolved and active market in Victoria. Any changes coming from this transparency review would also be applied across all Victoria's water markets.

### **Southern regulated surface water market**

The southern regulated surface water market is made up of the Macalister system in the state's east and the Werribee and Bacchus Marsh systems west of Melbourne. These systems include irrigation district water users and river diverters that have all been declared. There are relatively low levels of trade in these systems compared to northern Victoria.

The volume of allocation trade and water share transfers in the southern market in 2017-18 was 18 GL of allocation and 8.8 GL of high-reliability water shares. In contrast, 3,317 GL of allocation and 153 GL of entitlement was traded in northern Victoria in the same year. The fundamental architecture is in place for an effective southern market, although trade beyond irrigation systems managed by Southern Rural Water and urban and environmental bulk entitlement holders has been limited.

DELWP is currently running a south central water market trial. This will build on major water security projects like increasing the connectivity of the water grid and test for significant opportunities made possible through trade.

### **Western regulated surface water market**

The western regulated surface water market is made up of the regulated Glenelg and Wimmera systems. The systems support a number of uses and users including rural, mining, urban, environmental and recreational water, supplied under bulk or environmental entitlements.

### **Unregulated surface water markets**

Unregulated streams or water courses cover the entire state, but the nature and level of market use and development associated with them varies. It may involve commercial and non-commercial uses, stock and

domestic use and irrigation. Generally, these markets may support smaller enterprises, given the lower volumes of water available and less reliable flows.

### **Groundwater markets**

There are groundwater markets across Victoria, with trade mostly restricted to aquifers and basins. Most groundwater markets are in early development, with groundwater use and trade more advanced in the north of the state. Groundwater trade has been increasing steadily in recent years with trade observed in many locations.

### **Water market evolution**

The evolution of water markets has benefited market efficiency and given irrigators options to help manage their agricultural businesses. These benefits include new water market products, improved market liquidity, greater price smoothing particularly between seasons, better risk management and options for irrigated agriculture to adapt to rapid, continuous change.

### **Market participants**

In recent years, shifts in supply and demand have driven an evolution in market structures and market behaviours. Increasing water demand, tightening of water supply and drought conditions have increased the value of water. Combined with developments in water management policy like the Murray-Darling Basin Plan and increasing use of carryover throughout the southern-connected Basin, this has driven a wave of market transformation in the years since the Millennium Drought.

Traditionally, water markets participants were small-scale irrigators, and some brokers who negotiated their market transactions. In the last years of the Millennium Drought from 2009-10 to 2011-12, the Commonwealth Government recovered a significant volume of water entitlements for the environment through tenders.

At that time allocation prices were significantly lower and entitlement prices reached record levels. Many small-scale irrigators restructured by selling off part or all of their entitlements and came to rely on allocation markets or entitlement leases for their water needs. It is also important to note that many irrigators operate entirely, or for years at a time, in isolation to water markets as they simply use the water allocated to their accounts.

At the same time, surging commodity prices in many industries have driven the entrance and expansion of larger agribusinesses in the southern Murray-Darling Basin to capitalise on favourable agricultural conditions. In contrast the dairy industry has experienced difficult seasonal conditions and subdued milk prices until very recently, creating significant pressures for dairy farmers competing with producers in other industries to secure their water.

A number of new entities like retiree water owners, water-focused investment vehicles and water traders have entered water markets, as part of the evolving conditions and market structures. These new entities have provided different services and introduced new market products to traditional water market participants and irrigators.

This activity has produced new products, increased market liquidity, smoothed prices between wet and dry years, offered more risk management options for irrigators and helped markets adapt to change. It is important to understand that many traditional and new entities may play several different roles in water markets.

### **New water market products**

The evolution of water markets is most evident in the range of new products. These industry innovations are extra products beyond the more traditional water entitlements and water allocations.

The new products directly benefit both small-scale irrigators and large-scale irrigated agribusinesses. Their variety provides more options than ever before for risk management and better support for managing farm businesses. They enable irrigators who chose to use their capital for purposes other than owning entitlements to access water, and young farmers without substantial capital to enter irrigated agriculture.

Many of these water products provide forward price signals, which help to improve water market information and give irrigators more insights for making productive decisions.

Entitlement has to be bought or owned by existing investors, such as retired irrigators, and used as the source for any of these products to exist.

Existing and new water market products include:

- entitlement leases
- forwards
- carryover parking
- call options.

**Entitlement leases:** Irrigators can lease an entitlement over multiple years, rather than owning entitlement outright. This option makes water entitlements an operational expense rather than a capital expense. Entitlement leases allow an irrigated business to have enough water entitlement for their needs without having to outlay the expense upfront. Entitlement leases carry the same exposure to allocation risk between wet and dry years as owning an entitlement.

**Forwards:** These allow irrigators to lock in an allocation price for the following year(s). This is the only product that guarantees an irrigator a set volume of water in future years. Typically forwards trade for a premium on the allocation price, reflecting the cost of carrying the water over to next year. In effect, it transfers the risk from the buyer to the seller of a forward.

**Carryover parking:** Owners of entitlements with the right to carry over unused allocation can rent this right to other irrigators or water owners for a single season. This is a low-cost option and allows for greater risk management and managing farm business between years.

**Call options:** A call option gives the buyer the right, but not the obligation, to buy water in a future water season for a fixed strike price. It is like a forward but is slightly more flexible. If the allocation price is lower than the strike price, the purchaser can elect to buy from the water market instead of carrying out the call option.

### Role of investors

Investors have a role in most well-functioning markets. They provide services and liquidity that would not be available if there were only consumers in the market. Investors have an incentive to sell because they have no other way of making money from the product, whereas a consumer may choose to use or sell the product. The benefits investors provide can include:

- supplying a range of new water market products
- increasing market liquidity
- smoothing prices between wet and dry years
- allowing greater risk management for irrigators
- helping markets adapt to changing conditions
- improving market information.

### Roles and responsibilities

Regulation of the water market is covered by several organisations whose roles are summarised here:

#### **Department of Environment Land Water and Planning (DELWP)**

DEWLP is responsible for policy development, legislation and regulation of water management and water markets in Victoria. In Victoria it oversees the water market and works closely with rural water corporations to set, review, and enforce rules and regulations for water entitlements, including water shares and other forms of licences, and the water market, including trade rules.

DELWP is responsible for the Victorian Water Register which stores all ownership information about water and provides a range of water market information.

### **Australian Competition and Consumer Commission (ACCC)**

The ACCC's primary responsibility is to make sure that individuals and businesses comply with the Commonwealth competition, fair trading and consumer protection laws. In the water market the ACCC enforces the Commonwealth Water Act and works with the Murray-Darling Basin Authority on compliance with Basin Plan rules.

The ACCC also has important roles in enforcing the law on anti-competitive conduct or practices. People can make a report to the ACCC if they suspect anti-competitive behaviours are occurring in the water market.

### **Australian Securities and Investments Commission (ASIC)**

ASIC is the national financial regulator. It does not specifically regulate the water market because water is not considered a financial product, but ASIC administers the *Corporations Act 2001* which may apply to some market participants.

### **Consumer Affairs Victoria (CAV)**

Victoria's consumer regulator aims to help create a competitive and fair market place for businesses and consumers. CAV may be relevant broadly to water market participants if they face challenges with service providers acting in ways that do not comply with occupational legislation or consumer laws.

### **Australian Water Brokers Association (AWBA)**

The Australian Water Brokers Association's main role is to set and maintain standards of professional practice, education, ethics and professional conduct for its members and the broader water broking industry. The AWBA has published a voluntary broker code of conduct<sup>1</sup> for its members to follow.

### **Murray-Darling Basin Authority (MDBA)**

The Murray-Darling Basin Authority is responsible for regulating and enforcing the Basin Plan's water trading rules.

## **Price drivers**

The ability to trade allocation within the southern-connected Murray-Darling Basin means that market prices reflect water availability and changes in irrigation demand across the entire southern Basin.

Figure 3 shows how allocation prices vary depending on water availability in northern Victoria, climate conditions and water availability in the NSW Murray.

Water availability in the NSW Murray and Murrumbidgee has a very strong influence on market prices in Victoria.

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<sup>1</sup> [http://awba.org.au/wp-content/uploads/AWBA\\_Code\\_of\\_Conduct\\_June-13.pdf](http://awba.org.au/wp-content/uploads/AWBA_Code_of_Conduct_June-13.pdf)

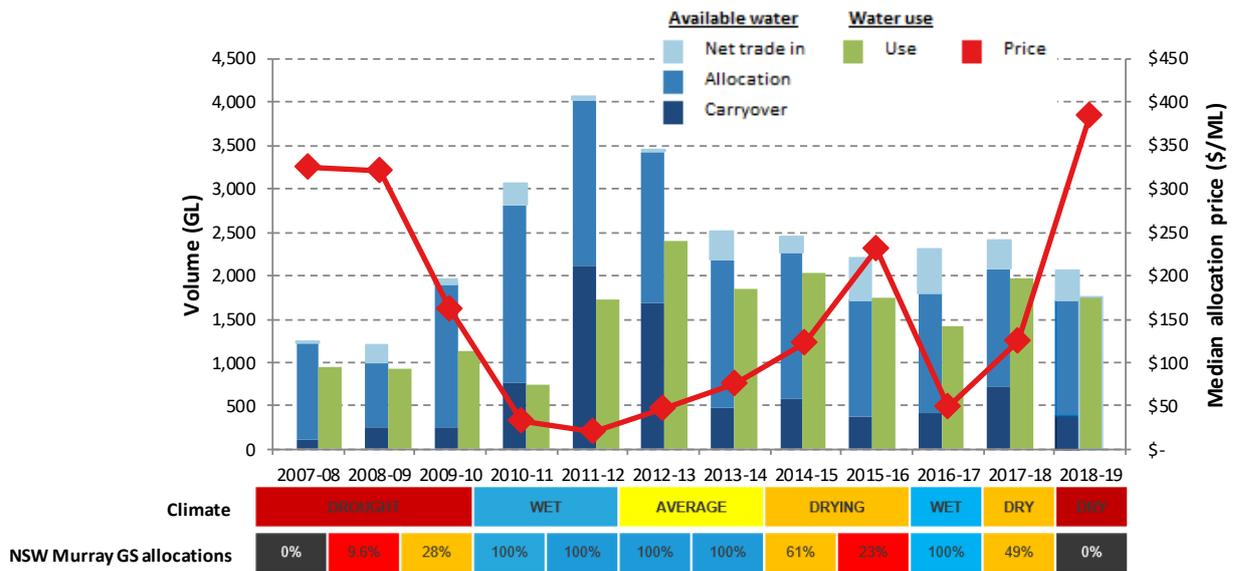


Figure 3: Northern Victoria available water and use by active irrigators and median annual allocation price.

In 2018-19 market prices have risen sharply because of:

- drought in NSW and hot and dry conditions that have resulted in increasing competition for water to meet irrigation demands in the southern Murray-Darling Basin
- reduced water availability with zero general security allocations in the NSW Murray and lower carryover in northern Victoria
- good commodity prices for many key horticultural crops, and some annual crops committed to production under forward contracts.

There are likely to be lower seasonal determinations across the southern-connected Basin in 2019-20 under a dry to very dry climate scenario and it is anticipated there will be increased demand for the available water.

## Appendix 2 – What makes an effective market?

When exploring market transparency, it's important to consider the purpose and objectives of the water market and what criteria and indicators can be used to assess if it is working.

### Purpose and objectives of water markets

The purpose of water markets is to efficiently manage the allocation and reallocation of water among competing users, given scarcity and increasing demand, and in the context of a cap on total water extractions.<sup>2</sup>

Based on various policy and legislative statements or commitments, a summary of the objectives of water markets includes that they:

- make sure water is allocated and used to optimise economic, social and environmental outcomes
- enable efficient allocation of water
- ensure scarce resources are allocated to their most valuable and productive uses at any given point in time, depending on appropriate rules and controls
- allow reallocation of water within and between regions, including interstate
- support the environment and protect third party interests.

When exploring recent criticisms or concerns, it is important to note that the water market exists to serve the public policy purpose of efficiently allocating and using scarce resources.

Its objectives do not include seeking to benefit or disadvantage any stakeholder group or individuals, so it's necessary to keep the market's purpose and objectives in mind when considering its effectiveness.

### Key principles of ownership and non-water users

Some concerns expressed about the market point to the idea that only certain types of users or uses should be allowed to participate in the water market. However, this works against key principles and objectives of markets, including not allowing the most efficient allocation of scarce water resources.

Water cannot be allocated to its most efficient use or users if markets discriminate against who can take part and some uses or users are excluded from the water market.<sup>3</sup>

People have raised concerns about the nature or extent of non-water users owning water, as this could indicate hoarding of water for non-productive use or be inflating prices.

However, it is also true that many irrigators significantly benefit from the flexibility offered by being able to hold water separately from land.

The ACCC commented that ownership restrictions are 'inherently distortive' in its Water Trading Rules Final Advice in March 2010. It said that such rules prevent participation and restrict efficient market operation including:

- preventing water reaching its highest value use
- preventing more innovative products being developed
- preventing existing holders realising the full value of their assets, and
- hindering other important reforms.

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<sup>2</sup> <https://waterregister.vic.gov.au/images/documents/Evolution%20of%20Victorias%20water%20markets.pdf>

<sup>3</sup> Addressed by Objective 4 in DELWP's water market effectiveness framework, which states *Participants have open and non-discriminatory access to water markets.*

When it developed trade rules, the ACCC also 'did not consider that it was necessary or appropriate to prevent non-landholders purchasing water allocation.'<sup>4</sup>

Victoria previously had two specific trade rules associated with the expansion of water markets and introduction of water shares. These included a 4 per cent limit on entitlement trade out of an irrigation district, which was designed to slow or control the rate of structural adjustment in irrigation areas, and a 10 per cent limit on non-water user ownership of entitlements which was designed to prevent 'water barons' buying up excessive amounts of water.

Both rules were removed in 2014 to move Victoria into line with the Murray-Darling Basin Plan. The Plan required that trade be free of any restrictions unless they can be justified for specific reasons, like not being able to deliver water, effects on third parties or effects on the environment.

It also worth noting that certain labels used in Victoria can be misleading or misinterpreted. Water that is reported as 'not tied to land' does not indicate that the water is not being used for productive purposes, nor does it suggest it is being hoarded. Indeed, both investors and irrigators hold water 'not tied to land' to suit their business for various reasons. It is worthwhile noting that a lot of these water shares 'not linked to land' are still held by farmers who regularly shift their water allocations for use - this accounts for as much as 40 per cent of water entitlements 'not tied to land'.

## DELWP's market effectiveness framework and review

In 2018 DELWP sought to better define market effectiveness. This was done to improve understanding of markets and make initial and ongoing assessments about whether markets were working as intended.

The assessment framework further refined water market objectives and developed 10 criteria with a large number of indicators to use in assessing water market performance. The criteria most relevant to issues raised in this paper are:

- a) sound governance and regulatory arrangements, including for market operation and operators and government market participants. An indicator under this criterion relates to confidence of market participants in regulations
- b) clearly defined trade rules are working effectively to address hydrologic and environmental third-party impacts. Indicators exist around ensuring access to and understanding of trade rules for a level playing field, and making sure trade rules do not discriminate
- c) transactions are cost-effective and timely, including transactions with government and intermediaries. Indicators relate to performance of intermediaries, and market participants' confidence in them
- d) absence of anti-competitive practices or behaviour by any market participants, including intermediaries. Several indicators are relevant, including on concentration of ownership, whether prices move in accord with supply and demand, and existence of a single authoritative source of price information
- e) timely, accurate and readily accessible market information. Indicators exist on quality and accessibility of information, price discovery and participant satisfaction with information.

Overall there was no evidence in the review to suggest any major examples of anti-competitive behaviour or practices.

But there are opportunities to collect more information to understand peoples' concerns, improve water market information, work with other states and agencies to improve communication about existing regulations and to monitor complaints.

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<sup>4</sup> See <https://www.accc.gov.au/system/files/Water%20trading%20rules%20-%20final%20advice.pdf>

### Why is transparency important?

Market transparency includes transparency about price, characteristics of the products, the quantity available - or market depth - and location. Although market transparency is closely linked to market information, transparency needs to be considered separately because it has a narrower meaning.

Price transparency is vital for buyers and sellers to understand the true state of the market and what they agree is the current price, and formulate their bids or offers accordingly.

Market depth informs buyers and sellers how they may have to structure the sale or purchase of the volumes they need, or what opportunities they have to do this, at prices they are prepared to pay.

Product characteristics and location are essential for knowing what is being bought or sold and determining its value.

In combination, most of these elements are simply required to make sure the market operates efficiently. These elements of price, product characteristics and market depth are the key areas of transparency that are truly required for effective market operation (i.e. it does not extend to private information). For example, if there is a general concern about ownership or manipulation and poor price information, then market confidence is likely to be affected.

### Murray-Darling Basin Plan market requirements

The Murray-Darling Basin Plan sets out water trading rules that are designed for the operation of efficient and effective water markets<sup>5</sup>. The rules aim to:

- reduce restrictions on trade
- improve transparency and access to information
- improve market confidence through a more effective water market.

### Murray-Darling Basin Authority price audit

Accurate price data is an important element of transparency. In 2019 the Murray-Darling Basin Authority conducted a price audit. One of the recommendations to improve price, and therefore market transparency, was that where a price is submitted as zero, a reason for the zero value must be provided<sup>6</sup>. Victoria has rules in place to regulate zero price trades, and is open to further improvement.

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5. <https://www.mdba.gov.au/managing-water/water-markets-trade/basin-plan-water-trading-rules>

6. <https://www.mdba.gov.au/publications/mdba-reports/audit-assurance>

# Appendix 3 – Transparency in southern-connected Murray-Darling Basin water markets

## Transparency in Victoria

Victoria provides a range of information on water share characteristics, operation and ownership details. These details can be searched if the Water Entitlement Entity (WEE) number is known.

No information is made public about individual water allocations.

The Victorian Water Register provides information on:

- how many water entitlements have been issued
- seasonal water availability information
- water availability by owner type and unused (Figure 4)
- charts on volume and price of water shares and allocation
- trade limits and where trade is possible (Figure 5: Where can I trade tool5)
- allocation and water share trade data updated daily
- tracking allocation trades and water share transfers
- risk of spills from dams.

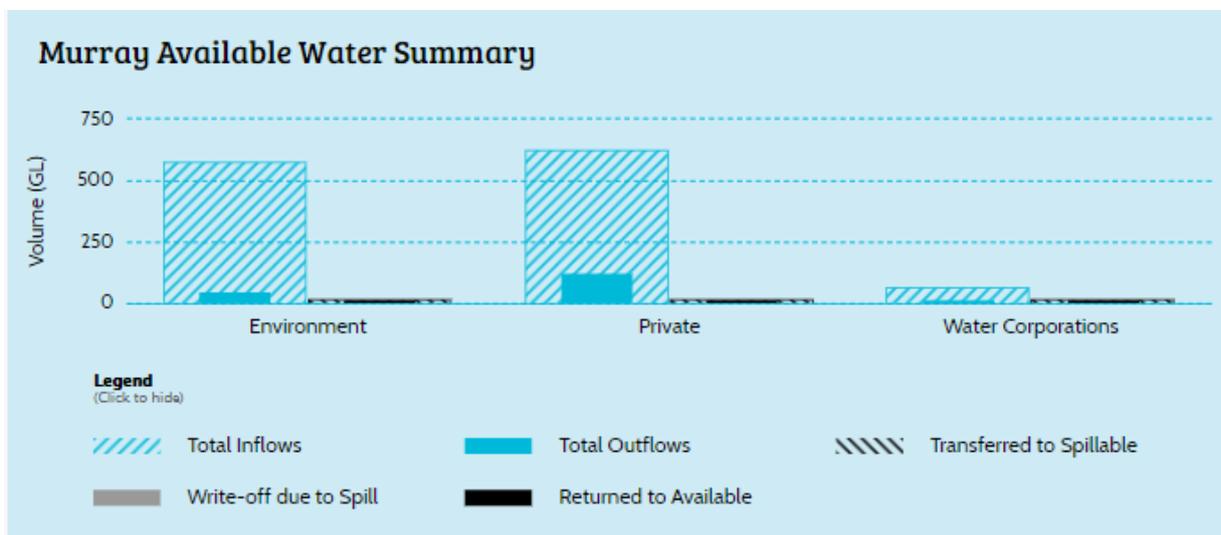


Figure 4: Water availability by owner type from the Water Register website

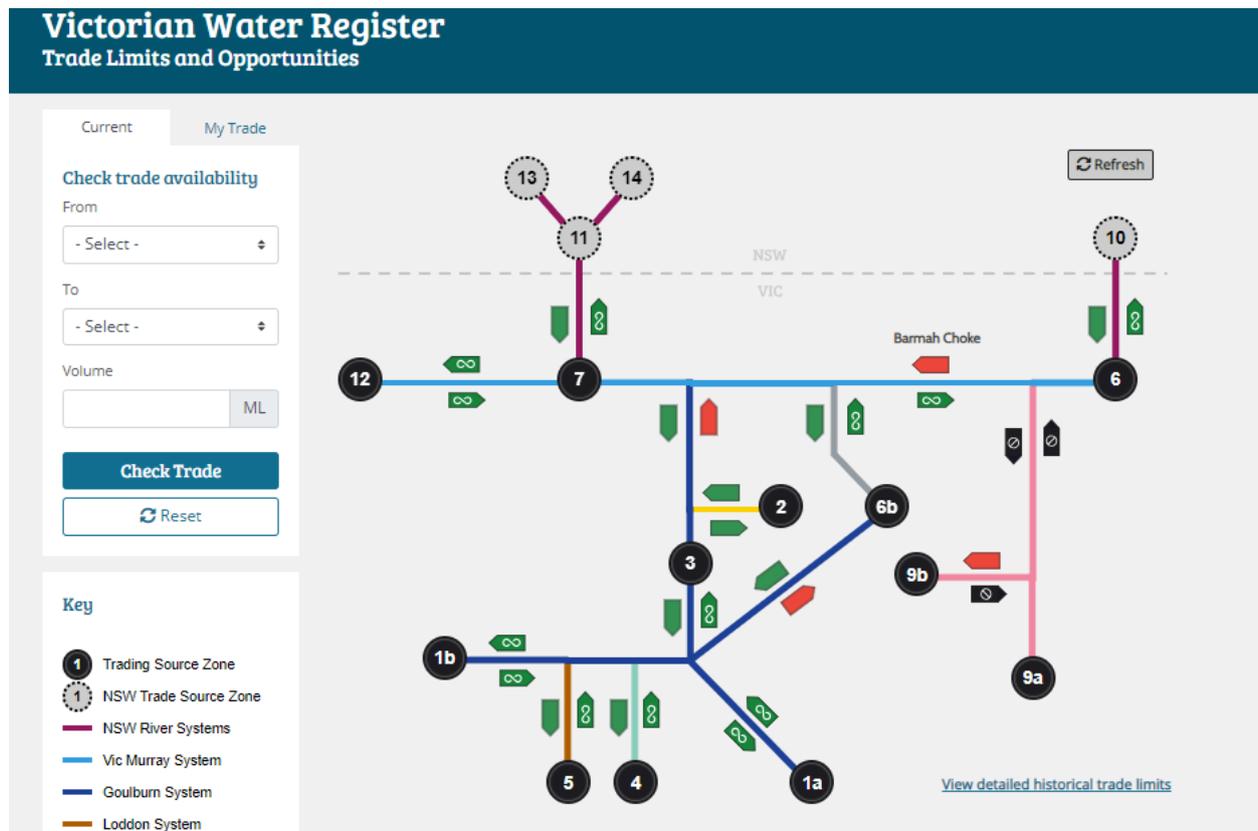


Figure 5: Where can I trade tool

The Victorian Government provides a web platform (*My Water* portal) which provides access to the Victorian Water Register and allows registered users to see their accounts and trade allocations.

Understanding how much water is on the market at any given time requires checking with multiple brokers or exchanges. Full records of how much trade has occurred and historical prices are available through the Victorian Water Register website, but names of buyers and sellers are not publicly available.

The Victorian Water Register website provides price data for approved historic trades, however there are recognised issues of inaccurate price disclosure, recording delay and no differentiation between different types. There is no single exchange that provides an authoritative source for prices.

Water-use data is not available at the individual level, but some third-party sources like the Australian Bureau of Statistics provide aggregated past water-use information based on surveys. The Victorian Water Accounts also provide aggregated water-use data, but reports can be delayed significantly and sometimes not published until well after use.

Water share ownership is the only area where private information is currently available for water markets in Victoria. These records are available to search and retrieve where the Water Entitlement Entity number is known. No other individual level data is published or generally available.

Water share records do show linked water-use licence numbers or other associated approvals, and these can potentially be searched or revealed once they've been identified on the water share record.

### Legislative and regulatory basis for current levels of disclosure in Victoria

In community conversations about water market information in 2005 before water rights were unbundled, it was decided that water share ownership could be made public, but it was important to the community at the

time that details about allocation ownership were kept private. Allocation accounts have the daily water use and transfers that were judged to be commercially sensitive.

Both of these community preferences are reflected in the *Water Act 1989*.

## Transparency in New South Wales and South Australia

New South Wales and South Australia are broadly similar to Victoria, but there are slight differences in accessibility of certain information.

- Both states allow water licences to be searched for by licence numbers, which reveals ownership details for those licences. Both may have some potential to reveal water licences or works and use licences, associated with parcels of land, by searching in separate land use or titles registers or information sources.
- South Australia allows search for allocations based on allocation account numbers. This will reveal the name of the holder of the account and the opening allocation but will not reveal the annual trade or water used under that account – even if it is the account holder searching.
- Both states have similar provision of data about trade activity for all approved water entitlement and allocation trades, including historic volumes, prices and to and from locations. Water access licences (WAL) numbers are provided for individual trades in NSW, but no licence numbers are provided for individual trades in SA. Neither state provides other data associated with trades, like counterparties to the trades, brokers involved and whether trades were related party or otherwise.
- In both states, private brokers and exchanges are used to carry out trades and advertise current prices, as well as provide a source of information on market depth. Neither state has a single centralised exchange or single source of price information, beyond its own water register prices.
- NSW currently has more sophisticated and extensive information on its register about its market and associated drivers of water markets, but SA is also upgrading its register and associated systems.
- Individual water-use information is not published by either state. But they can both reveal water-use or works licences, or similar equivalents, if the relevant water licence or permit number is known. This can reveal ownership and may show the intended or allowable purpose of water use. State-wide water accounts published at a water system level in NSW provide some understanding of aggregate water use but are published some years later.
- In NSW it is possible to ‘triangulate’ land title information searches and WAL numbers, plus works or use licences, if people know how to do this. It doesn’t reveal any more private information beyond WAL ownership details, but may help determine a WAL number for a given parcel of land where the number was not already known.

Apart from the ownership of water licences or entitlements, certain works or use approvals licences and very limited information on allocation accounts in SA, ownership and other private information is not available in either state about who owns and is trading water and what they are using the water for.

Even ownership information is not simple to obtain, with licence numbers generally only available to people considering a transaction involving a specific licence.

## Comparison of states

Victoria, New South Wales, and South Australia are very similar in disclosure of private information in the water market and market transparency generally. The quality and extent of accessibility of market and associated information varies, but the approach to disclosure of private information is very similar.

Ownership of water entitlements like shares or licences can be revealed by internet and fee-based searches when the relevant licence number is known.

Information on individual water allocation status and history, as well as water use, is not available in any of the three states. In SA an owner of an allocation account can be revealed if the number is known, but this only shows opening allocations.

None of the three states indicates the counterparties or various other details associated with individual trades on their water registers. Each provides prices, volumes, dates, and water systems involved, and in some cases the associated to and from licence numbers. In NSW, and potentially also in SA, it may be possible to triangulate between land titles information and water registers to reveal water licence numbers where they are not known. But this requires knowing the relevant land parcel and only avoids the need to be given a licence number, and it still means that only the licence or permit owner information can be revealed.

The accuracy and currency of price data is a problem that continues to challenge all three states. Various brokers, exchanges and other service providers operate in all states and are relied on significantly for 'current' prices.

## Appendix 4 – Comparison with non-water markets

Although water markets are unique in many ways, it can be useful to look at how transparency works in other markets.

### Markets selected for comparison

Four alternative markets have been selected for comparison with Victorian water markets. These were chosen based on relative comparability and because of stakeholder concerns or suggestions, including frequent references to ASX disclosure requirements.

They are also conceptually similar to the water market in having a relatively fixed amount of product or service available for trade.

A summary of transparency elements of each of these markets is presented in

Table 44.

### **Australian Stock Exchange (ASX)**

The Australian Stock Exchange is the main exchange in Australia for buying and selling shares in companies. It is one of several exchanges that provide this function in Australia, although in reality it operates as a near monopoly. The ASX is a very mature market as the result of more than 100 years of equity trading in Australia and evolving from a number of separate state-based exchanges.

### **Victorian rock lobster fishery**

In the Victorian rock lobster fishery, a capped number of licences are issued, and these are like water shares in some ways. Annual quotas associated with the licences are determined by government fisheries agencies, which is very similar to the process of deciding how much water is available and can be allocated to different water shareholders.

### **Victorian land property**

Property is probably one of the most familiar markets to most people. A buyer or seller often uses a real estate agent for the process of exchanging land property, like using an intermediary broker in the water market. Land Use Victoria does the administration and record keeping and information is stored on the Victorian Land Registry. There is a large amount of regulation in the property market.

### **Chicago Mercantile Exchange Group (CME Group)**

The Chicago Mercantile Exchange Group (CME) (formerly Chicago Mercantile Exchange & Chicago Board of Trade) is the world's leading derivatives marketplace. It offers futures and options based on interest rates, equity indexes, foreign exchange, energy, agricultural products and metals. The CME is also a very mature marketplace, from the merger of Chicago Mercantile Exchange & Chicago Board of Trade, both of which had been operating for more than 100 years.

### **Disclosure of ownership in the Australian Stock Exchange**

Companies listed and traded on the ASX are subject to disclosure rules. When 5 per cent of total equity is owned by one individual or entity party, they must disclose this to the market. This is done by posting on the ASX Market Announcements Platform and the information is usually included in a company's annual report.

Once 10 per cent is acquired this is deemed to be a blocking stake, but there are no additional disclosure requirements apart from updating the percentage. Once 20 per cent is acquired, no more equity can be obtained without launching a takeover offer.

The reason for this disclosure to inform the market is that substantial holdings might affect the value of shares, including the potential for takeovers, or allow that substantial holder to influence the company's operations. This information allows the other participants in the ASX to make informed decisions about the stock price and their dealings with that company.

Once the disclosure occurs there are no repercussions, unless a regulator views it as anti-competitive.

### **How would this work in the water market?**

There have been calls to institute similar disclosure rules for the water market to address perceived misuse of market power. A similar threshold could be implemented for those who own 5 per cent of entitlement or allocation in each system, which would require a change to the Water Act. As with the ASX, there would not be any repercussions from regulators for reaching this threshold.

This type of disclosure is complicated by the fact that competition law in Australia stipulates it is not illegal to be in a position of market power. For example, there would be nothing wrong with or illegal about someone owning 5 per cent of Goulburn high-reliability water shares. It would only be illegal to take advantage of the position of power. Disclosure of ownership may not achieve the outcomes the community is calling for.

Many water funds or larger market participants already disclose their water holdings in annual reports, so for some entities how much water they own and trade is already known.

**Table 4: Comparison of non-water markets**

	Australian Stock Exchange	Victorian rock lobster fishery	Victorian land property	Chicago Merc. Exchange
Is information available about buyers and sellers?	Ownership information only available on those with 'substantial interest' in a company No private information is available about who is offering trades or who buys.	No. Ownership information is not provided. No private information is available about who is offering what products, or who agreed what trades.	Ownership information and other private information for a particular property is only available to those who pay a fee to obtain it through government website, and you can only do one search at a time.	No. Ownership information is not provided
Is price and market depth information available?	Yes. It is widely available, timely and accurate	No. Some brokers include information on prices of trades, while others are less transparent and simply state 'price negotiable' or 'willing to pay premium price'.	Yes. Information associated with price and market depth is widely available and accurate at multiple scales (suburb level, street level, similar property types).	Yes. Exchanges provide information on commodity futures for sale and at what prices
What product information is available?	There is information available on the shares and individuals have to do the research on the companies they are buying shares in or use brokers' information	Number of licences is known. Monthly reports display fishery information on catch, effort and total allowable commercial catches.	Lots of information is readily available about the products. Third party aggregator sites like realestate.com and Domain.com put information in one place	Brokers and exchanges provide information about the contracts
What information about use of what is being sold available?	No information available.	Buyers purchase or lease additional quotas so that they can increase their catch. Most then export their catch to Asia.	Information on property use is sometimes provided in some suburb sales reports.	Commodities exchanges do not provide any information about what the owner of a futures contract intends to do, or actually does, with the contract or the commodity itself
Does it handle financial transactions?	Yes	No	No but there are specialised service providers	Yes. There is an in-house clearing house
Is it government or privately operated?	Private, with Commonwealth legislation and regulations	Government	Public/private partnership	Private

## Characteristics, features or benefits that could be used in water markets

These markets have features that are not present in Victorian water markets. For all markets reviewed except rock lobsters, price information and market depth are much more transparent and readily available.

Most have similar levels of transparency for personal information, and generally do not disclose it because of commercial sensitivity. The exception to this is for individuals or entities in the ASX who own about 5 per cent of a company's shares.

It is important to keep scale and maturity in mind when comparing the Victorian water markets to other markets. The ASX is worth \$1.9 trillion<sup>7</sup> and the relatively new Victorian water market is worth approximately \$17.7 billion. These larger, more established markets give a glimpse of how the Victorian water markets could develop in time.

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7. <https://www.asx.com.au/about/historical-market-statistics.htm>

## Glossary

**Allocative efficiency** is a state of the economy in which production represents consumer preferences, in particular, every good or service is produced up to the point where the last unit provides a marginal benefit to consumers equal to the marginal cost of producing.

**Asymmetric information** is defined as information concerning a transaction that is unequally shared between the two parties to the transaction. Information asymmetries are a common type of market failure. However, information asymmetries typically relate to the quality or characteristic information of the product being transacted. Information asymmetries, like other market failures, cause a misallocation of resources and therefore create social losses.

**Call options** are a newer market product that give the buyer the right, but not the obligation, to buy water for a fixed strike price in a future water season.

**Carryover parking** is a low-cost risk management option where owners of entitlements can rent their right to carry over water to other irrigators or water owners for a single season.

**Entitlement leases** make it possible to lease an entitlement over multiple years, rather than owning entitlement outright. They make water entitlements an operational rather than a capital expense.

**Exchange** (market, water or stock) can be defined as a physical or digital place where trading is carried out. Exchanges may have many roles in lowering transaction costs, including improving *market transparency*, standardising products, facilitating regulation of products or enforcing contracts. Exchanges are typically neutral intermediaries unlike *brokers* who usually work actively with buyers, or sellers, or both.

**Forwards** allow irrigators to lock in an allocation price for the following year(s), guaranteeing a set volume of water in future years.

**Market depth** refers to being able to see the amount of a product available and having real time information on buy and sell offers.

**Market distortion** can be defined by any persistent features of the economy that result in prices failing to reflect their underlying value. In a *competitive economy* with no market failure, markets will naturally tend towards their underlying value. Market distortions can be caused by a number of sources, including government policy such as taxes or regulation, or market failures such as externalities or *monopolies*. Market distortions represent a social problem as they lead to misallocations of resources throughout the economy and create social losses.

**Market manipulation** can be defined as ‘the act of artificially inflating or deflating the price of an [asset] or otherwise influencing the behaviour of the market for personal gain.’<sup>8</sup> Market manipulation can include the use of *market power*, and also include a range of other behaviours that can affect the operation of a market or the information available to markets. For instance, issuing many small trades for a particular price may affect price reporting, which has the potential to advantage the market manipulator.

**Market power** can be defined as ‘the ability of an economic agent... to affect the equilibrium price in a market. Market power derives from being large relative to the market... A *monopoly* [*cartel* or *oligopoly*] supplier of a product has market power: they can set the price that maximises profit. Similar considerations apply to market power on the demand side of the market. There are several determinants of market power in addition to size.’<sup>9</sup> In the context of water markets, an entity or group of entities would need to represent a large supplier of water to the market, or be the main purchaser of water from markets. Other sources of market power, such as barriers to entry or product differentiation, would be difficult to apply in the context of a publicly-operated market.

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<sup>8</sup> <https://www.investopedia.com/terms/m/manipulation.asp>

<sup>9</sup> Oxford University Press, *A Dictionary of Economics*, 2012

**Market transparency** can be defined as the degree to which information is available on market conditions, especially on the price, quantity available, and product characteristics. Market transparency is not commonly used or authoritatively defined as an economic term, and interpretations could vary. According to Wikipedia, “A market is transparent if much is known by many about what products and services or capital assets are available, market depth (quantity available), what price, and where”.<sup>10</sup> As defined in this paper in relatively narrow terms, it could be considered to assist in the operation of competitive markets. However, increasing market transparency could have the effect of increasing or decreasing price, and of increasing or decreasing the quantity traded.

**Speculation** can be defined as ‘activity aimed at profiting from expected changes in the prices of goods, assets or currencies, with most transactions capable of being interpreted as speculative’, however, the term may be more reserved for use where expected capital gains provide a major motive.<sup>11</sup> Other definitions suggest speculation can be defined as ‘the purchase of an asset (a commodity, goods, or real estate) with the hope that it will become more valuable in the near future’<sup>12</sup>; or the ‘act of conducting a financial transaction that has substantial risk of losing value but also holds the expectation of a significant gain or other major value’<sup>13</sup>. Some definitions suggest speculators may buy goods or assets they do not actually want but whose prices they expect to rise. Speculation is not illegal nor constitute misconduct. Speculative behaviour exists in all markets and is not necessarily contained to any particular type of market participant.<sup>14</sup>

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<sup>10</sup> [https://en.wikipedia.org/wiki/Transparency\\_\(market\)](https://en.wikipedia.org/wiki/Transparency_(market)) –the concept of market transparency is not defined in economic dictionaries.

<sup>11</sup> Oxford University Press, *A Dictionary of Economics*, 2012.

<sup>12</sup> <https://en.wikipedia.org/wiki/Speculation>

<sup>13</sup> <https://www.investopedia.com/terms/s/speculation.asp>

<sup>14</sup> <https://blogs.cfainstitute.org/investor/2013/02/27/what-is-the-difference-between-investing-and-speculation-2/>