What did the analysis show?

A scenario analysis was conducted to provide an indication of current supply and demand conditions for the southern Murray-Darling Basin as a whole (Figure 1), as well as focusing on the Lower Murray region. Horticultural demand is concentrated in the Lower Murray Region and physical system constraints can limit the availability of water that can be traded or delivered to the region.

Figure 1: Map of southern-connected Murray-Darling Basin water trading zones

The key assumptions for the southern-connected Murray-Darling Basin scenario are outlined below:

- **Southern Murray-Darling Basin scenario:**
  Assumes that physical system constraints and trade barriers are limited, and industries like cropping, dairy and livestock are willing to trade their water allocations to horticultural industries in dry times.

In reality, the water market is not this predictable. Water users with more flexible production systems do not always trade their allocations even when prices are high. Trade limits and physical constraints also impact on how water can be traded throughout the southern-connected Murray region under certain conditions.

This fact sheet describes the supply and demand analysis for the southern Murray-Darling Basin scenario. Outcomes for the lower Murray region are outlined in a companion fact sheet:

Water Supply and Demand in the Lower Murray region
What are the key findings?

Southern Murray-Darling Basin

Aither estimate that current horticultural water demand (i.e. from tree plantings like grapes, fruit and nuts including almonds) in the southern Murray-Darling Basin is 1,230 GL per year and will grow to 1,400 GL once all current plantings reach full maturity. This is around 55% higher than recent estimates by the Australian Bureau of Statistics.

During periods of extreme dry water availability (like a repeat of the worst year of the Millennium drought), horticultural water demand will be similar to all surface water that may be allocated for productive use in that year. If horticulture manages to meet this demand by purchasing water on the market, there would be little water left to supply other irrigated industries (Figure 2), and there could be increased water market prices.

Not all of the water available in the southern Murray-Darling Basin will be available to supply horticulture, due to the decisions of entitlement holders in other industries and the constraints on trade from system connectivity, physical constraints and trade limits.

What does this mean for water users, potential investors and policy makers?

- **Existing irrigated agricultural enterprises** – it will likely become more difficult for horticulture businesses and all other irrigated agriculture water industries to meet their demands in dry to average years if they are reliant on the allocation market. This could potentially lead to increased water prices in the future, particularly in dry years as well as loss of production of horticultural plantings.

Irrigators need to manage the risks of water availability by using tools like carryover and trade, as well as considering the likely cost of water as an input to their business.

- **Proponents of new irrigated horticulture developments** – potential investors should be mindful of the water supply demand balance and the need to consider the options to secure water under different seasonal conditions. Delivery issues should also be considered.

- **Policy makers** – The findings of this report should be considered when making decisions about any further environmental water recovery in the southern Murray-Darling Basin, as well as in any future water market reform.

How will the government respond?

The Victorian government is monitoring the large and rapid shifts in water demands in the southern Basin and is providing more information than ever before that water users and potential investors in new irrigation developments can use to make decisions. Key publications include:

- **Mallee Crop Report 2018**
- **Understanding future water availability in the Lower Murray**

To make sure that water market users have the best possible information, the Minister for Water has asked the Department of Environment, Land, Water and Planning to look at options and benefits of a completely transparent water trading system, to provide confidence that the market is working for irrigators and not being distorted.

Figure 2: Water availability scenarios and baseline permanent horticulture water demand (at full maturity) - connected Murray region