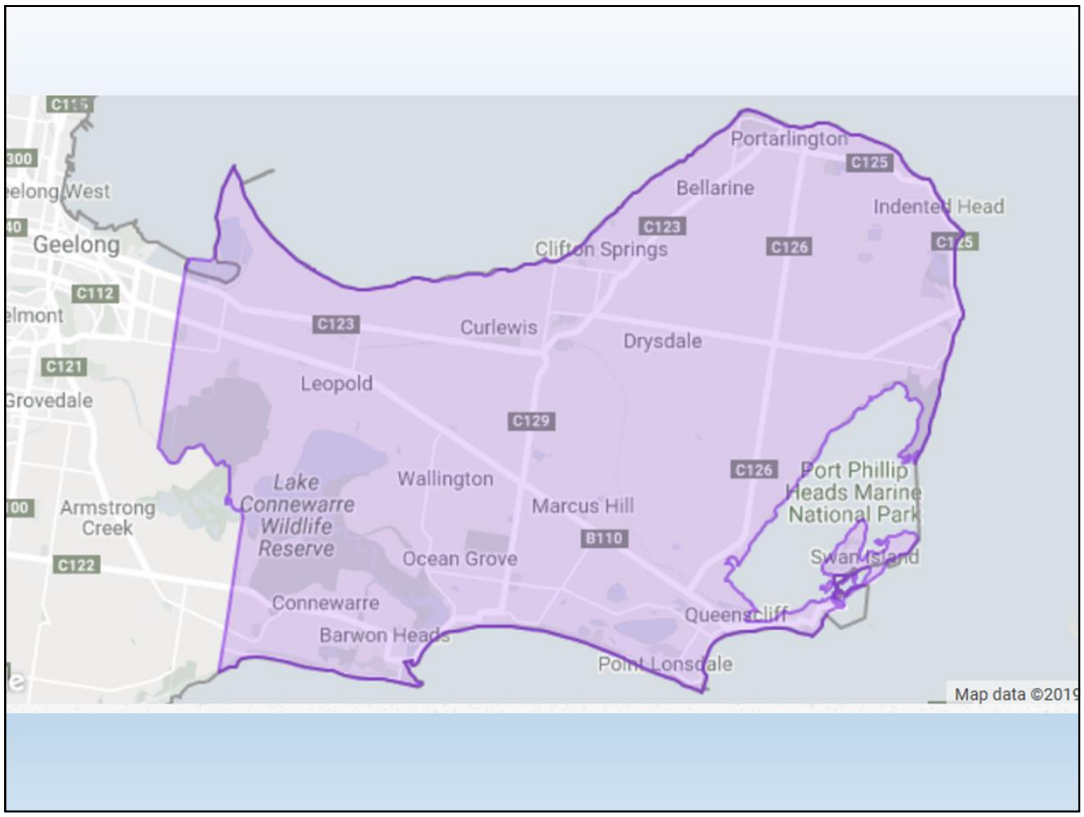
This presentation aims to briefly overview the complexities of Water Resource Management, Design, Development and Operation.



For the purpose of this presentation, The Bellarine is the State Electorate Boundaries as shown

There are many source of water --- not just Barwon Water.

Urban Drainage can be classified as “hard surface” catchment where there is less soaking into the ground than in normal open environment. This means there is a change of natural “flow” regime with more concentration in certain areas of the urban environment e.g. building roof tops, road surfaces, residential hard surfaces, commercial hard surfaces, run off into catchment drains and non-natural flows

Rural Catchment includes the remainder of overall catchment – topographical direction of natural run-off and ultimate flow.

The Bellarine has a significant farming sector area as well as designated world heritage Ramsar areas etc. In fact the farming sector is upstream of most of the Ramsar sites: parts of the shoreline, intertidal zones and adjacent wetlands of the Bellarine Peninsula are plenty, extending from Edwards Point to Barwon Heads and including Swan Bay; Mud Islands; and Lake Connewarre and Reedy Lake. In times of heavy rainfall it is estimated that many gigalitres (i.e. thousands of megalitres) flow into either the bays (Corio and Port Phillip) or the ocean (Bass Strait).

Ground Water via “aquifer extraction” (licenced bores) is significant on the

Peninsula however there does need to be some further research on yield potential and subsequent impacts on the Peninsula.

Tank Water catchment is one which needs to be investigated in more detail, e.g. in the rural areas of the Peninsula, where Barwon Water's potable supplies are unavailable, most properties have tank/pump systems for their domestic, and often stock needs. In doing so, it is thought that much of the hard surface catchment potential on these rural properties is often at capacity.

However, in urban areas the potential of this tank water source is very much under utilised, poorly designed and very much inefficient and therefore ineffective. Accordingly there is a need for relevant authorities such as the Victorian Building Authority (VBA), CoGG, as well as suppliers to design and develop better more efficient and effective small catchment systems for individual home properties. In particular looking at the potential to retrofit older properties or for example, those that do not have current tank to toilet systems. In fact, any potential "potable water replacement" practices are a significant means to reduce overall demand on the Barwon Water Supply system.

In addition consideration needs to be given to inefficient plumbing designs in new and old buildings, for example the placement of instant heating devices (gas and electric) located some distance away from various areas like bathrooms, kitchens, laundries etc. often leads to significant water being run down the drain before the appearance of hot water. This often results in the waste of the potable water resource.

Water on the Bellarine

AUTHORITIES

Drinking (potable tap)	Barwon Water
Recycled (treated waste)	Barwon Water
Urban Drainage	CoGG CCMA
Catchment Run-off	CoGG Southern Rural Water CCMA
Ground Water	Southern Rural Water
Tank Water	Property Owner CoGG

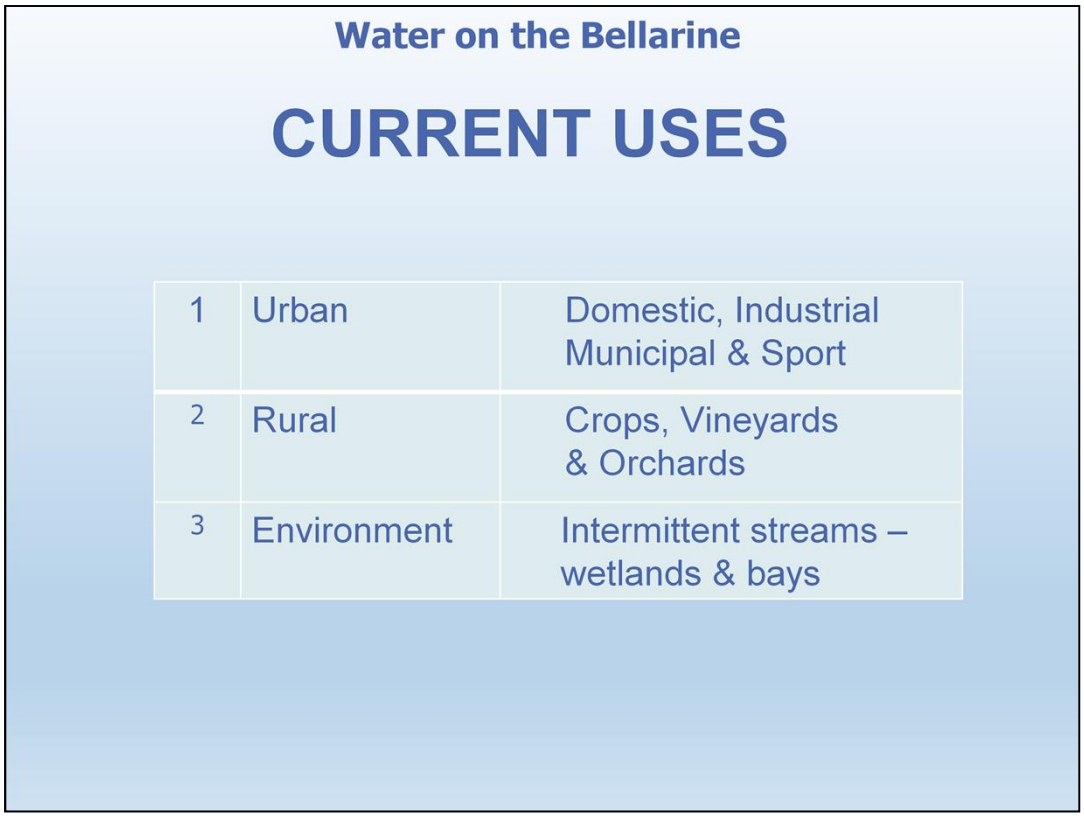
This slide is fairly self-explanatory in showing the complexity of overall water management. There is potential to rationalise these multiple authorities to save financial resources, and perhaps better manage and operate the water resource.

Water on the Bellarine

REGULATION

1	Drinking (potable tap)	DHHS NHMRC Guidelines
2	Recycled (treated waste)	EPA
3	Urban Drainage	EPA SEPP
4	Catchment Run-off	EPA SEPP
5	Ground Water	Licencing
6	Tank Water	Assorted Planning

Again this slide is also self-explanatory – there is potential opportunity to rationalise regulation practices and de-cluttering bureaucratic requirements



Current uses on the Bellarine are many and varied. The potential to increase the availability of water resources will produce opportunity, in particular for the rural farming sector, and also the environment, through greater environmental flow. However, the responsible authorities and regulators need to work together to enhance the potential of these opportunities.

This slide reveals some of the existing systems operating on the peninsula but does not highlight the detail of these systems. For example a number of golf clubs have developed drought proofing practices to protect their valuable assets during long dry periods of weather (drought). Portarlington Golf Club has managed to harness three options of water catchment other than the use of the valuable and expensive potable water resource. The first has been to connect to Barwon Water's – Portarlington Waste Water Treatment Plant (PWWTP); the second has been to enhance catchment and storage of the natural rural catchment run-off from the south west of the course; the third s to enhance catchment and storage of the urban run-off from the town via CoGG's storm water detention basins (between Willis and Stevens Sts).

The above is just a small example of works already undertaken through the cooperation between the water user and Authorities. However in reality and overall, this is only the tip of the iceberg in terms of collecting and storing the resource for future uses.

Water on the Bellarine

Opportunities

Augmentation of Portarlington WWTP

Enhancement of Black Rock WWTP

Research stormwater for Agricultural Industry

Research wetland and stream systems

In the future, there is ample opportunity to develop more creative opportunities to harness, store, and use water resources.

The difficulty is what do we do when we have periods of ample rainfall, and therefore at times too much of the resource.

Much work needs to be done on how better to utilise the resource when it is not required; e.g. environmental flow increases, greater storage capacities which fit environmental enhancement opportunities, more wetland management regimes and others.

Water on the Bellarine

CONCLUSION

The Bellarine needs
to investigate and research
on how to further achieve

"A Sustainable Balance
for Use of Available Water"

" A Sustainable Balance for Use of Available Water" --- with the average rainfall on the Bellarine being around 600mm/annum then in excess of 200GL falls on the overall area/annum.

This coupled with the supply to the urban areas on the peninsula from external sources away from the Bellarine, and the subsequent resulting wastewater resources after use, means there is ample resource to work with in the future for he Bellarine.

The challenge is, how best to achieve the sustainable, efficient and effective collection and distribution, in a complex management and operation system.


QUESTIONS?