Expansion of the Recycled Water Use by the Horticultural Industries in the Northern Adelaide Plains

The NAP region has the largest concentrations of horticultural activities in southern Australia and adds $350 million to the economy of South Australia. The horticultural growers in the region are broken into two main production groups from a total of 3000 grower businesses with 1300 being glasshouse / polyhouse production systems to the remainder being broad acre vegetable growers and orchardists. The glasshouse / polyhouse growers are further broken down into two groups - hydroponic production systems and soil based production systems. The hydroponic growers produce about 30 kg / m^2 of product whilst the soil based growers produce on average 10kg/ m^2.

The region owes it success to being located on very reliable and sustainable aquifers of high quality water, productive soils and linking these to all year round sunshine means that high production levels are always guaranteed. The influx of skilled growers over the last 70 years has meant that almost any horticultural crop can be grown in the region. The region is currently represented by a mixture of cultural backgrounds that has great diversity and skills specifically suited to horticultural production. The Vietnamese community is the largest grower group that consists of 650 polyhouse businesses.

The NAP's weather is Mediterranean and as such, water is always the limiting factor in any agricultural production system. Traditionally water has been sourced from the underground aquifers and the River Murray. With changing recycling technologies and public attitudes to environmental sustainability, treated waste water has become available in larger quantities for horticultural production. With the population of Adelaide expanding further north, the Bolivar sewage treatment plant expanded its recycled water program as a pipeline was laid to supply recycled water to parts of the NAP region. This water supply has meant that more land and different production systems have been employed to increase horticultural production in the region.

For the NAP region to expand further beyond its traditional boundaries of south of the Gawler River, the recycled water pipelines need to extended further north to open up new land to horticultural production. This northern land has issues of high levels of salt in the soil layers. To overcome this type of impediment to production, the water quality of the treated water needs to be improved from its current 1100 ppm down to 700 ppm. Vegetable production is negatively depressed by water that is above 900 ppm. The traditional method of water utilisation is to dilute the Bolivar water with bore or rain water to dilute the salt concentration down to levels of 300 ppm. If the Bolivar water was reverse osmosis treated at the sewage plant, down to 700 ppm, the new water resource would become more valuable and be utilised by more growers over a larger area of the region.

The expansion of the existing network of pipelines to close gaps would also stimulate further horticultural expansion. Currently growers in the existing pipeline zone that do not have

pipelines passing near their properties are having to rely on drinking water to water their crops. This is an uneconomic use of existing water supplies when with the simple extension of the pipelines into these areas, would free up valuable drinking water resources and reduce the water input costs of growers.

Regional Water Requirements.

To increase horticultural production, investment, processing and employment, HortEx has identified the following issues as priorities.

- Extend existing recycled water pipeline access to Bolivar treated water into areas that are currently not connected to the scheme and are using drinking grade water.
- Reverse osmosis Bolivar recycled water down from 1100 ppm to 700 ppm to make it more attractive and valuable to the horticultural industries.
- Extend Bolivar recycled pipelines north of Gawler River to open up new land resources.
- Cluster utilities such as power, gas and recycled water together at strategic points to allow the horticultural growers to link into these points.
- Strategic cluster points should be located near other services such as transport corridors, employment centres and food processors.

HortEx and the horticultural growers of the Northern Adelaide Plains strongly support the concept and need of developing and extending the existing recycled water pipelines in the region. Water is a critical component of horticultural production and without it, the region will not develop further to its full potential. With the strategic develop of the water resources, the region will be able to further develop the horticultural supply chain which will have the flow on effects of increasing value adding through processing of raw materials and increasing employment opportunities by adding a 5 FTE worker equivalent for every horticultural job created. This makes the target of increasing the region's earning output from $350 million to $500 million much easier to achieve.

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