Integrated Water Strategy Water Reuse

May 2007

What is water reuse?

To make the most of our limited available water resources, Miriam Vale Shire Council is seeking to reuse treated effluent from sewage.

At this stage, this treated water will be limited to beneficial reuse, which means using it for playing fields, parks, agriculture and golf courses. It can also be used for dust control and construction activities.

To meet future sewage treatment and recycling needs, Council is proposing to undertake the following works:

- construct a sewer mining facility with an initial capacity of 300 kilolitres per day increasing to a maximum capacity of 600 kilolitres per day; and
- increase sewage treatment capacity by 100%.

The proposed recycling facility is planned to produce Class A+ water that would be suited for the highest level of reuse.

The water treatment process

There are three stages involved in treating waste water to drinking water quality standards.

The first stage is called **Primary Treatment** and includes removing or reducing grease, fats, sand, grit and coarse solids.

The next stage, **Secondary Treatment**, is designed to substantially degrade the biological content of the sewage such as that derived from human waste, food waste, soaps and detergent. The new plant will

treat the sewage using aerobic biological processes. Bacteria and protozoa consume biodegradable soluble organic contaminants (e.g. sugars, fats, organic short-chain carbon molecules, etc.) and bind much of the less soluble fractions into floc.

Tertiary Treatment provides a final stage to raise the effluent quality before it is discharged to the receiving environment. Class A+ treatment involves additional treatment processes such as ultrafiltration which acts as an extremely fine filter to remove small particles, proteins and most microorganisms.

Class A+ water can be used for:

Domestic and commercial property use

 Toilet flushing, outdoor hosing and wash down and above ground garden watering.

Irrigating food crops and retail nurseries

- Food crops consumed raw or minimally processed
- Retail nurseries irrigating ready to eat crops
- Root crops and other food crops with above ground irrigation

Industrial use

 Open system use where there is potential for high human contact (e.g. commercial car wash)

Fire fighting

Sewer mining facility

Council will build a Membrane Bio-Reactor sewer mining facility adjacent to the desalination plant for the treatment process and to produce water for irrigation of sporting fields and gardens.

food waste, soaps and detergent. The new plant will

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