

Alkimos Wastewater Treatment Plant

Background

What is wastewater?

On average, people produce about 200 litres of wastewater every day. This wastewater comes from our homes, our schools, our places of work, hospitals and other services and is more than 99.7% water.

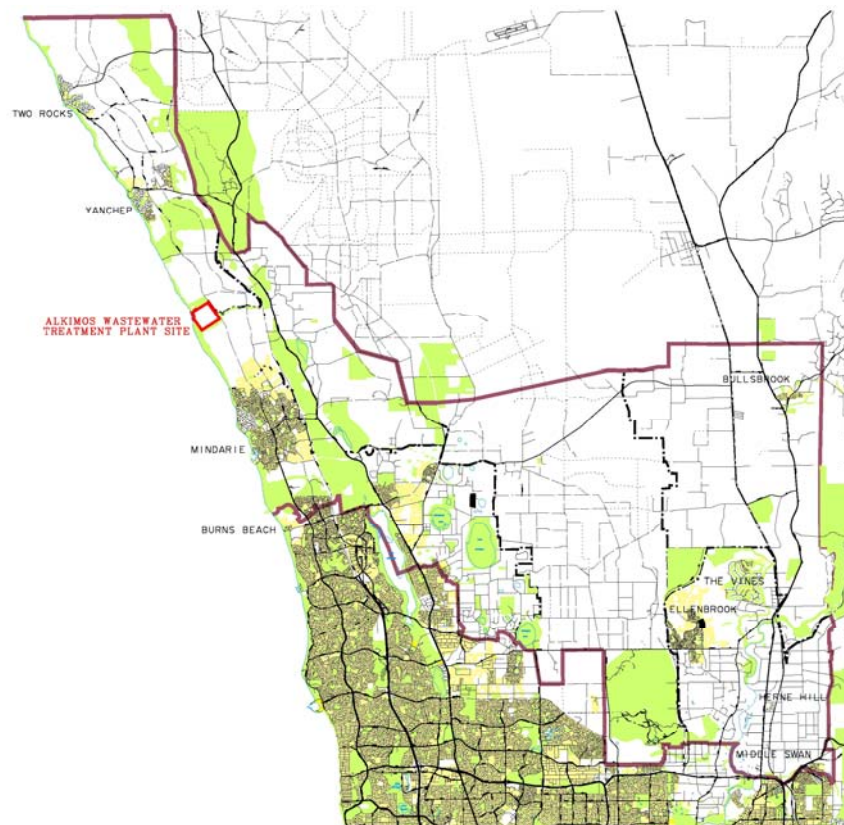
Most comes from our homes - from showers, baths, sinks and washing machines as well as the toilet. It contains some pollutants, mainly of human origin. These are in the form of suspended and dissolved matter, oil and greases, detergents, nutrients, heavy metals and potentially harmful bacteria and viruses.

Wastewater also comes from commercial and industrial premises. Limits are placed on pollutants from discharges from industries so that the wastewater quality is similar to that coming from a home.

Wastewater treatment plants remove much of the pollutant material from the wastewater. The wastewater that has been treated in a wastewater treatment plant and is suitable for discharge into the environment is called treated wastewater.

Why do we need the Alkimos Wastewater Scheme?

The long-term plan to service wastewater in Perth is a series of wastewater treatment plants from north to south about 15 kilometres apart. North of the Swan River we already have Subiaco, serving the western suburbs, and Beenyup, serving the northern ones. Woodman Point currently services suburbs to the south of the city.





The north-west corridor, from Mindarie northwards, is predicted to grow to about 50,000 people by 2030. As well as residential growth, there will be a regional centre near Alkimos.

In 1995 the *Wastewater 2040* planning report outlined the need for another major treatment plant to be located at Alkimos, to service growth in this north west corridor. This plant will ultimately service about 800,000 people and be built in stages over a number of years to cater for the growing population.

Current Situation

Wastewater from the nearby coastal suburbs of Mindarie, Clarkson, Quinns Rock, Merriwa, Ridgewood, Butler and Jindalee is currently being pumped to the Beenyup WWTP. The suburb of Wanneroo, to the east of Wanneroo Road, is also being pumped to the Beenyup WWTP.

In the north, the Yanchep and Two Rocks WWTPs service these two towns. These plants were only ever envisaged as facilities to serve the local communities until Alkimos was built.

Wastewater from all of these areas will be redirected to the Alkimos WWTP, over time.

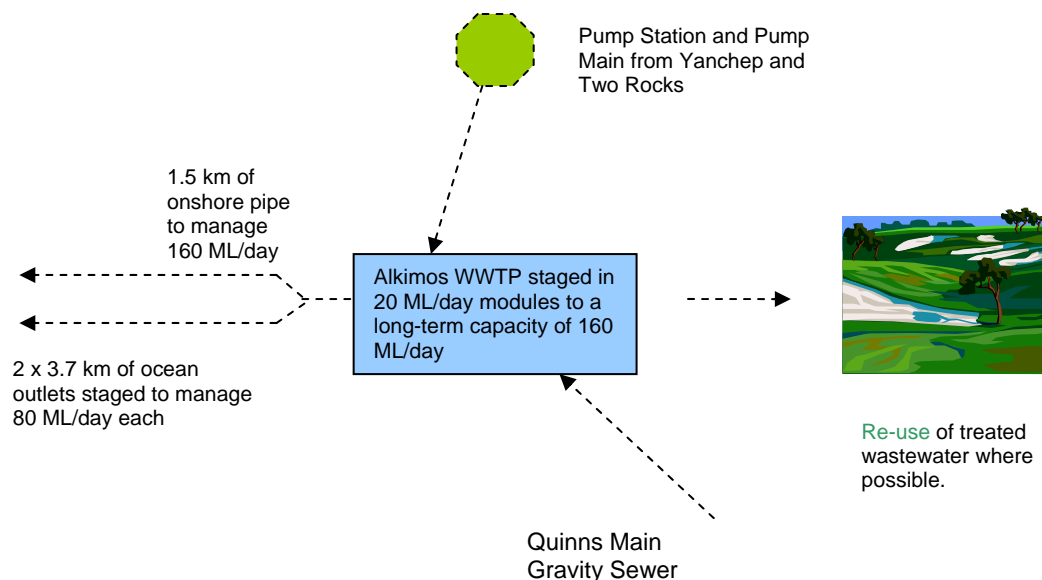
How will it work?

The Alkimos plant will be located between Yanchep and Quinns, approximately 40 km north of Perth.

The wastewater will be delivered to the plant by a system of gravity sewers flowing from the north and south. Following treatment, the treated wastewater not required or able to be recycled will flow by gravity to the ocean through a long ocean outlet.

Wastewater will be treated by the activated sludge process to produce a treated wastewater with low solids and nitrogen levels making it suitable for further treatment for recycling or discharge to the ocean.

Unlike Beenyup, Subiaco and Woodman Point WWTPs there will be no primary treatment at Alkimos WWTP in front of the activated sludge process. This has the advantage of producing less odours but means that it is not possible to use the anaerobic sludge treatment process and recover energy. Odorous gases will be collected, treated and vented via a 50 metre tall stack.

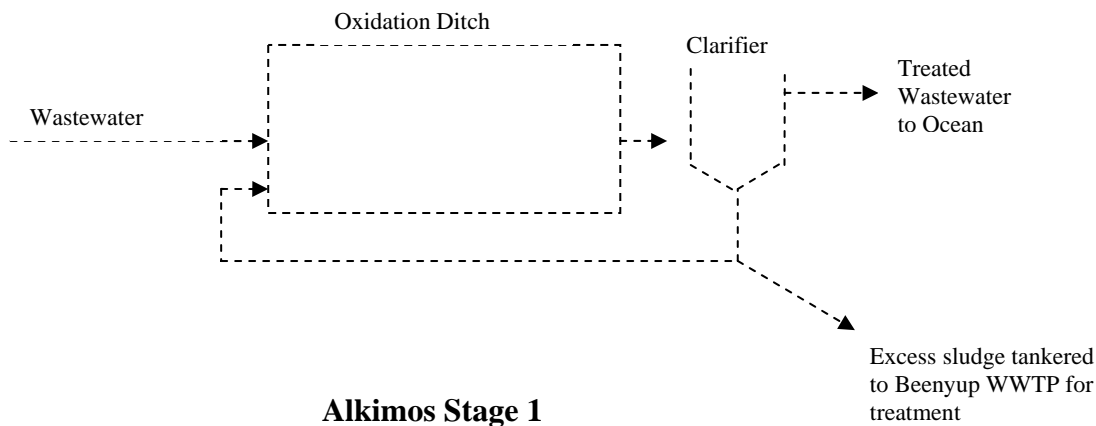


The Future

The Environmental Protection Authority has approved Stage 1 of the Alkimos WWTP, a 20 megalitre per day plant to cater for a population of approximately 100,000 and an ocean outfall 3,700 metres out to sea. There is also approval for several more sections of the Quinns Main Sewer.

Works on Stage 1 have commenced and the current estimated date for completion is December 2010. This will enable the suburbs such as Butler and Quinns Rock to be rerouted from the Beenyup WWTP and for the current constraints on development in the area to be removed.

Progressively the suburbs south to Mindarie will be rerouted to Alkimos WWTP, freeing up capacity in the Beenyup system. Stage 1 will provide sufficient capacity to manage growth until around 2027.



Is it safe?

Investigations and modelling show that with the level of treatment proposed (secondary with nitrogen reduction) and a 3,700 metre long ocean outlet into 25-30 metre deep water will protect public health and the environment. This has been approved by the Environmental Protection Authority. Monitoring will be undertaken to ensure that health and environmental criteria are met.

The approved 600 metre buffer and a high level of emission control will help to manage the impact on adjacent land uses.

More Information

- Water Corporation web site:
<http://www.watercorporation.com.au/A/alkimos.cfm>