

# Narrogin WWTP Upgrade Trickling Filter & Wetland



## Project Overview

The Water and Carbon Group designed & constructed the Narrogin WWTP upgrade involving a 300m<sup>3</sup> plastic media trickling filter and a 20,000m<sup>2</sup> high density constructed wetland.

Narrogin is a town of approximately 4,500 people, located in the Western Australian wheat-belt, 2.5 hours south east of Perth. The climate consists of a temperate climate of cold rainy winters and warm dry summers.

Completed in 2016, the Narrogin WWTP requires minimal energy while reducing total nitrogen discharge by 80% and phosphorous by 50% without pre-treatment and suspended solids and BOD compliant with licence conditions. The improved performance was achieved without adding operational costs.

The tertiary treatment design incorporated a 2 ha. constructed wetland planted with a range of native wetland plants. The final result of this system is a passive WWTP that provided significant energy savings over conventional upgrades.

The Narrogin WWTP upgrade is a demonstration of how water utilities can achieve high performance upgrades to existing treatment plants using passive, ecological processes.



## Testimonial

*“The Water Corporation is proud of the innovative solution implemented in Narrogin by The Water and Carbon Group. The trickling filter and wetland system is a benchmark for regional treatment plants nationally. It is one of the lowest energy using sewage treatment plants in WA producing tertiary treated wastewater, dramatically reducing the nutrient load to the receiving environment.”*

*I highly recommend this approach to other water utilities seeking energy efficient alternatives to traditional treatment and disposal options, while delivering strong environmental outcomes.”*

**Sue Murphy** | CEO of Water Corporation WA - 2008-2018

