

# PROJECT PROFILES

## HIMATANGI BEACH WWTP

### Project

Himatangi Beach is a popular summer retreat town for the Greater Wellington and surrounding areas. The permanent residents of this beautiful seaside town become a minority as the town more than doubles in size over the December to February months. Designing a wastewater treatment plant for this spike in flows for a short period of time involves good design and planning. This was Waterclean Technologies first "Greenfields" site.

**Client:** Manawatu District Council

**Commissioning Date:** September 2013

**Population Equivalent:** 1400

**Flow Rate:** 350m<sup>3</sup>/day (*Average Dry Weather Flow*)

### Background

The Manawatu District Council has looked at a number of mechanical options for the Himatangi Beach wastewater upgrade. Due to the large flow and load differentiation between the peak holiday period and the remainder of the year meant that largely any mechanical plant would be oversized for a large part of the season. Waterclean Technologies was engaged in a biological treatment design containing enough buffering to treat the peak dry weather flows yet able for the low winter flows.

### Description

The pond was built with a large buffer capacity by enabling the increase in depth from 1.2m to 2.4m during the peak flow periods. The primary facultative zone assisted by a mechanical diffused aerator during summer is separated from the biological Floating Treatment Media (FTM) by a series of impermeable baffles. The hydraulic control and maximizing of retention time within the Floating Treatment Media is of all importance especially during the peak flow. Flow control baffles were fitted to each section of FTM modules to ensure that short circuiting was eliminated. The final effluent is irrigated to a tree plantation.

### Benefit

This cleverly designed wastewater treatment system has the ability to treat a short concentrated period of summer flow yet for the remainder of the year runs at a very low operational cost for the client. Capital outlay saved in constructing one single pond with enough capacity to simply raise the depth is value engineering.

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Influent Wastewater		
Parameter	Avg (mg/L)	Max (mg/L)
BOD	163	342
TSS	208	428
TKN	44	80
NH <sub>4</sub> N	32	57
TP	6.2	10.9
pH	7.5	8.6
Tmin	11°C	
Tmax	22°C	
Flow Data		
ADWF – 2014		540m³/d

Lagoon 1 Effluent		
Parameter	Avg (mg/L)	Consent
BOD	20	Land Based Discharge Consent
TSS	37	
TKN	17	
NH <sub>4</sub> N	16	
TP	3.8	

### Himatangi Wastewater Treatment Plant Upgrading Concept

