Activity 11.1: Wastewater Treatment and Disposal Accountable Manager: Mark Christison

What services are provided?

- Operate and maintain treatment plants, discharge structures/outfalls and biosolids reuse/disposal.
- Provide laboratory services as an integral part of monitoring and controlling treatment processes.

Why do we provide these services?

To provide for the treatment and disposal of wastewater from properties. Required under Resource Management Act and Health Act.

What outcomes are we trying to achieve?	How do the services contribute to desired outcomes?
Injuries and risks to public health are minimised	By providing well-maintained treatment plants and disposal services, the Council ensures that wastewater is disposed of efficiently, safeguards public health and minimise adverse effects on the environment.
	Laboratory services undertake monitoring and analysis of Council wastewater treatment and disposal services to measure compliance with resource consents and process requirements.
	Ongoing monitoring of wastewater treatment and disposal processes ensures that wastewater is treated to an appropriate standard before it is discharged.
Statutory obligations are met by the Council	<i>Providing wastewater treatment and disposal is a statutory requirement for the Council.</i>

Which group or section of the community will benefit from this activity?:

Christchurch residents, visitors to Christchurch, ratepayers, local residents adjacent to plants, commercial and industrial businesses, developers, Selwyn District Council.

Key legislation:

- The Resource Management Act 1995
- The Health Act 1956
- The Local Government (Rating) Act 2002
- The Water Related Services Bylaw 2008
- Trade Waste Bylaw 2006
- Canterbury Earthquake Recovery Act 2011

Customer

What business results must we deliver to our customers, to deliver on the outcomes?

Performance Standards for LTP

Performance Standards for LTP	Current performance	Benchmarks	Recommended LOS	Rationale	LTP Committee Direction	
Operate and maintain treatment plants discharge structures/outfalls and biosolids reuse/disposal.						
11.1.2 Maintain consent compliance for wastewater treatment plants	Current LOS: Number of major or persistent breaches of resource consent by the Christchurch Wastewater Treatment Plant (CWTP) 2009/10= 1 * 2010/11= 5 * 2011/12= 0 *Due to earthquake damage at CWTP	No infringement notices served on Watercare (Watercare Annual Report 2010-2011) Wellington Area Target – no Resource Consent infringement notices received from Regional Council Hamilton target – to achieve a high level of compliance Dunedin target – zero consent breaches	Maintain no major or persistent breaches of resource consent for wastewater treatment plants and associated discharges each year, as reported by Ecan	Measuring and managing compliance with resource consents associated with the operation of the wastewater treatment plants (CWTP and Banks Peninsula Plants).	Accepted	
11.1.1 Minimise odour complaints from wastewater treatment plants	Current LOS: Number of widespread and/or on-going incidences of objectionable odour per year from the Christchurch Wastewater Treatment Plant 2009/10= 0 per 10,000 2010/11= 0.27 per 10,000* 2011/12= 0 per 10,000 *Due to earthquake damage at CWTP	Watercare: three odour complaints from Mangere Treatment Plant, seven from other plants (equivalent of 0.00 complaints / 1000 properties served) (Watercare Annual Report 2010-2011) Wellington Area – target no more than fifty complaints per 10,000 properties Wellington Moa Point – target 0 confirmed complaints	11.1.1.1 Maintain no more than 0.1 odour events per 10,000 properties served per year 11.1.1.2 Meet ECAN conditions of air discharge consent	Measuring and managing significant odour issues associated with wastewater treatment plants. Target 11.1.1.1 allows for annual fluctuations, and is modelled from UDS growth estimate data, based on two complaints per treatment plant per year (Banks Peninsula has seven wastewater treatment plants (Lyttleton, Diamond Harbour, Governors Bay, Tikao Bay, Akaroa, Wainui, Duvauchelle) and the Christchurch Wastewater Treatment Plant (CWTP).	Accepted	

Customer

What business results must we deliver to our customers, to deliver on the outcomes?

Non- LTP Performance Standards

Non-LTP Performance Standards	Current performance	Benchmarks	Recommended LOS	Rationale	LTP Committee Direction	
Operate and maintain treatment plants discharge structures/outfalls and biosolids reuse/disposal. (cont'd)						
11.1.3 Divert amount of biosolids from landfilling	2009/10: 100% 2010/11: 100% 2011/12: 100%	Watercare diverted from landfills 80% of solid waste generated from treatment of wastewater	Divert at least 95% biosolids from landfill that are put to beneficial use each year	Key Business Driver: Monitoring the amount of biosolids diverted from landfill and being put to beneficial use (with an aim to continue diverting biosolids from landfill). Target reduced slightly to reflect that occasionally non- conforming dried biosolids may have to go to landfill.	Accepted	
11.1.5 Manage CWTP Electricity use	11.1.5.1 kwh of electricity / m ³ used to treat wastewater at the Christchurch Wastewater Treatment Plant each year 2009/10= 0.16/kwh/ m ³ 2010/11= 0.19/kwh/ m ³ 2011/12= 0.157kwh/m ³ 11.1.5.2 kwh of electricity / kg COD removed at the Christchurch Wastewater Treatment Plant) 2009/10=0.34 kWh/kg 2010/11= 0.50 kWh/kg 2011/12= 0.37 kWh/kg COD	Hutt Valley Water Services: 450 kwh / ML for the treatment plant (equivalent of 0.45 kwh / m ³) <i>Moa Point</i> 0.47kw/m ³ <i>Tahuna</i> 0.183kwh/m ³ (primary treatment only)	11.1.5.1 Maintain less than 0.20 kwh of electricity / m ³ used to treat wastewater at the Christchurch Wastewater Treatment Plant each year 11.1.5.2 Maintain less than 0.48 kWh of electricity / kg COD (chemical oxygen demand) removed at the Christchurch Wastewater Treatment Plant each year	Key Business Driver: Measuring and managing the operational energy efficiency of the Christchurch Wastewater Treatment Plant, accounting for electricity imported/used from the national grid and electricity generated and used on site. Targets allow for annual fluctuations. COD = chemical oxygen demand Numbers illustrate how efficient CWTP is and energy includes biosolids drying process	Accepted	

Customer

What business results must we deliver to our customers, to deliver on the outcomes?

Non- LTP Performance Standards

Non-LTP Performance Standards	Current performance	Benchmarks	Recommended LOS	Rationale	LTP Committee Direction		
Operate and mainta	Operate and maintain treatment plants discharge structures/outfalls and biosolids reuse/disposal. (cont'd)						
11.1.6 Effectively use self- generated energy	2009/10 – 74% 2010/11 -54% EQ impacted 2011/12 - 48% EQ impacted	Watercare achieved 32% of energy internally sourced from biogas and hydro	At least 60% of electricity that is used by the CWTP is self generated from biogas	The digesters breakdown solids and sludge which is harvested to produce methane which is used in a combined heat and power engine to produce heat and electricity for the site. The electrical load or usage by CWTP has increased an estimated 30% to 40% due to recent beneficial capital upgrades to Pump Station A and the Biosolids Drying Plant. CWTP has the highest ratio of self generated energy of major wastewater plants in New Zealand. The plant is fuelled by renewable energy sources.	Accepted Update rationale to include explanation of changes on electrical load (Updated 23/11/12)		
Provide laboratory s	Provide laboratory services as an integral part of monitoring and controlling treatment processes						
11.1.4 Maintain Council laboratory accreditation	Years – accreditation achieved 2009/10 Yes 2010/11 Yes 2011/12 Yes	IANZ accredited NZ Council laboratories for chemical and biological testing: Hamilton City Council, Environment Bay of Plenty, Rotorua District Council, Tauranga City Council, Whangarei District Council	Maintain International Accreditation NZ (IANZ) accreditation	Ensures the quality of testing and sampling conducted by the Council's laboratory (for water and wastewater services). IANZ is International Accreditation New Zealand.	Accepted		