

Appendix W

Contingency Plan

Contingency Plans

A business continuity plan (BCP) has been developed to maintain continuity of operations and service delivery as part of the initial implementation of Councils Risk Management Charter and the methodology of Control Self Assessment and also incorporating the recently revised standard AS/NZS 4360, 2004. (Ref Objective document # A1009551).

The contingency plans being developed are to respond to the risks identified as high risk, in the risk management section of this AMP. The contingency actions identified are intended to provide a general guide and may need to be adapted to suit specific hazard situations.

Water Supply Contingency Plan	
Type of Event	Required Contingency Action
<p>Severe microbiological contamination of source water (such that treatment is ineffective)</p> <p>Indicators: A contamination event in the catchment may be observed by TDC staff, observed by public within the vicinity of the contamination or monitoring equipment may send an alarm to the operators.</p> <p>The contamination could also be discovered by a positive test result, but may also be indicated by reported illness among consumers or reports of turbidity and/or an unusual taste in the water.</p>	<p>Shut down supply</p> <p>Issue "Boil Water" notice and advise consumers to conserve water Advise Drinking Water Assessor (DWA). Respond to raw water turbidity alarms and storm warnings to ensure treatment plant performance is achieved. Make plant adjustments should treated water turbidity and chlorine residual targets drift from target values</p> <p>Inspect catchment and intake to identify source of contamination and rectify problem as quickly as possible.</p> <p>Should contamination occur due to an algal bloom, refer to the algal bloom contingency plan If normal treatment and supply cannot be resumed within 48 hours then make arrangements for provision of emergency treatment or alternative water supply (e.g. tankers) Undertake additional sampling and monitoring to confirm security of supply. Disinfect contaminated reservoirs and flush mains If contamination is contained to a particular area of the supply, It may be possible to supply from the supply scheme / zones and or district.</p> <p>Keep customers informed and advise once regular service is restored</p>

A specific Cyanobacteria (Algal Bloom) Management Plan has been developed. This plan includes monitoring requirements, escalating alert levels and the responses necessary during such event.

Water Supply Contingency Plan	
Type of Event	Required Contingency Action
<p>Chemical contamination of source water</p> <p>Indicators: A contamination event in the catchment may be observed by or reported to TDC staff. May also be indicated by reported water quality concerns from consumers (taste, odour, colour) or illness among consumers. Chemical tests may indicate chemical contamination</p>	<p>Shut down supply Advise Drinking Water Assessor (DWA) Assess situation and advise customers regarding use/treatment/disposal of contaminated water. Arrange emergency water supply (tankers) if necessary, if contamination can be isolated, other areas of the supply could be supplemented from nearby schemes / district..</p> <p>Undertake additional sampling and monitoring to confirm security of supply Inspect catchment and intake to identify source of contamination and rectify problem as quickly as possible Cease abstraction if made aware of spill of chemical that may affect raw water quality. If normal treatment and supply cannot be resumed within 48 hours then make arrangements for provision of emergency treatment system</p> <p>Flush contaminated reservoirs and flush mains Keep customers informed and advise once regular service is restored</p>

Water Supply Contingency Plan	
Type of Event	Required Contingency Action
<p>Insufficient water (for abstraction, treatment, or loss of supply)</p> <p>Indicators: Observed or reported low lake levels or low level fault from intake pumps, customer complaints due to lack of water, low flow alarms, potentially very high flows if retic network has a burst</p>	<p>Advise customers to conserve water</p> <p>Inspect catchment/intake/pumps to identify cause of problem and rectify as quickly as possible</p> <p>Implement demand management strategies as required.</p> <p>If due to pipe failure or intake structure failure, flush contaminated water, repair, and sterilise as per council procedures.</p> <p>Be prepared to use an alternative supply, and consider supplementary supply from nearby scheme.</p> <p>Keep customers informed and advise once regular service is restored</p>
<p>E. coli transgression in water leaving treatment plant</p> <p>Indicators: E. coli transgression reported following routine monitoring. Possibly reported illness of consumers</p>	<p>Follow transgression response procedures of DWSNZ:2005 (rev2008)</p> <p>Increase chlorine level</p> <p>Advise Drinking Water Assessor (DWA)</p> <p>Commence daily E. coli testing at WTP and network, monitor residual chlorine levels on the network.</p> <p>Use an enumeration test method</p> <p>Sample in distribution system</p> <p>Investigate cause, inspect plant and source</p> <p>Take remedial action</p> <p>Continue to sample for E. coli until 3 consecutive samples are free of E. Coli</p> <p>If E. coli is found in repeat samples consult with DWA, intensify remedial action, increase disinfection, consider 'Boil Water' notice, consider alternative supply</p>

Water Supply Contingency Plan	
Type of Event	Required Contingency Action
<p>Over chlorination</p> <p>Indicators: High FAC reported from treatment plant, increased consumer complaints</p>	<p>Shut down supply</p> <p>Assess potential hazard to consumers and advise accordingly</p> <p>Inspect treatment plant to identify cause of problem and rectify as quickly as possible</p> <p>Inform consumers if shutdown > 6 hours and advise to conserve water until supply restored</p> <p>If normal treatment and supply cannot be resumed within 48 hours then make arrangements for provision of emergency treatment or alternative water supply (e.g. tankers).</p> <p>Keep customers informed and advise once regular service is restored</p>
<p>Inadequate chlorination</p> <p>Indicators: Low FAC reported from treatment plant (SCADA alarm)</p>	<p>Consider issuing boil water notice</p> <p>Assess potential hazard to consumers and advise accordingly</p> <p>Inspect treatment plant to identify cause of problem and rectify as quickly as possible</p> <p>Manually dose chlorine at each reservoir</p> <p>Manually adjust set point if FAC in reticulation system drops below 0.2 mg/l. Carry out sanitary survey and increase bacteriological testing if FAC <0.2 mg/l.</p> <p>Inform consumers if shutdown > 6 hours and advise to conserve water until supply restored</p> <p>Keep customers informed and advise once regular service is restored.</p> <p>Undertake additional sampling and monitoring to confirm security of supply</p>

Water Supply Contingency Plan	
Type of Event	Required Contingency Action
<p>Over Fluoridation</p> <p>Indicators: high results from monitoring samples</p>	<p>On any plant alarm or detection of high fluoride dose, stop dosing until repairs can be affective. Flush mains if fluoride level exceeds MAV.</p>
<p>E. coli transgression in a distribution zone</p> <p>Indicators: E. coli transgression reported following routine monitoring. Consumer reports of illness.</p>	<p>Follow transgression response procedure of DWSNZ:2005 (rev2008) Advise Drinking Water Assessor (DWA) Investigate cause.</p> <p>Manually dose chlorine at each reservoir Collect sample at plant for E. coli test Resample distribution at original and adjacent sites Enumerate E. coli Inspect plant/source, check chlorine dosing equipment, undertake additional FAC tests Take remedial action If E. coli < 10 per 100mL consult DWA, resample distribution zone and enumerate for E. coli for three days, continue investigation of fault.</p> <p>If E. coli > 10 per 100mL consult DWA, consider 'Boil Water' notice, intensify investigation of cause, increase disinfection, consider flushing contaminated water to waste, intensify action, consider providing alternative supply</p> <p>Continue until fault is corrected and E. coli is absent for three consecutive days and DWA is satisfied that there is no remaining contamination.</p>

Water Supply Contingency Plan	
Type of Event	Required Contingency Action
<p>Backflow contamination Indicators: Consumer reports of illness, contaminator alerts council, reports of strange taste, colour or odour in the water. Failed samples</p>	<p>If possible isolate contaminated parts of distribution zone Investigate cause, and take remedial action Advise Drinking Water Assessor (DWA) Talk to people from contaminant source to identify potential chemicals and biological contaminants Advise consumers not to drink water supply If supply requires shutdown for an extended period consider emergency water supplies. Undertake additional sampling to confirm security of supply</p>
<p>Critical Pump Failure Indicator: Alarms alerts Council Staff, sudden reduction or loss of flow or pressure.</p>	<p>Isolate failed pump and switch operation to back up pumps Carry out repairs decontaminate and test pump before reinstating Determine if failure was caused isolated by an external event and if so reduce risk of event recurring If there is a multiple pump failure, consider alternative sources, until repair are completed, and consider supplementing supply from other emergency supply.</p>
<p>Power failure Indicator: Loss of supply to reservoirs or loss of flow or pressure</p>	<p>Rely on stored water in reservoirs Utilise standby generators Manage and reduce demand If power outage is prolonged, consider use of tankered water.</p>
<p>Natural disaster (Pump station and or Network Failure) Indicator: Alarms alerts Council Staff, sudden reduction or loss of flow or pressure</p>	<p>Consider tankering from alternative sources, until repair are completed, and consider supplementing supply from other emergency supply. Keep customers informed and advise once regular service is restored.</p>