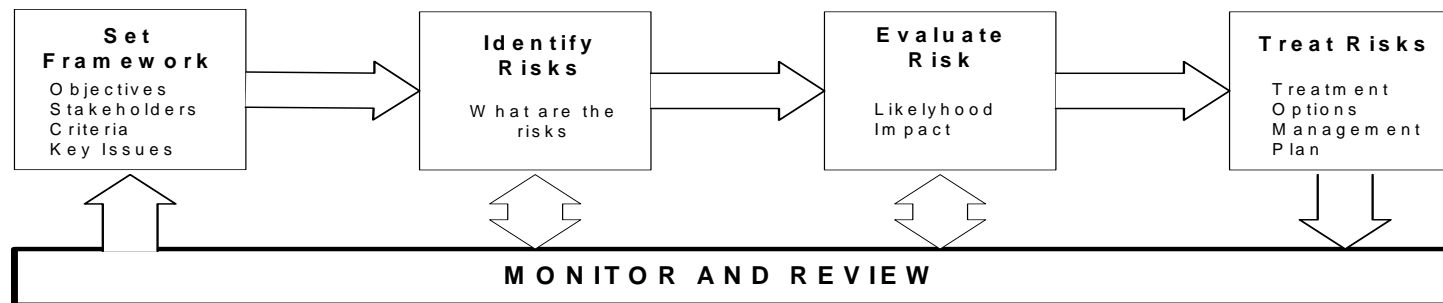


The provision of drinking water requires a further level of risk management. Under the Health Act 1956 a public health risk management plan must be produced, this document is also available to the public on request.

These documents manage those risks relevant to the particular service but the over riding principles are the same;



3.2 Developing a Risk Management Plan

Establishing the risk management context

The primary objective of the assessments is to look at the adequacy of the water systems and sanitary services and identify the public health risk associated with providing or not providing these services. The context of this assessment of risks is based on the key issues of quality of supply or service and quantity.

Degree of control assumed

Initially, risk is analysed in this procedure assuming an absence of control (mitigation) measures. Whilst in many cases controls are present, this approach facilitates the determination of the costs - benefits of risk mitigation and the adequacy of existing mitigation.

Areas of Impact

It is possible to prioritise risks within a specified area or over several areas and manage them as deemed appropriate. The areas of impact selected are;

- Public Health
- Environmental
- Amenity availability
- Reputation and customer credibility

Sources of Risk

These have been categorised into sources where like aspects are grouped together. This aims to provide a logical framework for identification and analysis that helps ensure significant aspects are not overlooked.

Level	Descriptor	Description	Frequency
A	Almost certain	Is expected to occur in most circumstances	> twice a year
B	Likely	Will probably occur in most circumstances	between once and twice a year
C	Possible	Might occur at some time	between once a year and once every ten years
D	Unlikely	Could Occur at some time	between once every ten years and once every fifty years

Table 2. Measures of likelihood

Risk Analysis

Risk analysis assesses the consequence and likelihood of a risk event occurring.

Risk Evaluation

Risk evaluation involves comparing the level of risk found during the analysis process with established risk criteria.

To evaluate the level of risk associated with water and sanitary services the following criteria and structure have been applied to evaluate the risk;

- Likelihood of an impact occurring (Table 2)
- Consequence of the impact occurring (Table 3)
- Level of risk = likelihood * consequence (Table 4)

Level	Description	AREAS OF IMPACT			
		Public Health	Amenity Available	Environment	Reputation / customer credibility
1	minor	Minor illness - Gastroenteritis* in one or more household members of affected property	Access available	Contamination affecting one property, related to sewage or stormwater or potable water	No media coverage but up to 5 residents /customers dissatisfied. Unit Manager informed of customer service issues.
2	moderate	Gastroenteritis in > 1 of the affected households. Transmission of illness from the contamination source ongoing	Delay of 1 week in availability	Contamination affecting up to ten properties or to stream or harbour causing health warnings with effect lasting up to one week.	Adverse local media coverage or between 6 and 50 residents / customers dissatisfied. Infrastructure Management Team member informed of customer service issues.
3	major	Gastroenteritis in primarily affected households or people with ongoing transmission. Secondary spread of illness beyond the affected community	Delays of up to 2-3 months in availability	Contamination (1) of land, stream or harbour with major detrimental effect; (2) of potable water affecting > 10 properties or lasting more than one week (3) damaging sewage treatment plant processes lasting < 1 week.	Adverse national media coverage, or > 50 residents / customers dissatisfied. Chief Executive informed of customer service issues.
4	catastrophic	Permanent public health warnings in the affected area. Widespread ongoing gastroenteritis in the affected area and surrounding community. Significant public health control measures required to stop ongoing transmission.	No long term access to amenity	Discharge of a contaminant destroying an ecosystem. Long term loss of a water supply source due to contamination. Damage to sewage treatment plant processes lasting > 1 week.	Adverse international media coverage or widespread public condemnation.

Table 3. Measure of impact

* Gastroenteritis sudden onset of diarrhoea (3 or more loose bowel motions in 24 hours) and/ or vomiting.

** Note that the level of public health risk may vary depending on the nature of the affected community e.g. the effects are going to be more severe if the affected area is more vulnerable to the effects of dehydration and complication from enteric illness e.g. a long-term care facility for the elderly.

When considering the information in table 3 it is important to consider that the public health level of risk will vary depending on the organism causing the problem. Also it is suggested moving up a public health risk category:

- if there is greater than 1 person hospitalised or a death associated with the contamination event or,
- Regional Public Health advise the infecting organism is likely to cause severe illness.

Table 4. Level of risk analysis matrix

Likelihood	Consequences			
	minor 1	moderate 2	major 3	catastrophic 4
A Almost certain	M	H	E	E
B Likely	M	H	E	E
C Possible	M	H	E	E
D Unlikely	L	M	H	E
E Rare	L	M	H	H

Legend

- E: Extreme risk
- H: High risk
- M: Moderate risk

Risk Treatment

Risk treatment involves identifying the range of options for treating risk, assessing those options, and applying a mitigation plan.