

4.0 Managing our assets

4.1 Asset management model

The asset management planning process implemented by the Council is shown in Figure 9.

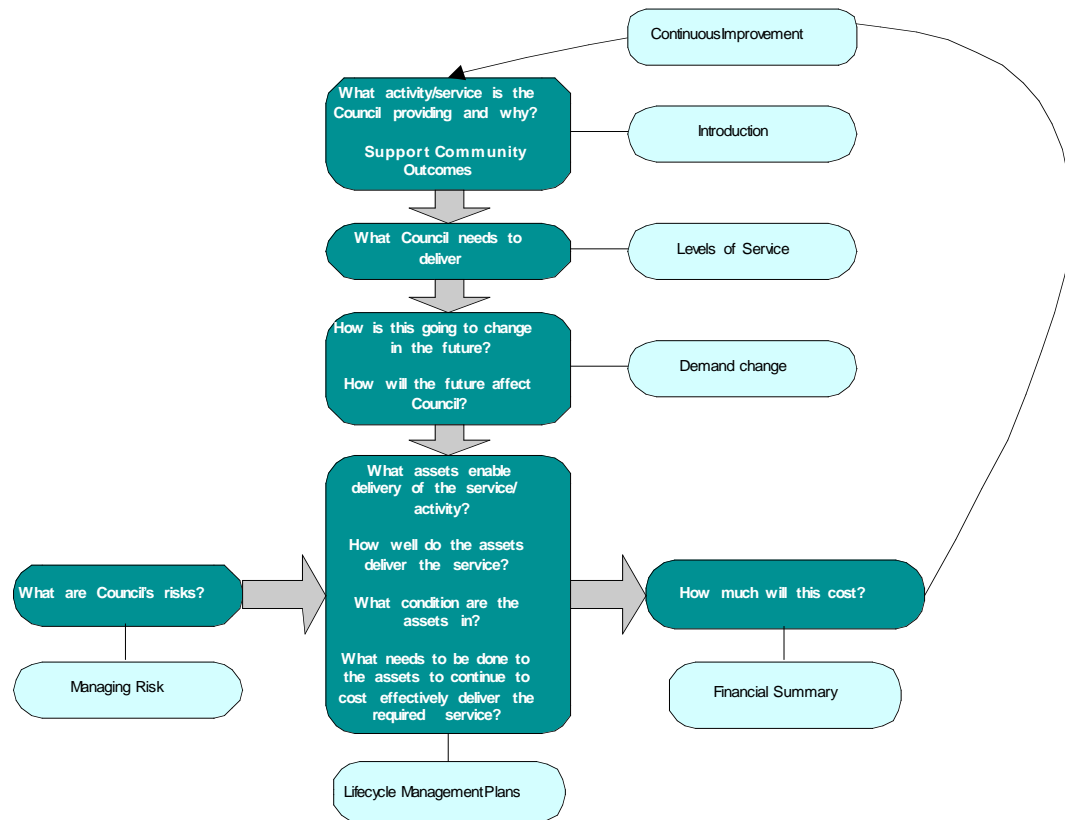


Figure 9 – Asset management planning model

4.2 Risk management

Risk management is an inherent part of the Council's overall stormwater management approach. Management of service levels, environmental and demand/growth related risks are dealt with through the strategies outlined in sections two and three of this plan and this section.

The Council's current approach to risk management can be summarised as:

- address known high and extreme risks with new management/operational strategies and/or a forward programme of remedial works, with priorities based on a risk matrix system
- manage the current known lesser risks within the existing strategies and work programmes
- where risks are unknown, develop a plan to better identify and/or quantify the risks prior to implementation of risk mitigation measures.

The Council is improving its understanding of risk using programmes to improve asset knowledge. Works activities and associated expenditure requirements are being reviewed constantly as knowledge of these assets improves. Figure 10 shows management actions planned for the highest identified risks. Other risk events, such as asset failure, have either

sound controls in place to reduce the severity of the potential risk (such as in the case of pipe deterioration failures), or have a naturally low probability of occurrence (such as failure in the case of a major earthquake).

Core value	Risk event description	May lead to	Existing controls to manage the risk	Additional controls planned to reduce the risk further
Environmental performance	Inflow of stormwater runoff and infiltration of groundwater into the wastewater network may exceed design allowances	Wastewater overflows into the stormwater network and contamination of watercourses and the sea	Managed as part of the wastewater activity	Managed as part of the wastewater activity
	Contaminants associated with urban centres, such as oils, heavy metals and litter enter the stormwater system	Contamination of the harbour or streams	Stormwater sumps have catchpits and baffles	Assess the effects of urban runoff on aquatic environments, and develop options for prevention and treatment
Service quality	Demand forecasts may not be accurate, planning action may be deferred	Increased frequency of flooding and slips	Monitoring of flood occurrence and requests for service, catchment management plan preparation, flood hazard maps and model development, climate change monitoring	Review demand assumptions and incorporate consistent assumptions in the catchment management plan analysis and network models. Undertake routine demand forecast reviews. Take a proactive role in climate change panels
	District Plan may be re-zoned leading to altered "fully developed" catchment characteristics	Increased frequency of flooding and slips	Catchment management plan preparation	Formalise a process to ensure that stormwater impacts are assessed prior to any District Plan change
Customer focus	Safety risks associated with working on the network	Near misses. Serious harm incidents, fatalities	Strong health and safety requirements in contracts and operational procedures, training and audits	Review the adequacy of the existing controls, develop contingency plans
	A pedestrian, particularly a child, may enter or be washed into the stormwater network or culvert	Near misses. Serious harm incidents, fatalities	Some intakes have grilles which prevent entry	Identify possible entry sites and assess for protection needs
Cost effectiveness	Community needs and aspirations may not be fully understood. Activities may not match community needs and aspirations	Inefficient management of the assets and community dissatisfaction	Levels of service are based on legislative requirements, industry practice and broad understanding of community expectations	Complete development of the asset performance monitoring framework. Complete Key Performance Indicator data analysis to improve levels of service descriptions. Review community consultation needs and implement recommendations
	Poor contractor workmanship	Significantly shortened asset lives	Standard contract management procedures, site observations, monitoring and testing	Complete the development of integrated contractor quality assurance process requirements

Figure 10 – Highest risks and mitigation – stormwater

4.3 Operating and maintaining the assets

The operations and maintenance strategy is intended to maintain the current levels of service, mitigate risks and minimise costs by implementing a balanced programme of planned and reactive works. The risk analysis has highlighted 11 risks associated with managing the stormwater activity, and operating and maintaining the network. Specific improvement projects have been identified to address these risks and have been programmed for implementation.

Although the Council's maintenance strategy for pipelines is mainly reactive, based on the number of stormwater service faults calls received, we operate an asset condition monitoring programme that records service fault notifications. This includes prioritised and programmed closed circuit television (CCTV) and physical drain inspections. Only piped systems that are considered to be in the "critical"² category (18 per cent) are proactively inspected to assess structural integrity.

Asset management planning, assisted by computer-based hydraulic modelling is undertaken to better understand flood risk and system performance, and identify opportunities to improve this. Flood hazard maps are prepared and catchment management plans developed for each catchment to ensure the stormwater system has sufficient capacity to cope with heavy rain.

A comprehensive emergency management plan is in place. The Council investigates the opportunities to introduce new technologies and stormwater management techniques (e.g. soakage, re-vegetation and stormwater re-use).

Water quality sampling and analysis for 82 sites are carried out fortnightly by an accredited contractor.

The Porirua stream is managed by Porirua City Council. Wellington City Council contributes 33 per cent of total maintenance costs associated with managing this watercourse.

4.4 Asset investment and growth

The Council aims to enhance the capability and integrity of our assets at the lowest long-term cost and ensure inter-generational equity.

In terms of asset investment, this is largely driven by the closure of identified service gaps such as capacity shortfalls or recreational water quality issues. The Council has developed a robust framework to ensure that focus is placed on the best value projects that deliver the highest benefits per dollar spent, and that the project option chosen to close these service gaps is the best practicable option.

4.4.1 Asset renewals

Longer-term asset renewal needs are identified through analysis of condition assessments. More detailed, shorter-term prioritised programmes are developed with reference to failure history, risk assessment (including consideration of financial, environmental and social implications of failure) and, in the case of critical drains, CCTV, visual condition assessments and site inspection information. Assets are therefore renewed when analysis

² Pipes for which failure would have severe consequences, generally large diameter pipes or pipes under dwellings.

indicates it is more cost-effective in the long term to replace rather than continue to maintain the pipe.

4.4.2 Asset development

Upgrade works required to close service gaps are primarily identified as a result of risk assessments, targeted investigations and catchment management plan preparation.

The Council's citywide flood protection approach divides the city into 34 catchments. Catchment management plans are being developed on a prioritised basis considering:

- flooding risk
- environmental risk
- customer reputation/potential growth issues
- health and safety risk.

These plans assess not only works required to increase the capacity of the primary (piped) system to achieve the target level of service, but also consider:

- sanitary sewer overflows
- environmental management
- contaminants such as litter, heavy metals, hydrocarbons
- education to achieve desired outcomes
- land use and development controls
- run-off management
- recognition of stormwater as a potential resource.

Identified upgrade works include the construction of new pipes, increase in the size of existing pipes, development of catchment features to assist the primary (piped) system such as overland flow paths, natural ponding facilities, watercourse enhancements, and facilities to improve water quality.

The costs and benefits of potential flood protection projects are assessed to develop a prioritised works programme. Major upgrades in the central city and Island Bay have been undertaken in recent years.

Pipelines no longer required to transport stormwater and not being physically replaced are marked as "disused" on records. These pipes are kept intact where possible as the Council or others may use these again in the future.