

## 3.0 Our assets

### 3.1 Asset description

Stormwater management and flood control in Wellington City is achieved through:

- Primary system:
  - Structures that intercept and direct rainfall run-off to conveyance systems: These include kerbs, channels, sumps and specific intake structures. Kerbs, channels and sumps are managed as part of the Transportation activity.
  - Conveyance systems which transport the run-off to the sea: These are generally piped systems, although in some cases are natural watercourses. Many of the natural streams in the Wellington City area were piped many years ago. Typically, the larger pipes in the stormwater drainage system are laid along the beds of the original streams (often on private property) with the smaller feeder pipes in legal road.
- Secondary system:
  - Overland flow paths and ponding areas safely manage flows in excess of the capacity of the primary system. Most secondary flow paths tend to be roads.

Activities contributing to coastal flood defences are managed separately, such as:

- provision of seawalls, managed as part of the Transportation activity
- dune stabilisation, managed as part of the Gardens and Beaches activity.

The broad asset groups and the physical quantities are shown in Figure 4. Figure 5 shows the proportion of the total replacement value for the main asset groups.

Activity	Asset components	Quantity
Pipe systems	Pipes	649 km.
	Tunnels	1 km.
	Kaiwharawhara sediment/debris collection facility	1
	Ngauranga sediment/debris collection facility	1
	Karori sediment/debris collection facility	1
Natural systems	Porirua Stream - 33 per cent share with Porirua City Council	1
	Ngauranga Stream	1
	Kaiwharawhara Stream	1
	Karori Stream	1
	Ohariu Stream	1
	Owhiro Stream	1

Figure 4 – Stormwater assets summary

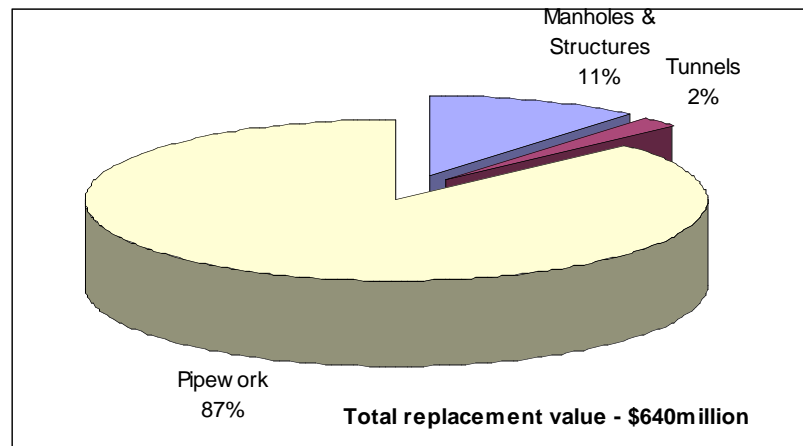


Figure 5 – Stormwater asset replacement cost

- The majority of the stormwater reticulation network is less than 375mm diameter pipes. Only 26 per cent of the network by replacement cost is of 525mm diameter or greater.
- Eighty-five per cent of the piped network was constructed during the 1950s and 1960s as presented in Figure 6.
- Secondary flow paths such as roads, kerbs, channels and sumps are maintained and administered through the Roding, Traffic and Transportation Asset Management Plan.

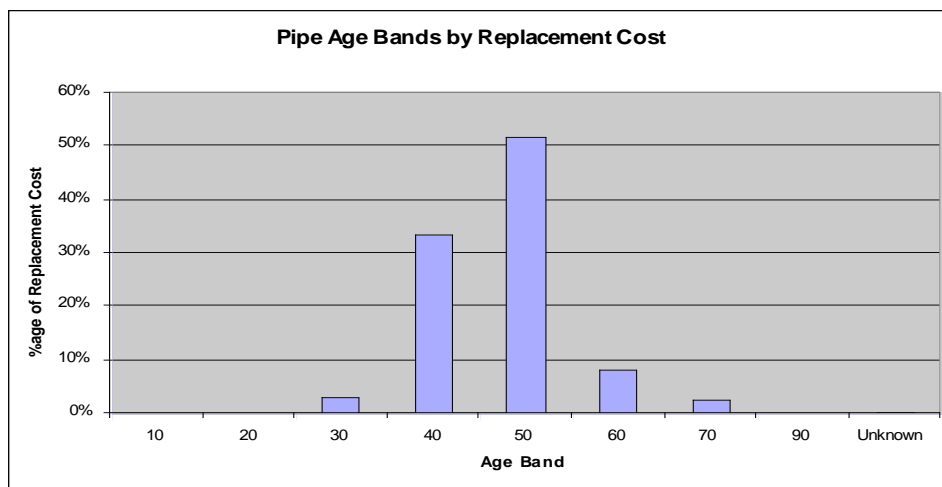


Figure 6 – Pipe network age profile

### 3.2 Asset capacity and performance

- With minor exceptions, Wellington’s stormwater network has the capacity to manage moderate rainfall events. Ongoing analysis and modelling as part of the catchment management plan development helps quantify the actual level of flood protection provided. This is likely to be in the order of between a one in two-year and a one in five-year rainfall event. Stormwater run-off in rainfall events more severe than this is not managed by the primary system and flows down secondary overland flow paths. These flow paths are generally roads, although can also include parks, reserves and private property.
- Various areas in the city have been identified as having less than the target level of flood protection. Catchment management planning to identify options and priorities

for flood protection works for 11 catchments is in progress. This includes the five linked inner-city catchments – Harris, Te Aro, Taranaki, Tory and Newtown catchments – which have been assessed as being the highest flood risk priority.

- The natural streams were piped many years ago, with larger pipes laid along the beds of the original stream often in private property. In 2001, the Council adopted the Bush and Streams Restoration Plan, “Wet and Wild” 2001 as part of a wider natural environmental strategy to protect the remaining streams.
- Water quality has improved through implementation of the sewage pollution elimination programme as part of the wastewater activity, and is now considered moderate. However, increasing environmental requirements are anticipated and remedial works are required on some discharges within the contributing catchments as reported in the Baseline Assessment of Environmental Effects (BAEE).

### 3.3 Asset condition

A "top-down" assessment of the pipe condition has provided the Council with the condition grade profile as shown in Figure 7 (where condition grade 1 indicates very good condition and pipes in condition grade 5 have failed or are about to fail). The pipe network is generally in moderate to good condition, and is consistent with the assessments made in 2000.

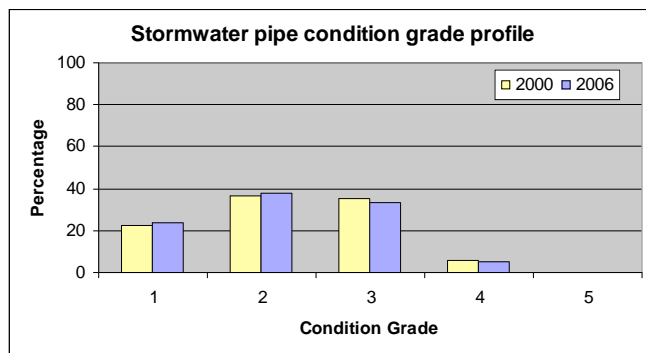


Figure 7 – Citywide condition grade profile

### 3.4 Significant negative effects

The potential significant negative effects of the stormwater activity are:

- Environmental values can be degraded by stormwater run-off contaminated with microbiological content (from cross-connection and overflows from the wastewater system, sediments, oils, greases, metals, animal waste and organic material washed from roads and other impervious areas, and rubbish and contaminants illegally discharged into the stormwater system). In rural areas, run-off may also be contaminated with herbicides, pesticides and fertilisers.
- Social values, the quality of life and public health, can be diminished by:
  - blockage of stormwater system leading to overflows and flooding of adjacent areas and buildings
  - excessive inflow/infiltration of stormwater into the wastewater network, causing wastewater overflows to land, streams, the harbour and coast (this is managed within the wastewater activity).



- Cultural sensitivities are compromised by contaminated stormwater discharges to watercourses and coastal receiving waters.
- Economic costs to the community accrue as a result of flooding and the discharge of contaminated stormwater into watercourses or coastal receiving waters.

The Council mitigates these potential negative effects by a mix of:

- asset management planning
- asset maintenance, renewal and development work
- monitoring and testing
- compliance with comprehensive environmental and health and safety procedures
- public education
- regulatory controls (e.g. building floor level restrictions) and bylaws.

### **3.5 Levels of service**

#### **3.5.1 Broad approach**

The Council plans to continue delivering broadly the same level of service within the stormwater activity, with gradual improvements to flooding and environmental protection. Improvements being introduced are expected to increase operational efficiency, cost-effectiveness and environmental performance through developing robust frameworks to increase confidence in correct project option selection and works prioritisation.

#### **3.5.2 Performance measures**

The contribution of the stormwater activity to the achievement of the city's community outcomes is measured by the activity key performance measures presented in the Long Term Council and Community Plan (LTCCP). They cover the aspects of service that are of most interest to the community and are reported in the Annual Report.

The Council has developed a number of operational measures to enable us to assess the overall quality of the stormwater activity (such as environmental, technical and cost-effectiveness standards). These measures are reported on in the detailed asset management plan.

The current and future activity measures adopted, and the levels of performance achieved, are shown overleaf.

Performance measure	Target	How we are doing
<b>Activity measures</b>		
<ul style="list-style-type: none"> <li>Response time to service requests – percentage of requests for service responded to within one hour of notification (response includes investigation and prioritisation of work).</li> </ul>	07/08	97%
	08/09	97%
	09/10	97%
	17/18	97%
<ul style="list-style-type: none"> <li>Customer satisfaction – percentage of customers who are satisfied with work carried out (specific to the stormwater operations and maintenance activities).</li> </ul>	07/08	75%
	08/09	75%
	09/10	75%
	17/18	80%
<ul style="list-style-type: none"> <li>The percentage of sampling days when the following contaminants are not seen: scums or foams, floating or suspended material, abnormal colour or clarity, fats or gross solids.</li> </ul>	07/08	100%
	08/09	100%
	09/10	100%
	17/18	100%
<ul style="list-style-type: none"> <li>The percentage of monitored freshwater sites where annual median faecal coliform bacteria counts are less than 1000 per 100ml (lower levels of these bacteria mean cleaner water).</li> </ul>	07/08	80%
	08/09	80%
	09/10	90%
	17/18	90%
<ul style="list-style-type: none"> <li>The percentage of sampling days at monitored bathing beaches when water quality complies with Ministry for the Environment guidelines (green status).</li> </ul>	07/08	90%
	08/09	90%
	09/10	90%
	17/18	90%

Figure 8 Levels of performance

### 3.6 Community engagement

The Local Government Act (2002) requires the Council to consult with affected and interested parties in making decisions. The Council ensures that all interested stakeholders have an opportunity to influence level of service decisions by:

- ongoing consultation with the community regarding community outcomes as part of the LTCCP development
- consultation with the community in 2000 as part of the Strategic Review (for the consultation process, alternative levels of service were developed together with associated cost implications, but feedback received from the community was not comprehensive)
- consultation as part of the preparation of catchment management plans and flood protection programmes
- making asset management plans available on the request
- newsletters distributed with rates notices
- consulting with affected persons on specific projects (as required by the RMA 2001).

While much of the Council's consultation will continue to be done at a high level, there is a need to seek the community's view on the trade-offs necessary where there are conflicting goals. We need to establish a balance between levels of flood protection provided by the primary (piped) system and cost. Although overland flow paths and natural ponding areas provide an integrated flood protection system, there is evidence that the community considers these secondary flows undesirable. We also need to establish a balance between protection of the environment from urban contamination and cost. It is likely that consent conditions will increase in this regard.