

The matter of sea level rise is however more troubling. The Intergovernmental Panel on Climate Change (IPCC) indicate a sea-level rise of 0.3 to 0.5 m over this century. This would result in the lower lying areas of the CBD, Newtown, Kilbirnie and Miramar being at greater risk. Future works including stopbanks and pumping systems may be ultimately required. These areas are already too intensely built-up for development controls to be effectively introduced. However when more information is available the alternatives will be considered. The Code of Practice for Land Development has been amended to cater for an expected sea level rise of 0.4m over the next 50 years. Future rainfall intensities are still too vague for inclusion. All available information is being closely monitored and will be included in the design standards as appropriate.

#### 6.7.4 Asset Planning

AMP's are continuously improving by carrying out various investigations and undertaking grassroots consultation to explore level of service options. AMP's also detail the likely future demands for service and how demands can be met or managed.

#### 6.8 Future growth



##### Demand

##### The Northern Growth Management Plan

The Northern Growth Management Plan has addressed the stormwater issues in those areas and has included water treatment issues.

Protection and enhancement of the green (open space and natural areas) and blue (streams and stormwater systems) systems will be central to how the area develops. The Plan suggests;

- Stormwater retention ponds provide a good public amenity whilst providing water quality control for Porirua Stream
- Improve water quality by limiting the impact of urban development on catchments.
- Work with developers, GWRC and PCC on flood and sustainable stormwater management to minimise impacts of flooding on stream and water quality and to protect the water catchment of Porirua Stream.
- Restrict or manage development in some areas so that streams and wetlands are recognised and protected, using if necessary new District Plan policies and appropriate zoning changes.

Glenside Stream Care Group volunteers working on Porirua Stream

As this is an area where Wellington's growth is projected, investment of resources (time, energy, financial) should be directed into the impact earthworks in the Northern Growth area will exhibit to water quality, sedimentation and ecology. Glenside Stream Care Group believes this is a priority.

#### Developer Contributions

The longer-term effects of development must be considered now including implementing suitable controls and establishing a robust, equitable and auditable method of charging financial contributions for effects of development. Developers may carry out works that have a benefit to the performance of the asset. In these instances, Council may contribute toward the cost of the works. At present this contribution is usually limited to the cost of the extra pipe size required to accommodate the flow generated outside the development. Council adopted a Development Contributions Policy in 2005.

#### Low Impact Urban Design

Council has signed up to the Central Government's Urban Design Strategy, which using quality urban design to help towns and cities become, amongst other things, environmentally responsible places that manage all aspects of the environment sustainably.



Council's Code of Practice for Land Development will be reviewed with an emphasis on Sustainable Stormwater Management. Conventional development practices lead to a range of adverse environmental and social impacts and contribute to escalating infrastructure costs. Low Impact Urban Drainage Design (LIUDD) provides an alternative approach, the potential of which is under-exploited. Council has expressed interest in joining a national task force group with Landcare Research, other regional and city council practitioners developers and engineers, to radically improve urban sustainability by making LIUDD mainstream practice. Council intends to integrate natural features, technologies and improved catchment management processes in urban development and to improve the interactions between governance and land use including better guidelines for council plans, engineering codes and incentives for LIUDD.

Waitangi Park development

RPH believe it important that Council implement sustainable urban drainage principles to reduce contaminants such as disease causing micro-organisms reaching receiving environments in which the public come into contact.

The Waitangi Park development has a treatment device included. Some of the water from the piped Waitangi Stream is being pumped to the surface and will flow through a wetland. Although the quantity of water being treated is minimal, it is a means by which the public awareness is raised and can be considered educational.

#### Water Conservation

Council may choose to promote rainwater harvesting systems that collect runoff from a sections roof and other impermeable surfaces for household use in the future. It is more practical to use rainwater indoors (showers, laundry, toilets) and/or for gardening, and reduce a section's runoff. Activities such as gardening or washing the car are ones that treated potable water need not be used. The benefits of rainwater harvesting can include:

- Reduced flood flows
- Reduced topsoil loss
- Improved water quality
- Relief of strain on other water supply
- Increased independence and water security
- Lower water supply cost

Future developments may be encouraged to make use of rainwater harvesting. Council may need to work with developers to promote double plumbing installation needed for rainwater harvesting.

Through innovative projects such as promoting rainwater tanks for gardening and car washing Council would fulfil the creative leadership and sustainable living key principles promoted in its Sustainable Development Framework.

Council anticipates promoting water conservation measures that come out of the Wellington Water Management Plan. This will ensure households take action and save water at home to reduce demand on the public supply and increase security. There are water saving opportunities in each area of a home including repairing and up-dating leaky pipes and equipment i.e. toilets. Dual flush toilets provide the user with two flush options – a full flush that uses 1.6 gallons of water and a partial flush that uses approximately half the water or 0.8 gallons. A family of four would save more than 14,000 gallons of water per year by installing 1.6 gallon per flush toilets and more than 17,000 gallons of water per year by installing dual flush toilets.

## 6.9 Outcomes of Consultation for Stormwater

Councillors want confirmation that options for mitigating run-off will be addressed.

RPH appreciate that stormwater runoff can contaminate aquatic environments therefore see it as important that adequate monitoring of stormwater outlets and adjacent environments such as bathing beaches is continued. They feel this on going monitoring is vital to establish current public health risks and identify any improvements in water quality from stormwater quality improvement initiatives.

RPH recommend that risks from potential cross-contamination need to be considered in the discussion on promotion of double plumbing installation for rainwater harvesting.

Glenside Stream Care Group wants to contribute actively to defining community expectations of and be involved in public consultation

Glenside Stream Care Group feel they have only been able to express views about water quality management through notified resource consent hearings. They suggest a formal workgroup with Councils Urban Design and BCLS (or similar strategic groups) so their concerns can be documented, managed and incorporated into planning and regulatory documents.