SUSTAINABLE ENGINEERING

Overview

The Sustainable Engineering section is responsible for the establishment of design principles and tools to assist delivery of sustainable engineering projects throughout the City. The section is responsible for the delivery of the following major projects and programmes:

Projects

- Project Twin Streams – stream restoration programme
- Waitakere Quarry
- Tool fur Urban Sustainable Code of Practice (TUSC)

Programmes

- Project Twin Streams Integrated Sustainable Catchment planning and development.
- Sustainable Living Sustainable Households programmes.
- Integrated Water Resources Management.

Sustainably designed culvert. Culvert flows initially into a stormwater detention pond which extracts pollutants before flowing into the stream

Governing regulations

- Resource Management Act 1991
- LGA 2002

How we contribute to the community outcomes

Community Outcome	Our Contribution
Sustainable Environment	Water conservation programme, Project Twin Streams, Sustainable Living Sustainable Households
Environmental Protection	Project Twin Streams, water conservation programme, integrated water resource management planning
Strong communities	Project Twin Streams, Sustainable Living Sustainable Households
Green Network	Project Twin Streams, integrated water resource management planning
Urban and rural villages	Sustainable Living Sustainable households, Project Twin Streams

Sustainability objectives

Encourage use of sustainable technologies; mitigation of climate change; and support and broker opportunities for water and efficient technological research

Environmental objectives

Increase the health of stream and estuarine ecosystems and improve biodiversity as well as contribute to lower impact footprints through low impact urban design and form

Cultural objectives

Ensure inclusiveness of & learning from different cultural & world views in processes; respect for the heritage of local areas; and promote creative ways for learning

Economic objectives

Contribute to the promotion of local production and supply of sustainable products and services at local community level (including iwi and Maori)

Social objectives

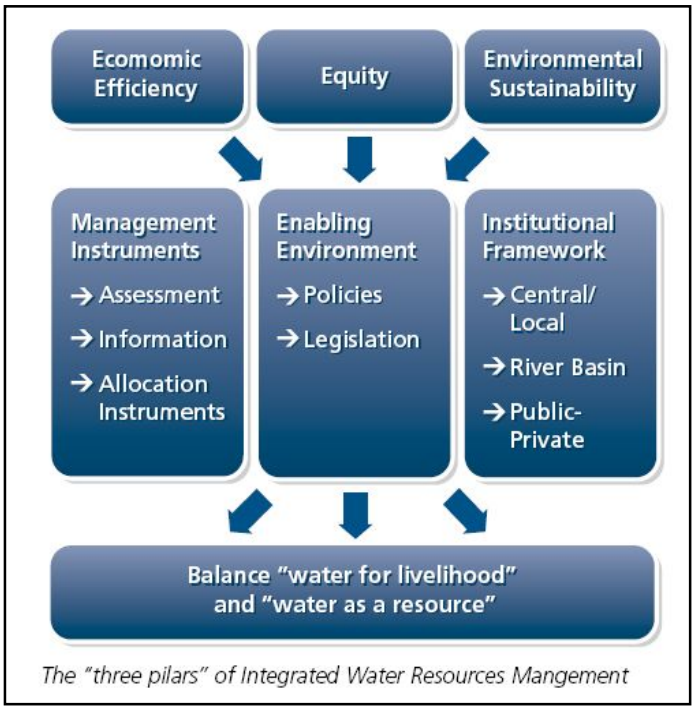
Collaborate with communities and iwi by developing creative local solutions; life-long opportunities and safe, sustainable homes and neighbourhoods

Funding for our activities

- Rates funding
- Grants from government

Integrated Water Resources Management (IWRM)

IWRM presents a new way of dealing with water challenges: compared to traditional approaches to tackling water resources problems, the IWRM process takes a broader view, examines a more complete range of solutions, and considers how different actions affect, and can reinforce, each other. IWRM is a challenge to conventional practices, attitudes and professional certainties. "IWRM is therefore, a process that promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems".



The "three pilars" of Integrated Water Resources Mangement

This is the rationale for the (IWRM approach that has now been accepted internationally as the way forward for efficient and sustainable development and management of limited water resources and for coping with conflicting demands.

Principles of IWRM in Urban Areas

- Should be applied at catchment level.
- Integrate water and environmental management through Environmental Impact Assessments (EIA's), water resources modelling and land use planning through a systems approach.
- Full participation by all stakeholders, including the community; social dimensions, capacity building and availability of information (including education and awareness; information resources; regulations and compliance; basic infrastructure and market stability).
- Full-cost pricing complemented by targeted subsidies (including central government support; reliable and sustained financing; equitable allocation of water resources.
- Recognise water as an economic good.

Sustainable Living Sustainable Households programmes

The Sustainable Living-Sustainable Household Programme builds on the successful community engagement by the community organisations and the recognition that sustainable development requires interventions at multiple levels.

The focus of Sustainable Living-Sustainable Household programmes is on household behaviour change regarding water conservation, water and electricity consumption, as well as use and reliance on cars.

To date, 196 households have participated in the programme, with 45 houses receiving insulation retrofits.

TUSC

The purpose of Tool for Urban Sustainability – Code of Practice (TUSC) is to produce a web-based analysis tool to assess and plan new urban developments against sustainability indices. TUSC intends to be a framework that produces a flexible and evolving Code of Practice that easily adapts to make use of latest analysis techniques, accurate and contextual environmental data, new treatment technologies and design practices, up-to-the-minute monitoring databases and an expanding set of real-life case studies. Rather than imposing a "one-size-fits-all" set of rules, it will fit within local planning contexts and aid implementation of local community goals and objectives.

Earthsong, in Swanson is an example of a community using sustainable building and landscaping techniques