

## Turning townsite salinity into a liquid asset

Urban salinity has a significant economic impact on at least 38 rural towns in Western Australia. The Salinity Investment Framework (SIF) predicts that damage within those towns will cost more than \$55 million statewide over the next 30 years. With water restrictions increased by climate change, economic and social development in these towns is being stifled by declining water supplies.

Salinity management based solely on water abstraction is not cost effective. However, an integrated approach incorporating salinity management with new industries (based on local water production) may be viable and produce multiple benefits. This project will show how locally sourced saline groundwater may be treated and turned into a resource for the community.

Delivered over three years through 16 'Priority Towns', Rural Towns – Liquid Assets (RT-LA) will demonstrate how to control townsite salinity *and* produce returns from saline groundwater production. It will do so within partnership arrangements between the Department of Agriculture, Local Government, CSIRO and Regional Catchment Councils with support from the National Action Plan for Salinity and Water Quality.

RT-LA has been designed to fill the knowledge gap between current understanding of groundwater systems and the practical application of water production and utilisation technologies. It is strategic in nature, crossing regions, and targeting the highest priority towns identified within the Salinity Investment Framework.



*Geophysical logging in Moora*

### Objectives

- Protect townsite infrastructure from salinity
- Protect remaining biodiversity areas in or adjacent to towns
- Produce a model for integrated town water management
- Develop alternative new supplies plus recycled water schemes
- Reduce reliance on scheme water in towns
- Foster high value industries using new water supplies

### Outputs

- **A Rural Town Water Management System Model**
- **Water Management Plans (WMPs) for each of 16 Priority Towns**

The plans will link current knowledge of each town's water resources and salinity problems and convert that into a detailed action plan. **The WMPs will take each community to the threshold of implementation** and include:

- ⇒ Salinity and waterlogging control measures
- ⇒ Economic analysis of groundwater treatment and disposal options
- ⇒ Evaluation of water use options, including economic analysis of water use/reuse
- ⇒ Social benefits derived from increased water availability.

- **Four Integrated Water Management Pilot Schemes with on-ground work demonstrating:**

- ⇒ Salinity control based on groundwater pumping and drainage
- ⇒ Water reticulation and treatment
- ⇒ Saline groundwater purification using reverse osmosis
- ⇒ Techniques for brine and bitterns treatment and disposal
- ⇒ Mineral extraction and energy generation
- ⇒ Water utilisation/reuse options.

## Benefits

1. Cost-effective salinity control in WA townsites.
2. New water resources to enable a range of economic and social benefits to communities through development of alternative water supplies.
3. Improvements to the natural resource base within townsites (water, soil and vegetation) and reduced reliance on imported water.

## Partner contributions

- The Department of Agriculture has committed \$1.5 million in cash and \$500,000 of in-kind contributions to the project over three years.
- National Action Plan for Salinity and Water Quality funding of \$1.5 million over three years is sought through the Avon, Northern Agricultural, South Coast and South West regional catchment councils.
- CSIRO will contribute expertise as part of its *Water for a Healthy Country* program.
- Local government authorities participating in the project are asked to contribute \$1.5 million in cash over three years. The LGA contribution is weighted according to town size and whether it is to be a 'Priority Town' or a 'Pilot Town'.
- Other partners including The University of WA, the CRC for Landscape Environments and Mineral Exploration (LEME) and the Chemistry Centre (WA) are providing in-kind contributions totalling more than \$800,000.

The total cost of the project is \$6 million over three years



Salinity damage to a garden wall

For further information on the *Rural Towns - Liquid Assets* project please contact:

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