sustainable stormwater systems

Website: www.spacedownunder.com.au
Email: david@spacedownunder.com.au
Mobile: 0418806803 **Fax:** (08) 83137079

1 Purpose of the EOI

- Expressions of Interest (EOI) are invited from councils wishing to partner with Space Down Under in a sustainable stormwater harvesting research and development project.
- Space down Under is dedicated to research and development of the TREENET kerb side inlet and site-specific verge infiltration zones for healthy tree growth in the urban environment.

2 Target stakeholders for the project

- Water Sensitive Urban Design decision-makers (state and local councils, landscape architect, developer, arborists and community)
- Research institutions
- Government regulators

3 The Project

3.1 Background

The TREENET inlet system is an emerging WSUD tool which harvests road runoff from residential streets and arterial roads to irrigate street trees. By intercepting the 'first flush' of stormwater, TREENET inlets remove pollutants near their source and promote biosequestration of nutrients such as phosphorous and nitrogen that might otherwise cause algal blooms in receiving waters downstream. TREENET inlets are installed in the kerb; they connect to an infiltration trench or leaky well which detains the water until it soaks into the soil in the nature strip. By placing this water in the soil profile at a distance from the tree (ideally midway between two street trees) a moisture gradient is set up whereby root development is toward the source and away from other hard infrastructure. Trees are then able to redistribute this water to other drier locations in the root zone by a process known as hydraulic lift.

In 2014 a University of SA PhD research project by Harsha Sapdhare was conducted to investigate the hydraulic performance, water quality improvement, economic and environmental impacts of the R300 (first model) TREENET inlet. The study outcomes are published in high impact peer reviewed journals.

TREENET inlets were first installed in 2010 and the turbulent flow design principal that prevents clogging has been significantly improved upon subsequently. Various infiltration zone designs have been developed for site specific conditions. Space Down Under, the inventor, owner and supplier of the TREENET Inlet technology proposes to undertake a range of monitored, long term trials in Australian cities to advance the sustainable practice and build knowledge sharing for future installations. Currently, the new designs are in place with:

improved capacity of the infiltration pits

improved acceptance capacity of the inlets

- **improved distribution systems for tree irrigation**
- **durable with low carbon foot print using recycled material**
- **easy installation process, low maintenance**

Website: www.spacedownunder.com.au
Email: david@spacedownunder.com.au
Mobile: 0418806803 **Fax:** (08) 83137079

3.2 Project objectives

- To investigate the harvesting capacity of various TREENET inlets coupled with site specific verge infiltration zones
- To determine the effectiveness of TREENET inlet to reduce the urban flow
- To explore and inform best practice to irrigate street trees
- To investigate the potential of aquifer recharge with infiltration systems in urban environment

3.3 Key outcome from the project

- Use of trial case studies to generate baseline information for TREENET and Australian Government Research Projects
- Develop a best practice guide to practitioners for the Australian context
- Use of collected data to calculate life cycle assessment (Economic and environmental impact)
- Sharing information for future improvements

3.4 Research questions

Please let us know the most important issues for you. In general terms FAQS are

- How do TREENET inlet and infiltration systems help to reduce the local flooding?
- What is the effect of passive irrigation on tree growth?
- What is the infiltration capacity of the native soil and aquifer recharge?
  (note: the questions can be site specific and based on requirements)

3.5 Potential project requirements

- Number of TREENET inlet installation sites (Minimum 3)
- Problems with site (flooding, pavement damage due to tree roots)
- Monitoring sites, data collection (infiltration tests, water quality improvements)
- Pre-post installation photos
- Data presentation and sharing

3.6 Types of interest sought

- Research scope, methodology and costing and reporting
- Trial site monitoring and data reporting
- Funding opportunities
- Developing mutual understanding

4 EOI: Please complete the attached form

If you would like more information about research program please contact us,

Mobile: 0418806803 (David Lawry OAM) & 0425420340 (Harsha Sapdhare)

email: david@spacedownunder.com.au & harsha@spacedownunder.com.au

Website: www.spacedownunder.com.au

Website: www.spacedownunder.com.au
Email: david@spacedownunder.com.au
Mobile: 0418806803 **Fax:** (08) 83137079

5 We like to hear about you

Organisation name	
State	
Contact details	
Name the current WSUD tools in use	
Problems	
Questions	
Objectives	Please tick and add note if important
Street tree watering	
Reduce local flooding	
Reduce flow	
Improve water quality	
Feedback on EOI program	

Together we create climate resilient cities