

## WSUD Decision Support - Comparative Assessment Tool

The following explanatory notes were compiled by Col Freeman, July 2011

### Background

The Lower Georges River Sustainability Initiative is a partnership between Kogarah City Council, Hurstville City Council, Rockdale City Council, Sutherland Shire Council, the Georges River Combined Councils' Committee and the Sydney Metropolitan CMA. It has been assisted by the NSW Government with funding through the Environmental Trust.

In 2009, the Lower Georges River Sustainability Initiative (LGRSI) identified Water Sensitive Urban Design (WSUD) as a critical approach to achieve the objective of improving the effectiveness of urban water management within the catchment of the lower Georges River.

In support of this aim, a Rapid Assessment and Action Planning Tool was developed to measure the institutional capacity of participating councils and determine associated strategies for improvement. Activities were linked to LGRSI on-ground works funding.

To download further information and/or associated guidelines and templates in order that you may replicate the process within your own council, refer <http://www.wsud.org/tools-resources/rapid-assessment-tool/> )

The [Botany Bay Water Quality Improvement Plan](#), was selected to inform project selection as it determines sub-catchment based stormwater management priority areas. However, Council staff also identified the need to document and justify project selection criteria and decision support frameworks within these sub-catchments, leading to the establishment of the following WSUD Decision Support – Comparative Assessment Tool.

### What is it?

The WSUD Decision Support Comparative Assessment Tool allows councils to compare and evaluate on-ground projects within (or between) identified priority sub-catchments.

This tool was adapted from a tool used within several Sydney councils and described in a conference paper (Collins and Spears, 2009). Discussions with Anthony Collins from Parramatta City Council and staff at the councils involved in the LGRSI identified a range of topics and issues that could be added for consideration within the tool.

In particular, amendments were made in the areas of social and institutional benefits. Notably, these areas are the least readily quantified and most open to subjective interpretation.

The tool has been used within the LGRSI councils to compare and evaluate options for on-ground works projects. Use of the tool has highlighted several ancillary benefits:

- Business case for staff to use within council approval processes;
- Information needed for media promotion (eg local newspapers; internal newsletters);
- Encourages a conversation within council regarding some of the less readily quantifiable aspects of an on-ground project.; and
- Focuses attention on the opportunities for institutional capacity building.

### How do I use it?

The primary part of the tool is a spreadsheet, which calculates summary values from numerical scores entered within the various cells, working from left to right across the columns. This allows up to six project proposals to be assessed and compared.

Five critical questions are provided as a first step in the process of using the tool. These critical questions are provided to address issues which might over-ride the quantitative assessment emerging from the spreadsheet, or otherwise inform the decision to proceed. By way of explanation, there could be reasons regardless of the benefit/cost ratio of a project that it should proceed (eg valuable habitat downstream to be protected) or not proceed (eg no sign-off from asset maintenance managers suggesting the project will be poorly maintained).

Additional issues, which are not currently addressed, but which emerge as important issues for council, can be added as critical questions if identified as council priorities. For example,:

- Solar radiation or urban heat island impacts;
- Reduced greenhouse gas emissions and/or carbon offset opportunities.

### Environmental Benefits

The scores for the *first five of the columns* within Environmental Benefits are calculated during the process of MUSIC modelling for the project proposals. Notably, the effectiveness of proposed structures or interventions is noted (so that it may be compared to targets for efficiency) and used to generate the figures for reduction in total kilograms. The reduction in kilograms is the figure, which affects the calculation of benefit/cost ratio.

The scores for *terrestrial biodiversity* are calculated by choosing the most appropriate response from the five options provided in the table, and scored 1-5. The five options involve distinctions between the significance of the biota (ie identified as endangered native species or communities vs native species or communities) and the degree of improvement.

Notably, the assessment does not refer to aquatic biodiversity. Values, which are not currently addressed but which may be affected by a proposed intervention include those values associated with in-stream substrate, aquatic flora and fauna, and waterbird flight paths.

#### Social Benefits

The scores for *amenity* are calculated by choosing the most appropriate response from the five options provided in the table, and scored 1-5. The five options involve distinctions between the degree of improvement to amenity, and the opportunity for both visual and recreational amenity to be affected.

The scores for *Political or community promotion opportunity* are calculated by choosing the most appropriate response from the five options provided in the table, and scored 1-5. The five options involve distinctions between the degree of community or political interest in the proposal, and the value of the proposed intervention in promoting WSUD.

Notably, these issues are also addressed in one of the critical questions. This reflects an underlying assumption within the program which developed the tool: that the barriers to further adoption of WSUD are primarily social and institutional rather than technical, and therefore that cultural change involving increased awareness and acceptance of WSUD is critical.

#### Institutional Benefits

The scores for *Council capacity building* are calculated by choosing the most appropriate response from the five options provided in the table, and scored 1-5. The five options involve distinctions between the degree of cooperation between departments and the extent to which new skills are required.

Notably, this reflects an underlying assumption within the program which developed the tool: that the barriers to further adoption of WSUD are primarily social and institutional rather than technical, and therefore that institutions (councils) require capacity across the range of departments.

The scores for *Integration with existing works/plans* are calculated by choosing the most appropriate response from the five options provided in the table, and scored 1-5. The five options involve assessment of the degree of strategic alignment of the proposal.

### Total Benefits ( /50)

The scores for Total Benefits are generated automatically as the sum of scores for all benefits (Water Quantity, Water Quality (3), Biodiversity, Social Benefits (2) and Institutional benefits (2)).

### Costs

Establishment Costs are estimated by the project proponent, and are the costs of installing the WSUD structure.

Life cycle costs are estimated by the proponent, and are the costs associated with maintaining the WSUD structure over its expected life.

### Total Costs

The scores for Total Costs are generated automatically as the sum of scores for Establishment Costs and Life Cycle Costs.

### Benefit / Cost Ratio

The scores for Benefit/Cost ratio are generated automatically as the result of dividing the Total Benefits scores by the Total Costs scores.

### Cost per Hectare

The scores for Cost per Hectare are generated automatically as the result of dividing Total Costs by the Area of Catchment treated.

#### References:

Collins, A. and Speers, K. (2010). Real Time Water Sensitive Urban Design. Conference paper: National Conference of the Australian Stormwater Industry Association, Sydney