



CRC for
Water Sensitive Cities



INFFEWS Benefit: Cost Analysis Tool

Industry Note
Project IPR2

CRCWSC has developed a Benefit: Cost Analysis (BCA) Tool tailored to assessing investments for water-sensitive cities. It supports balanced and systematic decision making and provides evidence for use in business cases. The tool is fully consistent with BCA guidelines prepared by Australian governments.

Introduction

The BCA tool is part of a broader package of economic tools and resources developed under the CRCWSC's Comprehensive Economic Evaluation Framework referred to as INFFEWS (Investment Framework For Economics of Water Sensitive Cities).

After an extensive review of existing BCA tools in Australia, the CRCWSC has developed a user-friendly BCA tool tailored to water sensitive cities investments. It has been developed in close consultation with stakeholders, tested by the developers in case studies, and is currently being trialled by organisations to ensure that its usability and features are aligned with industry needs. Updated versions will be released as the tool further develops.

Benefit Cost Analysis for Water Sensitive Projects

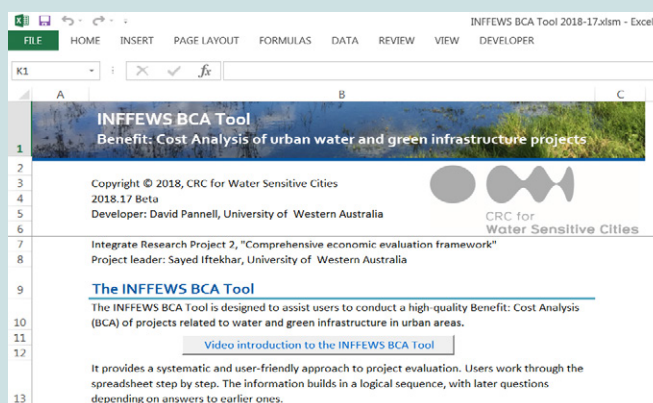
In the INFFEWS BCA Tool, the specification of benefits is highly flexible, and can deal with any type of benefit likely to emerge in a project related to water or green infrastructure. Relevant benefit types include improved security of water supply, improved local amenity, reduced flood risk, and delayed infrastructure costs.

A government agency can focus on benefits and costs for society as a whole, whereas a business, such as a water utility, may choose to focus on benefits and costs to the organisation responsible for the project.

It can be used by any organisation interested in the distribution of benefits of a project or investment among multiple stakeholder groups.

The INFFEWS BCA Tool consists of the following components;

- **BCA Tool and Guidelines** - comprising a multi-sheet Excel spreadsheet and a detailed User Guide;
- **Rough BCA Tool** - simplified spreadsheet and guidelines to enable a quick and rough BCA;
- **BCA Comparison Tool** - spreadsheet to compare and rank the BCA results from multiple projects, or different versions of the same project.
- **BCA for Strategic Decision Making** - document outlining the BCA basics, guidance on strategic issues related to BCAs, and use of economic information in strategic decision making.
- **Training resources and opportunities are currently under development**



Another tool developed under the framework, is the **INFFEWS Value Tool**, which consists of a database of non market valuation studies that are relevant to water sensitive projects. This tool is linked with the INFFEWS BCA tool in that it provides suitable values of the intangible benefits derived water-sensitive investments (such as green infrastructure) for inclusion in a BCA.



Who should use this tool?

Three different groups of users, with different needs, are envisaged for the tool:

- *Experienced economists*: the aim is to provide a standard BCA tool that is flexible, convenient and easy to use. The tool should foster good BCA practice and enhance the comparability of different BCAs.
- *Non-economists who have been trained in economic evaluation*: the aim is to put BCA within the hands of sufficiently trained users who lack a previous background in economics. The tool will help these users avoid common errors and overcome challenges.
- *Managers who wish to understand BCA better*: the aim is for them to become well-informed and effective purchasers of BCA services.

Features of the INFFEWS BCA Tool:

- Flexible and easy to use (available in excel spreadsheets)
- Comprehensive cost assessment, including capital, operational and maintenance costs
- Use of market values and non-market values (sometimes referred to as intangible benefits)
- Capacity to select up to 4 stakeholder organisations (beneficiaries and/or contributors);
- Automatically generates a range of Sensitivity Analysis results, including Monte Carlo and break-even analysis;
- Systematically asks the user to quantify the project risks;
- Inclusion of “with project” versus “without project” scenarios;
- Allows for multiple benefit types, including introduction of staggered and phased benefits;
- Built-in logical consistency checks to flush out any biased responses;
- HELP videos installed throughout the tool and examples provided in the User Guide;
- Drop down and pre-populated menu options;
- The facility to record the sources for each item of data included in the analysis to ensure transparency about the assumptions used;
- The facility for reviewers to comment on each part of the analysis, and for the analyst to respond to those comments;
- A useful summary report of the BCA results.

Further Reading

Pannell, D. (2017). Review of existing Benefit: Cost Analysis (BCA) tools relevant to water-sensitive cities: IRP2 Comprehensive Economic Evaluation Framework (2017 – 2019). Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities.

Gunawardena, A., Zhang, F., Fogarty, J., and Iftekhar, M. S., (2017). Review of non-market values of water sensitive systems and practices: An update. Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities.

Further information



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<https://watersensitivecities.org.au/research/our-research-focus-2016-2021/integrated-research/irp2-wp3/>



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