

Water sensitive urban design

Life cycle costing data



Melbourne Water has recently developed a life cycle costing data table to assist councils in estimating costs associated with stormwater treatment asset planning during the design, construction, establishment, maintenance and renewal phases. The data will inform council budgets and ensure allowances for stormwater treatment assets are based on whole of life cycle costs.

The life cycle cost information is grouped according to asset type, size, service level (maintenance frequency) and, where possible, contracted rates versus in-house works. Other factors including traffic management and access issues are also considered.

A summary of the life cycle costs for asset construction, maintenance (establishment and ongoing) and renewal is provided overleaf.

BENEFITS OF WATER SENSITIVE URBAN DESIGN

Water Sensitive Urban Design aims to integrate the urban water cycle into urban design. The social and environmental benefits of stormwater treatment systems are widely recognised and include:

- improved urban waterways
- greener open spaces and enhanced urban landscapes
- reduced localised flooding
- improved amenity in our local communities
- alternative water supply option.



HOW COUNCILS CAN USE THE DATA

The life cycle costing data can be used by councils to refine stormwater treatment asset management planning. In particular, the life cycle costs will enable councils to better plan for maintenance of stormwater treatment assets and refine budgets for life cycle costs of individual stormwater treatment assets. This includes informing and assisting councils to better forecast budgets for the management of stormwater treatment assets.

The incorporation of realistic maintenance costs into council budgets will help ensure that stormwater treatment assets are adequately maintained; and therefore help reduce the financial burden to councils associated with rectifying assets that are failing due to inadequate maintenance.

It is expected that the maintenance cost estimates provided will assist councils to get better value for money when negotiating maintenance contracts.

For more information on inspection and maintenance schedules and sample maintenance contract documentation please refer to the Melbourne Water WSUD Maintenance Guidelines on our website melbournewater.com.au

For access to the full Life Cycle Costing Report, please contact the Melbourne Water Stormwater Team at livingrivers@melbournewater.com.au



| ASSET | ASSET PARAMETERS | CONSTRUCTION ¹ | MAINTENANCE | | RENEWAL |
|---|---|---|--|---|---|
| | | | ESTABLISHMENT (FIRST TWO YEARS) | ONGOING | |
| WETLANDS ² | < 500 m ² 500 to 10,000 m ² > 10,000 m ² | \$150/m ² \$100/m ² \$75/m ² | Two to five times ongoing maintenance cost | \$10/m ² /yr \$2/m ² /yr \$0.5/m ² /yr | No data |
| SEDIMENT BASINS ² | < 250 m ² 250 to 1000 m ² > 1000 m ² | \$250/m ² \$200/m ² \$150/m ² | | \$20/m ² /yr \$10/m ² /yr \$5/m ² /yr | Remove and dispose of: Dry waste = \$250/m ³ Liquid waste = \$1,300/m ³ |
| ON-STREET RAINGARDENS ³ | < 50 m ² 50 to 250 m ² > 250 m ² | \$2000/m ² \$1000/m ² \$500/m ² | | \$30/m ² /yr \$15/m ² /yr \$10/m ² /yr | Minor reset = \$50 to \$100/m ² |
| BIORETENTION BASINS ³ | < 100 m ² 100 to 500 m ² > 500 m ² | \$1000/m ² \$350/m ² \$250/m ² | | \$5/m ² /yr | No data |
| TREE PITS ³ | < 10 m ² total 10 to 50 m ² total > 50 m ² total | \$8000/m ² \$5000/m ² \$1000/m ² | | No access issues = \$150/asset/yr Traffic issues or specialist equipment required = \$500/asset/yr | No data |
| GRASS SWALES AND BUFFER STRIPS ⁴ | Seeded – no subsoil drain | \$15/m ² | | \$3/m ² /yr | No data |
| | Seeded – subsoil drain | \$25/m ² | | | |
| | Turfed – no subsoil drain | \$20/m ² | | | |
| | Turfed – subsoil drain | \$35/m ² | | | |
| | Native grasses established | \$60/m ² | | | |
| VEGETATED SWALES AND BIORETENTION SWALES ⁴ | | 150/m ² | \$5/m ² /yr | No data | |
| IN-GROUND GPTS | < 300 L/s 300 to 2000 L/s > 2000 L/s | \$50,000/asset \$150,000/asset \$250,000/asset | N/A | Inspection = \$100/visit Cleanout = \$1000/visit | No data |

1 Includes planning and design

2 Area at normal water level

3 Area of filter media at bottom of extended detention

4 Total vegetated area

Disclaimer: The cost estimates provided should be considered as a starting point only and represent the best cost estimates available based on current information (Oct 2013). The cost estimates will be reviewed and refined over time as better data becomes available. It should be noted that data are generally based on 'standard residential' developments and the cost of equipment hire is not included in the estimates.