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| Stormwater harvesting design assessment checklist |
| This list has been developed by Melbourne Water for use by Councils in assessing stormwater harvesting project designs. |

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| Harvesting location: |    |
| Catchment area (ha) |    |
| Storage volume (kL) |    |
| Minor flood (m3/s) |    |
| Major flood (m3/s)  |    |

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| **Design stage** | **Modelling** | **Y/N** | **Where to look** |
| Concept | Treatment performance and reuse reliability verified using MUSIC? |   | Design report |
| Concept | A representative climate data set for the catchment with a length of at least 10 years used? |   | Design report |
| Concept | Demands adopted are realistic. |   | Design report |
| Concept | Impervious fractions chosen reflect likely effective impervious fractions for catchment and losses through system have been considered. |   | Design report |
| Concept | Low Flow Bypass modelled correctly. |   | Model |
|  | **Diversion** |  |  |
| Functional | Inlet pipe or structure sufficient for maximum design flow (minor and/or major flood event)? |   | Calculations |
| Functional | Scour protection provided at inlet? |   | Drawings |
| Functional | Bypass is provided for baseflows to the satisfaction of Melbourne Water? |   | Calculations |
| Concept | Diversion is from a council or Melbourne Water drain and not a constructed or natural waterway. |   | Design report |
| Concept | Stormwater harvesting license pre-application given "in principle" support by the authority responsible for the drain (Council or Melbourne Water). |   | ‘In principle letter’ of support |
| Detailed | Stormwater harvesting licence approval and stormwater connection approval from the authority responsible for the drain (Council or Melbourne Water). |   | Approval Documents |
| Functional | Other stormwater schemes or extractions within the relevant catchment have been considered. |   | Design report |
|  | **Management of risks** |  |  |
| Concept | Approach for managing health risks is clearly identified with treatment, access controls or dripper/subsurface irrigation used in accordance with 'Australian Guidelines for Water Recycling: Stormwater harvesting and reuse' requirements. |   | Design report |
| Concept | Approach for managing operational risks is in accordance with 'AGWR: Stormwater harvesting and reuse' to the satisfaction of approving authority. |   | Design report |
| Functional | Diversion is free from tidal influence and catchment is free from significant areas of high soil salinity (e.g. > 2dS/m) or known salty lakes.If stormwater to be used for irrigation the stormwater quality and soil to be irrigated has been tested. It has been confirmed that soil is suitable for irrigation and that irrigation will not adversely impact upon soil structure. |   | Design report |
| Functional | Salinity and pH of stormwater source is satisfactory based on grab sample or other monitoring. |   | Design report |
| Concept | 2. Catchment land use is limited to residential or commercial uses, is sewered and is without pollution sources such as:* agricultural or industrial land uses
* significant sources of sediment such as extensive construction activity or eroding stream bank
* significant areas of corroding roof
* on-site sewage management systems such as septic tank
* wastewater treatment plants discharging into the catchment
* contaminated sites
* areas with acid sulphate soils
 |   | Design report |
| Concept | Scheme is located in an existing urban area within the urban growth boundary and the scheme is not within the catchment of a water-stressed waterway ANDno more than 50% of available stormwater is proposed to be reused OR scheme is for a new development area. |   | Design report |

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| Concept | Characteristics of irrigation area are suitable for irrigation including:* soil water holding capacity
* low soil salinity and sodicity
* slope
* no large surface rock outcrops
* depth to top of seasonal high water table >3 m
* depth to bedrock or hardpan >1 m
 |   | Design report |
| Concept | Risks to groundwater and from run-off or leaching of irrigation water have been considered. |   | Design report |
| Concept | Desktop review of potential contamination risks has not identified any likely contamination at the site of treatment systems or storages that may affect feasibility or cost. |   | Design report |
|  | **Treatment and access controls** |  |  |
| Concept | Gross pollutant trap or sediment basin designed to capture 95% of coarse particles ≥ 125 µm diameter for the peak three month ARI flow. |   | Calculations |
| Concept | Sediment basin checklist completed and design is in accordance with relevant design guidelines (Constructed Wetland Design Manual, WSUD Engineering Procedures: WSUD). |   | Calculations |
| Concept | Wetland checklist completed and design is in accordance with relevant design guidelines (Constructed Wetland Design Manual, WSUD Engineering Procedures: WSUD). |   | Drawings |
| Concept | Raingarden checklist completed and design is in accordance with relevant design guidelines (Constructed Wetland Design Manual, WSUD Engineering Procedures: WSUD). |   |  Drawings |
| Functional | Only treated flows (from wetland or raingarden outlet riser) are directed to reuse storage while partially treated flows (e.g. overflow weir) are bypassed. |   | Calculations |
| Detailed | Means for restricting access are clearly identified and considered appropriate (e.g. fencing). |   | Calculations |
|  | **Hydraulic structures** |  |  |
| Detailed | Maintenance drains provided. |   | Drawings |
| Detailed | Protection against clogging or blockage of irrigation systems is provided? |   | Drawings |
|  | **Storage** |  |  |
| Functional | Storage is appropriately sized to provide a reasonable level of reliability of supply and is cost-effective? |   | Design Report |
| Detailed | Maintenance access provided for clean-out of storage. |   | Drawings |

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| Detailed | Storage is designed so that either:* Sediment and litter is prevented from entering storage.
* Maintenance access is provided to storage and storage is designed so that sediment will accumulate in one part of the storage.
 |   | Drawings |
| Functional | Dedicated sediment dewatering area is provided for sediment basin or storage if required? |   | Drawings |
| Functional | If open storage is used pre-treatment to minimise nutrient inputs or a short residence time are used to minimise risk of algal growth. |   |   |
| Functional | If open storage is used treatment for an additional 1 log reduction or management to prevent inputs from bird faecal matter is provided. |   |   |
|  | **Operational and maintenance plans** |  |  |
| Detailed | A scheme operation and management plan has been prepared. |   |  |
| Detailed | A Piping and Instrumentation Diagram (P&ID) is provided as per ISO 14617-6. |   | Drawings |
| Detailed | A list of all assets is provided. |   |  |
| Detailed | All quality and critical control points, monitoring and sensors are identified clearly on plans. |   | Drawings |
| Detailed | All components of system requiring maintenance are clearly identified on drawings for operational and maintenance plan. |   | Drawings |
| Detailed | A summary of maintenance requirements for all components of system requiring maintenance is provided in operation and maintenance plan. |   |  |
| Detailed | Construction stage inspection and testing checklist, as well as commissioning plan provided. |  |  |