

GOYDER INSTITUTE FOR WATER RESEARCH MODEL METADATA TEMPLATE

METADATA REQUIRED	DETAILS
Model Name and version	<p>Paddocks Catchment Stormwater Runoff Model <i>Filename: Paddocks-1993-cal-FINAL.inp</i></p> <p>The model was built for US EPA SWMM Version 5.0.022</p> <p>USEPA Storm Water Management Model (SWMM) http://www2.epa.gov/water-research/storm-water-management-model-swmm</p> <p>PCSWMM http://www.chiwater.com/Software/PCSWMM/</p> <p>Please note that the model was developed using the commercially available PCSWMM model, but is capable of running in the open source US EPA SWMM model (which does not have support for geographical information system tools for model development nor tools for complex post processing of model output)</p>
Date of lodgement of Metadata Template. Name of Metadata Provider	<p>September 2015</p> <p>Baden Myers Research Engineer Centre for Water Management and Reuse University of South Australia, Mawson Lakes campus, Room H3.19C Mobile: 0409 986 042 (Int: +61 409 986 042) Office: 08 8302 6760 (Int: +61 8 8302 6760) Email: baden.myers@unisa.edu.au</p>
Goyder Institute Project Number and Name	<p>GOYDER INSTITUTE FOR WATER RESEARCH Project No. U.1.2 Water Sensitive Urban Design Impediments and Potential: Contributions to the SA Urban Water Blueprint</p>
Project Team	<p>Ashok Sharma, formerly CSIRO David Pezzaniti, david.pezzaniti@unisa.edu.au Rosemary Leonard, rosemary.leonard@csiro.au Melissa Green, melissa.green@csiro.au Anneliese Spinks, anneliese.spinks@csiro.au Stephen Cook, Stephen.cook@csiro.au Priya Chacko, Priya.chacko@csiro.au Grace Tjandraatmadja, formerly CSIRO Andrea Walton, andrea.walton@csiro.au Aditi Mankad, Aditi.mankad@csiro.au Baden Myers, baden.myers@unisa.edu.au Guna Hewa, guna.hewa@unisa.edu.au David Kemp, david.kemp@unisa.edu.au Sattar Chavoshi, sattar.chavoshi@unisa.edu.au</p>

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Creator/Developer	Baden Myers, David Pezzaniti, David Kemp
Owner/Contact Person and contact details	Baden Myers Contact details under 'Provider' Email: baden.myers@unisa.edu.au
Model Location	<p><i>Where is the model archived?</i></p> <p>The model is archived on the University of South Australia's Australian Irrigation and Hydraulics Technology Facility. Information, Job# A1208002, at the following drive location at the University of South Australia School of Natural and Built Environments: S:\AITC\Jobs\2012</p> <p><i>Provide contact details of individual and unit/group within designated organisation</i></p> <p>See details above for Baden Myers. Email: baden.myers@unisa.edu.au</p> <p>The manager of the AIHTF/AFL is as follows: David Pezzaniti Ph 8302 3652 Fx 8302 3386 Mb 0417 830 018 David.Pezzaniti@unisa.edu.au</p> <p><i>Is there a version of the model in active further development? Where is this active version located?</i> NO</p>
IP or other permission requirements	<p>*** REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT ***</p> <p><i>Are there any IP issues associated with the model and/or the dependencies that future users need to be aware of?</i></p> <p>Yes.</p> <p>Rainfall data is required which is available from the Australian Bureau of Meteorology (BOM) Climate Data Services and/or the South Australian Department of Environment, Water and Natural Resources (DEWNR). Details provided in Technical Report 14/19 available from http://goyderinstitute.org/index.php?id=8</p> <p>The PCSWMM version of the model requests input from providers which is not shared with the model. These were subject to a data management agreement with City of Salisbury. They are not required to run the model, but assisted with model development. It includes:</p> <ul style="list-style-type: none"> - Aerial photography of the catchment area (2013) (provided by City of Salisbury) - Location of pits, pipes and their level data (provided by City of Salisbury and the SA Department of Environment, Water and Natural Resources)

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Licences associated with model and/or dependencies	<p>*** REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT**</p> <p><i>Are there any licenses associated with the model and/or the dependencies that future users need to be aware of?</i></p> <p>The model was developed in PCSWMM, a commercial variant of the US EPA SWMM model. PCSWMM is available from CHI software here: http://www.chiwater.com/Software/PCSWMM/</p> <p>The model may also be run in US EPA SWMM Version 5.0.022 9or later versions where supported, but results may vary slightly due to model engine updates.</p> <p>See here: http://www2.epa.gov/water-research/storm-water-management-model-swmm</p>
Confidentiality agreements associated with model and/or dependencies	<p><i>Are there any confidentiality agreements associated with the model and/or the dependencies that future users need to be aware of?</i></p> <p>Yes, data agreements for aerial photography and digital elevation model were signed with the City of Salisbury. However, this data is not made available with the model - it was used for determining model parameters.</p>
Brief outline of model	<p>The model is a stormwater runoff model to simulate flow rates resulting from the Paddocks catchment in Para Hills, South Australia. It was created to determine the impact of infill development on measured flow rates in this location which is at reasonable slope, and to determine the impact that WSUD implementation may have on flow management in the catchment.</p> <p>The model assembly, calibration and application is detailed in Goyder Institute Technical Report 14/19 available from http://goyderinstitute.org/index.php?id=8</p>
Area/region covered	Paddocks catchment, Para Hills, Adelaide, South Australia (detailed catchment area maps are provided in Technical Report 14/19)
Platform and language and version	<p>SWMM is a fixed platform for this model and the source code is available here: http://www2.epa.gov/water-research/storm-water-management-model-swmm</p>
Dependencies upon: <ul style="list-style-type: none"> i) other models and/or platforms (including version) and location ii) essential data and data sources and location 	<p>The essential data for model verification and further simulation is rainfall data and measured flow data. This may be acquired from the South Australian Department of Environment, Water and Natural Resources (DEWNR) Science Knowledge Management Unit. Specific data used in this study is detailed in the Goyder Institute Technical Report 14/19.</p>

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How was model used	<ul style="list-style-type: none"> ○ <i>Parameterisation/Validation (if applicable; provide a brief summary and include time period of calibration/simulation)</i> The calibrated version of the model was calibrated to observed flows between 1992 and 1996. Observed flows were collected as part of a previous project focussing on the wetland performance for water harvesting in the 1990s Full details were reported in Goyder Institute Technical report 14/19. ○ <i>Scenarios and outputs from various runs (provide a brief summary and indicate where these are stored)</i> There is a calibration scenario (1993), a redeveloped scenario (25% infill) and a further redeveloped scenario (+50% infill). There are also over 100 water sensitive urban design scenarios. Model results files were reported but not kept due to the large data pool they present and the ease of re-running the model files. ○ <i>Assumptions behind model (provide a brief summary and indicate where these are stored)</i> Full details reported in Goyder Technical report 14/19 ○ <i>Limitations of model(provide a brief summary)</i> Full details reported in Goyder Technical report 14/19 ○ <i>Peer review process (if applicable)</i> The model was peer reviewed by David Pezzaniti and David Kemp. Outputs were reported in Goyder Technical report 14/19. This report was subject to review by the project steering committee. ○ <i>Extensibility of model (can it be run for different time periods)</i> Yes, it can be run at whatever time period the user desires (with adjustments to reflect development assumptions at the time you run it). <p>Goyder Institute Technical Reports are available at http://goyderinstitute.org/index.php?id=8</p>
Specificity of data	<p><i>Was data sourced from local field sites or literature</i> Data from both literature and field investigations were used.</p>

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Datasets/data products produced	<p><i>Include details of where datasets/products are located and contact details in the storage location</i></p> <p>Model files and supporting information including rainfall data for model runs and flow data for calibration were stored as noted previously – at the University of South Australia’s Australian Irrigation and Hydraulics Technology Facility. Information is archived under Job# A1208002 at the following drive location at the University of South Australia School of Natural and Built Environments: S:\AITC\Jobs\2012</p> <p>Model run files were discarded as they amounted to a large amount of data that can be easily obtained by re-running the model.</p>
Other Information	
Publications (papers and technical reports)	<p>Goyder Institute for Water Research Technical Reports:</p> <p>Myers B, Pezzaniti D, Kemp D, Chavoshi S, Montazeri M, Sharma A, Chacko P, Hewa GA, Tjandraatmadja G and Cook S (2014) Water Sensitive Urban Design Impediments and Potential: Contributions to the Urban Water Blueprint (Phase 1) Task 3: The Potential Role of WSUD in Urban Service Provision. Goyder Institute for Water Research Technical Report Series No. 14/19, Adelaide, South Australia. ISSN: 1839-2725 (PDF 7.27 MB)</p> <p>Goyder Institute Technical Reports are available at http://goyderinstitute.org/index.php?id=8</p>
Collaborations and acknowledgements	City of Salisbury, Adelaide and Mount Lofty Ranges Natural Resource Management Board, South Australian Department for Environment, Water and Natural Resources
Keywords	Paddocks catchment, Water sensitive urban design, WSUD, flow, peak flow, runoff, runoff volume, infrastructure capacity, infill development, SWMM, PCSWMM, EPA SWMM.