GOYDER INSTITUTE FOR WATER RESEARCH MODEL METADATA TEMPLATE

METADATA REQUIRED	DETAILS
Model Name and version	Parafield Stormwater Harvesting Runoff and Hazard Analysis Simulation Model 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 (Further information in Section 'Licenses')
Date of lodgement of Metadata Template. Name of Metadata Provider	September 2015 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
Goyder Institute Project Number and Name	**GOYDER INSTITUTE FOR WATER RESEARCH** Project No. U.2.1 Managed aquifer recharge and urban stormwater use options (MARSUO)
Project Team	Peter Dillon (pdillon500@gmail.com) Dennis Gonzales (Dennis.Gonzalez@csiro.au) Declan Page (Declan.page@csiro.au) Karen Barry (Karen.barry@csiro.au) David Pezzaniti (David.pezzaniti@unisa.edu.au) Baden Myers (baden.myers@unisa.edu.au)
Creator/Developer	Baden Myers, Research Engineer, University of South Australia baden.myers@unisa.edu.au
Owner/Contact Person and contact details	Baden Myers Email: baden.myers@unisa.edu.au Details in Section 'Provider'

METADATA REQUIRED	DETAILS
Model Location	*Where is the model archived?* *Provide contact details of individual and unit/group within designated organisation* The model is stored on the Job register of the University of South Australia's Australian Irrigation and Hydraulics Technology Facility. Information is archived under Job# A1101012 at the following drive location at the University of South Australia School of Natural and Built Environments: S:\AITC\Jobs\2011 To access this please contact: Baden Myers Email: baden.myers@unisa.edu.au OR David Pezzaniti AIHTF Manager ph 8302 3652 fx 8302 3386 Mb 0417 830 018 David.Pezzaniti@unisa.edu.au A raw version of the calibrated model (without supporting data that is not owned by the project) is also stored with the assistance of UniSA Research and Innovation Services). This includes model metadata including keywords and descriptive information on the project and associated research data to Research Data Australia (RDA). This will include cross links with the Goyder Institute, the University of South Australia and CSIRO. http://data.unisa.edu.au/CollectionItem.aspx?CollectionId=11 *Is there a version of the model in active further development? Where is this active version located?* Yes, a version of the model is being used as part of a harvesting research project. *Provide contact details of individual and unit/group within designated organisation* Syamsul Hidayat, PhD candidate University of South Australia, Centre for Water Management and Reuse syamsul.hidayat@mymail.unisa.edu.au

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IP or other permission requirements	**** REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT ***** *Are there any IP issues associated with the model and/or the dependencies that future users need to be aware of?* Yes. Rainfall data is required which is available from the Australian Bureau of Meteorology (BOM) and/or the South Australian Department of Environment, Water and Natural Resources (DEWNR). Several data sets were used. Details in Goyder Institute Technical Report 13/3. Myers, B., Pezzaniti, D. & Gonzalez, D. (2013) Hydrological modelling of the Parafield and Cobbler Creek catchment for hazard analysis planning, Goyder Institute for Water Research Technical Report Series No. 13/3. Adelaide, South Australia. ISSN: 1839-2725. (PDF 3.38 MB) Please note that the BOM data is available for purchase from BOM Climate Data Services and the DEWNR sourced data is currently available on request from DEWNR Science Knowledge Management Unit. The PCSWMM version of the model requests input from providers which is not shared with the model. These are not required to run the model, but assist with model development. It includes: • Aerial photography of the catchment area • Impervious and pervious area mapping • 'mini-catchment' data describng the catchment area of each stormwater pit in the catchment All the above data was provided by City of Salisbury, Manager Technical Services. In addition: • Location of pits, pipes and their level data (Provided by City of Salsibruy Manager, technical Services and the Department of Environment, Water and Natural Resources, Science Knowledge Management Unit)

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Licences associated with model and/or dependencies	***** REFER TO GOYDER INSTITUTE FOR WATER RESEARCH AGREEMENT**** *Are there any licenses associated with the model and/or the dependencies that future users need to be aware of?* 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/ 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. http://www2.epa.gov/water-research/storm-water-management-model-swmm The open source US EPA SWMM model does not have support for geographical information system tools for model development nor tools for complex post processing of model output.
Confidentiality agreements associated with model and/or dependencies	*Are there any confidentiality agreements associated with the model and/or the dependencies that future users need to be aware of?* Yes, data agreements for aerial photography and pervious/impervious areas were signed with the City of Salisbury. However, this data was not made available with the model - it was used for determining model parameters.
Brief outline of model	The model was developed in PCSWMM and is fully compatible with the US EPA SWMM model. It was developed to simulate stormwater runoff characteristics in the Parafield catchment culminating at the Parafield stormwater harvesting scheme (Parafield Airport, City of Salisbury).

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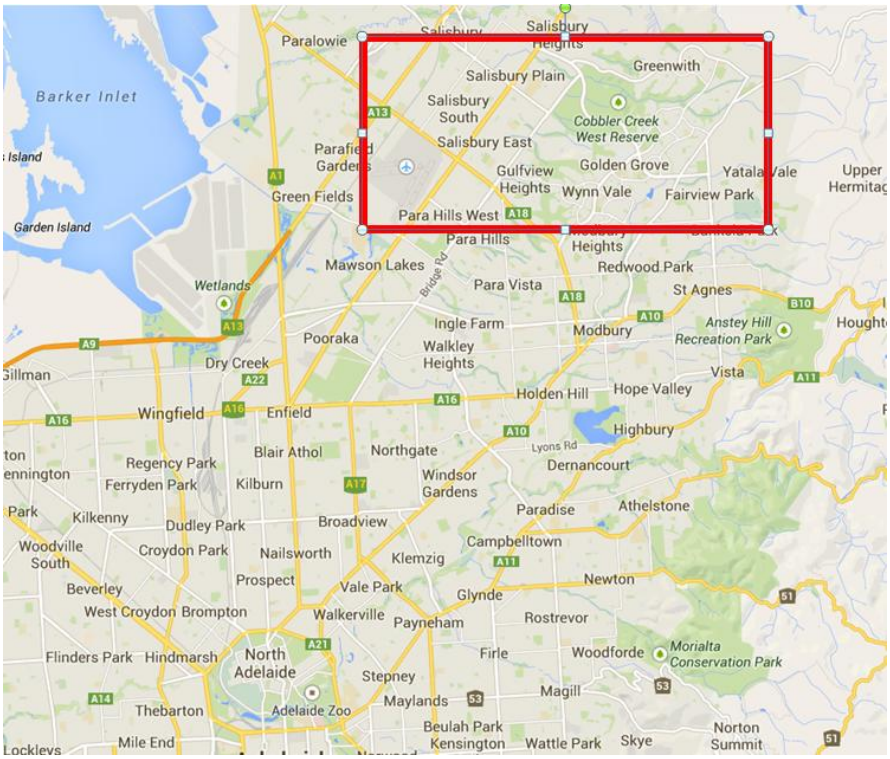
Area/region covered	Catchment of the Parafield stormwater harvesting scheme: 
Platform and language and version	SWMM is a fixed platform for this model and the source code is available here: http://www2.epa.gov/water-research/storm-water-management-model-swmm
Dependencies upon: i) other models and/or platforms (including version) and location ii) essential data and data sources and location	Rainfall data and evaporation data are the only external inputs for the model. These were sourced from both the BOM Climate Data Services and DEWNR Information Management Unit. Full details are provided in the Goyder Institute Technical Report 13/3. Any changes in the catchment would be reflected in data maintained by the City of Salsibury and the best contact would be Dameon Roy, Manager Technical Services

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How was model used	○ *Parameterisation/Validation (if applicable; provide a brief summary and include time period of calibration/simulation)* Summarised in Goyder Institute Technical Report 13/3. ○ *Scenarios and outputs from various runs (provide a brief summary and indicate where these are stored)* Model run data was not kept due to file size. Individual models which produced each result were kept as detailed in Section 'Model Location'. ○ *Assumptions behind model (provide a brief summary and indicate where these are stored)* Summarised in Goyder Institute Technical Report 13/3. ○ *Limitations of model(provide a brief summary)* Summarised in Goyder Institute Technical Report 13/3. ○ *Peer review process (if applicable)* Reviewed by peers at the centre for Uni SA Water Management and Reuse, Report (including explicit details about the model and its calibration) was reviewed by the Goyder Institute for Water Research MARSUO project team, project steering committee and Goyder Institute for Water Research Research Advisory Committee. ○ *Extensibility of model (can it be run for different time periods)* With appropriate rainfall data the model may be run for any desired time period. However changes in the connected catchment area due to landuse change should be considered. Goyder Institute Technical Reports are available at http://goyderinstitute.org/index.php?id=8

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Specificity of data	*Was data sourced from local field sites or literature* Data was sourced from literature, and there was verification of model data using field investigation. This included a study which investigated the time for flow to proceed from the top of the catchment to the mid point and base of the catchment. Summarised in Goyder Institute Technical Report 13/3. Literature data underlying model development was sourced from: - City of Salisbury, Manger Technical Services (location and levels of stormwater pipes, pits, subcatchment boundaries and percentage impervious) - City of tea Tree Gully, (location and levels of stormwater pipes, pits) - The SA Department of Environment, Water and Natural Resources, Knowleddge Management Unit (rainfall data, confirmation of pipe locations and inlet/outlet levels) - The Bureau of Meteorology, Climate data Services (rainfall data, evaporation data)
Datasets/data products produced	*Include details of where datasets/products are located and contact details in the storage location* Summarised in Goyder Institute Technical Report 13/3. All datasets and supporting information is being held as follows: The model and all supporting information is archived on the Job register of the University of South Australia's Australian Irrigation and Hydraulics Technology Facility. Information is archived under Job# A1101012 at the following drive location at the University of South Australia School of Natural and Built Environments: S:\AITC\Jobs\2011 Details given in Section 'Model Location'.
Other Information	

METADATA REQUIRED	DETAILS
Publications (papers and technical reports)	Myers, B., Pezzaniti, D. & Gonzalez, D. (2013) Hydrological modelling of the Parafield and Cobbler Creek catchment for hazard analysis planning, Goyder Institute for Water Research Technical Report Series No. 13/3.Adelaide, South Australia. ISSN: 1839-2725. Goyder Institute Technical Reports are available at http://goyderinstitute.org/index.php?id=8
Collaborations and acknowledgements	CHI Software (Provision of PCSWMM model on an education scholarship) CSIRO Land and Water City of Salisbury City of Tea Tree Gully The SA Department of Environment, Water and Natural Resources (DEWNR)
Keywords	Parafield, stormwater harvesting, hazard analysis, rainfall runoff modelling, pollutant transport