

GUIDING AUSTRALIAN HYDROLOGIC AND HYDRAULIC PRACTICE INTO THE 21ST CENTURY – DEVELOPMENT OF 4TH EDITION OF AUSTRALIAN RAINFALL & RUNOFF

JAMES E. BALL^{1*} and B. C. PHILLIPS²

¹ Associate Professor, Water Research Laboratory, School of Civil and Environmental Engineering, The University of New South Wales, Australia

(Tel: +61-2-99494488, Fax: +61-2-99494188, e-mail: j.ball@unsw.edu.au)

² Director, Cardno Willing (NSW) Pty. Ltd., Level 3, 910 Pacific Highway, Gordon NSW 2072, Australia

Since 1958 when Australian Rainfall and Runoff was first released it has remained one of the most influential and widely used guidelines published by Engineers Australia. The current edition, initially published in 1987 and in a split book form in 1998, has received widespread Australian and international acclaim. Furthermore, the general community has recognised the importance of Australian Rainfall and Runoff to the practice of hydrologic engineering in Australia through the many awards that the current edition received when first published.

Since publication of the current edition, there have been advances in the application of engineering hydrology which warrant the updating of the current document. This has already led to the revision of Book 6 on Estimation of Large and Extreme Floods in 1999. Furthermore, the issues of environment sustainability and water conservation are increasingly requiring the application of updated or new engineering hydrology techniques.

In recognition of these advances and changing community concerns, the National Committee on Water Engineering (NCWE) of Engineers Australia committed itself to the preparation of a new updated and revised edition of Australian Rainfall and Runoff in 1999.

The revision process commenced with the revision of Book VI on the Estimation of Large and Extreme Floods.

More recently as part of the preparation of the revised edition, views of users have been sought through presentations at most Divisions of Engineers Australia. These presentations have discussed the traditional focus of Australian Rainfall and Runoff as well as the need to provide additional information on the hydrology of rainfall and runoff for water quality investigations in both urban and rural areas, the use of catchment simulation techniques, the integration of hydrologic and hydraulic models, and hydrological aspects of integrated water management within urban areas. These views and other feedback formed the basis of the structure proposed for the new edition.

These changes in the needs of users have resulted in changes in the layout of the current revision of Australian Rainfall and Runoff. Nonetheless, the general framework has remained one of eight books. The more significant changes have occurred within these generic books through the material incorporated and discussed therein. For example, Book I in the current edition comprises one chapter which introduces the concepts and philosophy of the document. In the current edition, Book I will comprise at least two chapters. In a similar vein, Book II is expanded from its current three chapters to five chapters with the inclusion of approaches for developing or using continuous rainfall

sequences whereas the current edition only considers the most intense burst within a storm event.

In all cases the revision process is undertaken in two general stages. The first is a review of the current document to examine its adequacies and to identify the scope of any future revision. The scope of revision is then sent to reviewers acting on behalf of the NCWE for comments and ultimately for modifications leading to the finalisation of the scope of the revision for the particular book. The revision is then undertaken in accordance with the scope of the revision by a revision team. On completion of the revision, the revised document is submitted an internal review by both specialists and practioners selected by the NCWE. After this internal review and relevant modifications to the draft, the draft document is released for general discussion by the profession. Comments received from the profession will be incorporated into the final document where before it is published. Through this review process, it is believed that the needs of both the specialist and the occasional user will be satisfied.

It is concluded that the current review of Australian Rainfall & Runoff demonstrates the commitment the NCWE and the many authors to maintaining it as the pre-eminent guideline for hydrology and hydraulics in Australia into the 21st century. It also provides a model for other countries who are preparing national guidelines for hydrological and hydraulic practices.