

WaPUG 88 - Bournemouth

Summary of Workshops on WASSP area data input

Session Chairman: A R Eadon

Presentation: D Dring, STWA

1 Introduction

The general problems associated with area data input for WASSP were outlined by the Chairman. The topics which were subsequently discussed were as follows:

- boundary delineation for Total Area
- WaPUG User Note No 5
- establishing connections
- systems draining roof only
- direct run-off from pervious areas
- WASSP surface run-off sub-model

2 Boundary Delineation for Total Area

The workshops were advised that the WaPUG committee had devoted time during the current year to discuss problems associated with the measurement of Total Area. The committee intends to publish guidance which will give more specific advice on the exclusion of significant areas of open space and limits on large gardens. Most participants appreciated that under average catchment conditions the inclusion of large pervious areas would cause WASSP to under predict. However, there was considerable misunderstanding about how WASSP models extreme catchment conditions where a direct contribution of run-off from pervious surfaces might be expected. Further comments on these circumstances are given in section 6 below.

3 WaPUG User Note No 5, Solution 2

The presentation by D Dring outlined the advantages of dealing with partially drained catchments by using solution 2 of WaPUG User Note No5. He commented that this solution was more readily accepted by users than solution 1, particularly for partially drained catchments. He further commented that solution 2 can be applied to all types of catchment and drainage systems and, since its universal adoption in Severn-Trent's Northern Division, the incidence of abortive work had reduced dramatically. He concluded that mandatory adoption of this method for area data input has achieved:

- reductions in survey costs
- reductions in learning processes for new users
- reductions in abortive work and hence verification costs
- acceptance that partially drained and combined catchments can be included in the same model.

4 Establishing Connections

Many participants expressed concern about the difficulties in establishing property connections. The performance of a WASSP model is directly dependent upon the accuracy of paved and roof area input. No novel solutions were offered but the following methods were discussed:

- sample dye tracing on estates
- examination of deposited plans
- interactive survey and verification in order to isolate areas where an intensive survey may be required.

5 Systems Draining Roof Only

The findings expressed in WaPUG User Note No 9 were supported. Systems which only accept run-off from roofs (i.e. no back yards or patios) are best modelled by excluding pervious areas from the input.

6 Direct Run-Off from Pervious Areas

Discussion on this topic was prompted by the experiences of Hertsmere Borough Council which were presented independently, as part of the main proceedings. The Council had observed direct run-off from heavy clay pervious areas during extreme events, which was not predicted by WASSP. It was subsequently found that by inputting these as impermeable areas a better fit was obtained from verification.

The discussion centred on the treatment of pervious areas for effectively modelling extreme storm and catchment conditions. It was generally agreed that whilst the Hertsmere approach had merit, expert use of the Flood Studies Report methods was probably more suitable. It was certainly clear that the Hertsmere experience had demonstrated a limitation of the surface run-off sub-model in WASSP.

The discussion then moved back to the determination of pervious areas for general inclusion into WASSP and some misunderstanding about the recommendations was expressed. Some participants had assumed that all pervious areas which could possibly make a contribution to run-off should be included in Total Area. The assertion that an arbitrary boundary (i.e. property boundary) should be used instead of watersheds was difficult for many participants to accept. Indeed, the experiences presented by Hertsmere appeared to contradict this assertion.

7 WASSP Surface Run-Off Sub-Model

Collective advice concluded that WASSP is not intended to model the special conditions experienced by Hertsmere Borough Council.

In order to represent the Hertsmere conditions affectively and provide a (seemingly) more acceptable method for inputting contributing pervious areas a more detailed deterministic model would be required.

The surface run-off sub-model in WASSP is intended for general use and, at the outset, the meticulous determination of contributing pervious areas was not justifiable. The current model therefore accounts for a random distribution of contributing pervious areas within the Total Area, which is only used when PR/PIMP exceeds 70%.