

SESSION 5(iii)

WASSP and Digital Mapping -- Future Possibilities

Digital Mapping is now much more than a high-technology method of drawing maps. It is better referred to as "Digital Mapping - Database".

Taking for granted the technology and software which make it possible, digital mapping database offers:

- Map Continuity - With windowing, panning and zooming
- Levels - The ability to switch features on and off, and to use colour
- Database - Linked to graphics and searchable
 - Free-standing and internally linked through a database structure

WRc's interest in digital mapping is as a "Window on Databases" -

A potentially powerful facility for linking and presenting large volumes of Water Industry information as an operational and management tool.

We have had on two year lease a DEC PDP 11 - based intergraph system on which we have mounted a demonstration using real data, which shows the feasibility of meeting the bulk of Water Industry user needs. A considerable programming effort has gone into tailoring the basic system for this purpose.

The next stage is full scale implementation in an area of significant size. We have just started a 3 year collaborative project with SWWA set in the Torbay area. Hardware and basic software have been purchased for this. The main WRc objectives are:

- To produce a comprehensive generalised User Requirements Specification
- To document the problems and cost of implementation
- To explore and quantify the benefits of intergrating data management, and any changes in working practice required.
- To seek cost justification for widespread implementation

Hydraulic Modelling, both WASSP and Water Network Analysis, use data derived from system maps, and produce results which are geographically related. Hence the strong feeling: "Hydraulic Modelling and Digital Mapping ought to be linked".

HOW is not so straightforward and needs exploration.

One thing is clear cut: the WASSP pipe files will need to carry manhole references, preferably from the NWC/DoE STC Report 25, so that physical locations on the ground can be tied to models.

However, additional less obvious changes are probably required. The only sensible way to proceed is for a User Requirements Specification to be prepared for WASSP users, and its implications explored.

At the top level, this might break down into five user task groups:

1. Generate Model : System Plans -> Model
2. Develop Model : Check Representation and Stability
3. Verify Model : Flow Surveys against Simulations
4. Present Results : System Problems from Various Storms
5. Explore Upgrade Options : Rehabilitation/Reinforcement

The most straightforward of these to implement on a mapping system is 4 : Present Results, which might break down as:

- 4.1 Show Surcharged Sewers
- 4.2 Show Flooded Manholes
- 4.3 Show Effected Water Courses
- 4.4 Compare Actual Flooding with Predicted
- 4.5 Show Progressive Overload Sequence

WRc wishes to encourage WAPUC to develop a full user requirement for the WASSP/Digital Mapping interface, and is willing to advise on its preparation. Subsequent implementation of the various stages would depend on cost-justification and priorities as yet undetermined.

In the meantime, as resources allow, we intend to mount a small demonstration for Stages 4.1 - 4.5 above.

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