FINAL PROGRAM

AWRA

AMERICAN WATER RESOURCES ASSOCIATION

29th Annual Conference & Symposium

Effluent Use Management

August 29-September 2, 1993

Sheraton Tucson El Conquistador Golf & Tennis Resort

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August 29-September 2, 1993
Sheraton Tucson El Conquistador Golf & Tennis Resort
Tucson, Arizona

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TUESDAY, AUGUST 31 – TECHNICAL PROGRAM

8:50 a.m. **Development of a Groundwater Management Model for the Walter E. Murphree Well Field – Kathleen E. Coates,** Law Environmental, Inc., Kennesaw, GA (Kirk Hatfield) (Conf. Abstract)

Break / 10:00 a.m.-10:30 a.m.

CONCURRENT SESSIONS 12C, 13C, 14C, 15C / 10:30 a.m.-12:00 Noon

Session 12C / APPLICATIONS OF GIS AND OTHER APPROACHES–I
10:30 a.m.-12:10 p.m. / Oracle Ridge Room

Moderator – JAYNE SALISBURY
University of Oklahoma, Norman, OK

10:30 a.m. **Optimal Nonpoint Source Pollution Management Using a Distributed Model-Geographic Information System-Relational Database Management System Linkage – Jaewan Yoon,** North Dakota State Univ., Fargo, ND (G. Padmanabhan) (Conf. Abstract)

10:50 a.m. **Estimating a Residential Water Demand Function from Multispectral Video Imagery – Umesh S. Limayé,** Utah State Univ., Logan, UT (A. Bruce Bishop) (Conf. Abstract)

11:10 a.m. **Master Plans of Drainage and Environmental Systems (MPDES) – Theodore V. Hromadka II,** Boyle Engineering Corp., Newport Beach, CA (Conf. Abstract)

11:30 a.m. **A GIS-Hydrologic Model Interface for Flood Prediction and Assessment – Karen E. Frederickson,** USACERL, Champaign, IL (Douglas M. Johnston) (Conf. Abstract)

11:50 a.m. **Non-Point Source Pesticide Pollution of the Pequa Creek Watershed, Lancaster Co., Pennsylvania – An Approach Linking Probabilistic Transport Modeling and GIS – Robert T. Paulsen,** The Paulsen Group, Bowie, MD (Vicki Whitledge, Allan Moose) (Conf. Abstract)

Lunch Break / 12:00 Noon-1:30 p.m.

Session 13C / SEDIMENT TRANSPORT
10:30 a.m.-12:00 Noon / Catclaw/Agave/Juniper Rooms

Moderator – ARLIN NICKS
USDA-Agricultural Research Service, Durant, OK

10:30 a.m. **Sediment Transport in a Diverted Stream System, St. Louis Creek, Colorado – S. E. Ryan,** Univ. of Coloardo, Boulder, CO (C. A. Troendle) (Conf. Abstract)

PROCEEDINGS OF THE SYMPOSIUM

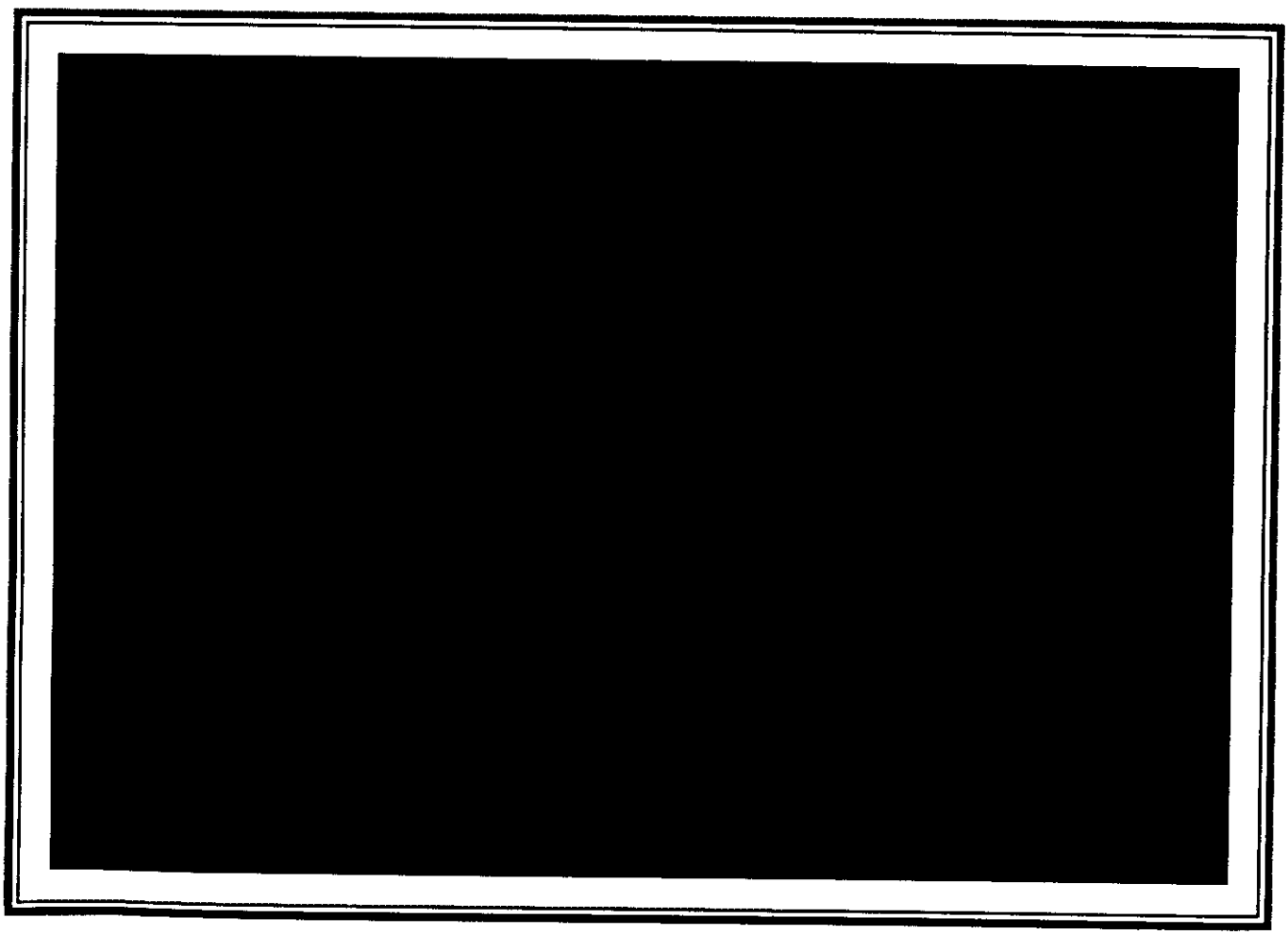
ON

EFFLUENT USE MANAGEMENT

AND

ABSTRACTS

AWRA 29th ANNUAL CONFERENCE



AWRA AMERICAN WATER RESOURCES ASSOCIATION

PROCEEDINGS OF THE SYMPOSIUM

EFFLUENT USE MANAGEMENT

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AND

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AWRA 29th ANNUAL CONFERENCE

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Cover Photo: Town of Gilbert, Arizona, Wastewater Treatment Facility and Percolation Ponds, June 1992.

AMERICAN WATER RESOURCES ASSOCIATION TECHNICAL PUBLICATION SERIES
TPS-93-3

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Master Plans of Drainage and Environmental Systems (MPDES)

Theodore V. Hromadka II, Ph.D., PE, PH, Boyle Engineering Corporation, 1501 Quail, Newport Beach, CA 92658-9020.

Recently , several southern California Master plans of Drainage have been updated using Gis-type features integrated with hydrologic modeling software. Besides offering upgradability with new data layers (i.e., new land use maps, soil group maps, rainfall maps, among other layers), the master plan of drainage data banks interfaces with pollutant loading projection software that provides the key dozen pollutant loadings at locations throughout the city. Consequently, not only are the master plans used for flood control planning purposes, but now the MPDES permitting pollutant loadings can be projected. Such integrated software packages typically run on personal computer hardware, and even on many laptops that are currently quite affordable, including capabilities for graphical display of the entire city nodal network, streets, and other detailed information.

These new master plans merge several parallel path technologies; namely, flood control, water quality, water conservation sedimentation and erosion, environmental channels, and economic modeling. As additional master plans are prepared or updated, regional master plans may be assembled, such as at a countywide level.

An especially attractive feature of these new master plans are the "read-only" applications whereby graphical slides are likened to text files for personal computer environment. Memory disks can be published and distributed, as a replacement of the usual master plan report and related technical appendices.

A GIS-Hydrologic Model Interface for Flood Prediction and Assessment

Karen E. Frederickson, USACERL, P.O. BOX 9005, Champaign, IL, 61826, and Douglas M. Johnston, Department of Landscape Architecture/University of Illinois Geographic Information Systems Lab, 320 Davenport Hall, Urbana, IL, 61826.

Flooding is one of the many natural and man-made disasters that must be addressed by land managers and emergency planners. The Readiness Management System (RMS) under development by the Omaha District of the Corps of Engineers is intended to improve the response time to flood emergencies through accelerated retrieval and assessment of available data and graphic representation of output. In addition to guiding reservoir control in periods of potential flooding and aiding in emergency preparedness, RMS is intended to guide remedial actions. Important to the implementation of this system is the development of an interface linking the various modeling and GIS components and providing procedural support to the users. By clearly directing the proposed sequence of system execution, a graphical user interface guides the user through the steps of emergency flood simulation, and by linking the system to the spatial analysis and graphic presentation capabilities of a GIS, aids rapid impact assessment based on flood prediction results. A graphical user interface prototype is being developed at USACERL in conjunction with the University of Illinois to illustrate and prove how models, methods, and GIS may be integrated to create a user-centered spatial decision support system for flood prediction and assessment. The RMS components chosen for integration include rainfall prediction software, HEC1 software, HEC2 software, GRASS surface interpolation and fitting programs, and other GRASS spatial analysis tools.