

SMADA
Stormwater Management and Design Aid

User's Manual

Dr. Ron Eaglin
Linda Eaglin
Dr. Marty Wanielista

Version 6
August 1996

Foreword

Stormwater Management and Design Aid (SMADA) has been under development at the University of Central Florida since 1984. The code has changed hands many times and been ported to various platforms. It was first conceived by Dr. M. P. Wanielista to assist with the many repetitive calculations involved in Hydrology problems. The objective of the program remains the same today; to provide an easy to use interface to Hydrology calculations which can be used and understood by undergraduate students in Hydrology. Even though the program has grown, it has remained true to its original objective.

In 1988 Dr. Ron Eaglin took over the code and maintenance of the program. The code suffered a port from GWBasic to Quickbasic to PDS Basic to C++ and then to Visual Basic under his guiding hand. His current vision is a suite of connected programs, each which performs a specific objective to assist in Hydrology. The major program is SMADA, which is also the name of the suite of programs. The number of programs in this suite will continue to grow as needs demand. We hope that you find the program and this manual useful.

An accompanying web site is available for SMADA at:

<http://bader.engr.ucf.edu/software.htm>

This web site will continue to offer updates for SMADA and have information to assist the SMADA user. Topics available include; software updates, bonus software - programs that can be added to SMADA, frequently asked SMADA questions that aren't covered in the manual, SMADA development, update log, and more...

Introduction

Stormwater Management and Design Aid (SMADA) is a collection of computer programs designed to assist in stormwater and hydrology related problems. The executable programs in this package are available from a number of sources for a minimal amount of money. There is no licensing restriction on the code - its use is free.

The current version 6 is designed to operate under any Windows 3.1 compatible operating system. For upward compatibility it is 16 bit code, it will eventually migrate to 32 bit as the computer industry pushes in that direction. Since this is not a commercial package there is no phone support line, the author does however perform some limited amount of e-mail support. Questions should be sent to e-mail address <eaglin@magicnet.net>

About This Manual

This manual covers all the computer programs in the SMADA suite: SMADA, DISTRIB, REGRESS, TCCALC, and EZMAT. Each program has a section containing an overview of the operation of the software, background theory, references, and a number of solved example problems. This manual is designed to go beyond the on-line help features of the program, but will contain excerpts of the on-line help for some of the programs as appropriate.

This manual is not intended as an in-depth discussion of the theoretical basis of the SMADA computer programs. If more information is desired the text Hydrology: Water Quantity and Quality Control, Wanielista, Kersten, and Eaglin is recommended. This text is published by John Wiley and Sons publishers. The SMADA software was specifically tailored to accompany this text.

Table of Contents

I. Introduction

II. SMADA - Hydrograph Generation and Pond Design

III. SMADA Theory - Discussion of watershed modeling, hydrograph generation, and pond design and inventory routing

IV. DISTRIB - Statistical Distribution Analysis

V. REGRESS - Regression Analysis

VI. TCCALC - Time of Concentration Calculator

VII. EZMAT - Matrix Calculator

References

Appendix

Comparison of SWMM and SMADA - Research Report