Hydrology & Hydraulics Software CD

Collection more than 40 water-related programs on a single CD

Contaminant Transport Programs

Name:	**EAAMOD 3.5 & EAAMOD-Okee**
Purpose:	Evaluation of Impact of Best Management Practices (BMPs)
Version:	2.00.09a
Type:	Full Version
Description:	EAAMOD 3.5 includes both a field and farm scale high water phosphorus transport model specifically designed to simulate the farm conditions in the Everglades Agricultural Area. However, the newly released EAAMOD-Okee version is a field scale version that has been adapted to Flatwood soils throughout the southeast and now includes TSS and nitrogen, as well as phosphorus, and has many additional crops represented in its database. These models are ideal for evaluating the impact of Best Management Practices (BMPs) on TSS, N, and P losses. EAAMOD simulates a single field as a function of the soil type, crop type, weather, and the management practices that occur during the season (planting, harvest, phosphorus application, and water management). The graphical user interface permits the user to easily change model inputs, run EAAMOD, and then view the results. The user selects the field dimensions, soil, crop type and rotation, management practices, weather files, and water control by answering a few questions on each category. EAAMOD creates the appropriate input files using the user inputs and default values for many of the file parameters. The management calendar greatly simplifies modifications to management events during the simulation period. The user can easily see the events, change the dates, or change the type of events. Default values are supplied for each parameter to aid the less experienced users. The user can modify the details for any event if more appropriate values are known.

Name:	**QUAL2E**
Purpose:	Enhanced Stream Water Quality Model
Version:	12/1999
Type:	Full Version
Description:	Simulates the major reactions of nutrient cycles, algal production, benthic and carbonaceous demand, atmospheric reaeration and their effects on the dissolved oxygen balance. It is intended as a water quality planning tool for developing total maximum daily loads (TMDLs) and can also be used in conjunction with field sampling for identifying the magnitude and quality characteristics of nonpoint sources.

Name:	**SWAT99.2**
Purpose:	Soil and Water Assessment Tool
Version:	09/2001
Type:	Full Version

Description:	SWAT is the acronym for Soil and Water Assessment Tool, a river basin, or watershed, scale model developed by Dr. Jeff Arnold for the USDA Agricultural Research Service (ARS). SWAT was developed to predict the impact of land management practices on water, sediment and agricultural chemical yields in large complex watersheds with varying soils, land use and management conditions over long periods of time.

Environmental Data Management Programs

Name:	Ford HEC-DSS Automation Server
Purpose:	Water Resources Data Management
Version:	10/24/2001
Type:	Full Version
Description:	The server is a powerful Microsoft Windows COM component that makes HEC-DSS time series and paired data readily accessible to Microsoft Windows programmers. It is particularly useful with scripting languages such as JScript and VBScript. You can use it within Microsoft Excel and other Office product macros, ESRI ArcGIS, Visual Basic, Delphi, and other COM-aware environments.

Name:	OCAD 7
Purpose:	Cartography Software
Version:	12/1999
Type:	Demonstration Version
Description:	OCAD is a drawing program created for the needs of the cartographer. This focus in cartography makes it extremely easy and convenient to use (no plug-ins, no extra programs). OCAD has all the capabilities to create any kind of maps. It provides a wide range of area and line types to create any symbol used in cartography. OCAD is a vector program. However the scanned template (or a raster map) can be printed together with the vector map.

Name:	VISTA
Purpose:	Visualization Tool and Analyzer
Version:	05/04/2001
Type:	Full Version
Description:	The VISualization Tool and Analyzer program (VISTA), written in Java by Nicky Sandhu, is available in ZIP files. VISTA accesses DSS files to view and manipulate time-series data. It consists of a server, written in Java, C, and Fortran, and available for Sparc/Solaris and Intel/NT; and a client, written in Java, which will run on many computer architectures. Instructions are provided on how to start the server and client. The server is used to access the DSS files and deliver the data in them to the client; the client is used to select DSS files and pathnames, perform math functions, and plot data. Only the client need be run if you wish to view others' data, such as IEP historical database. You will need to run the server as well to offer your own data to others.

Scripting is available in VISTA. Scripting uses the same components as what the VISTA GUI is built out of. Example scripts are distributed in the distribution. Further documentation of VISTA modules is here.

To run the VISTA program, you will need the Java Runtime Environment installed on your computer. This is available from Sun for many different platforms. A copy for PC Windows is also available.

Name:	**WinLoG**
Purpose:	Borehole and Well Log Plotting Program
Version:	3.10
Type:	Demonstration Version
Description:	WinLoG can be used to quickly create, edit and print a wide variety of borehole and well logs. The graphical windows interface displays the log as it is changed and shows exactly how the log will look when it is printed. Boring logs and templates can be edited by pointing and clicking, making the program fast and easy to learn. The graphical interface uses the latest Windows features such as floating toolbars, popup menus, smooth scrolling, context sensitive help, and multiple windows. There are no limits to the number and types of borehole logs that can be created with the WinLoG program. Logs can contain general borehole data, lithologic descriptions and symbols, sample data, well completion details, geophysical logs and numerous graphs and text comments. The program comes with several easily customized templates and new templates can be easily created. Templates can be customized to display different header and footer titles, number and types of columns, etc.

Flow Hydraulics and Sediment Transport Programs

Name:	**CECAD-FSF 2000**
Purpose:	Civil and Environmental Computer Aided Design - Free Surface Flow
Version:	01/2001
Type:	Education Version
Description:	CECAD-FSF is a free surface flow modeling software. It can simulate flow and wave in one- and two-dimensional domains. CECAD-FSF software was initiated based on a fully three dimensional hydrodynamic model. That model was developed as a research program in 1994 and was established based on the direct one-stage scheme for solving the fully three dimensional governing equations of free surface flows. The mentioned program was able to predict current flow and horizontal and vertical eddies in rivers, estuaries, harbors and coastal waters. It was compared against several laboratory measurement and field data and was found to be very accurate. The used numerical scheme was a second order accurate scheme in both space and time.

The initial program was written for PC's and was executable under DOS environments. CECAD-FF v1.0 was the developed version of that program which could be executed under Windows 3+ environment. The first version of CECAD-FF was developed in 1996 for modeling two dimensional depth-averaged free-surface flows.

This version of CECAD-FSF is more powerful and can simulate one- and two-dimensional flow and wave.

General Utilities

Name:	**Acrobat Reader**
Purpose:	PDF File Reader (needed to view documents on this CD)
Version:	5.0
Type:	Full Version
Description:	Program for viewing, printing, navigating and searching PDF files. Most documentation provided with downloadable software (including programs listed herein) are saved in the PDF format.

Name:	**Interpolator**
Purpose:	Interpolating and Curve Fitting Program
Version:	1.0
Type:	Full Version
Description:	Interpolator is an interpolating / curve fitting program that aids in estimating the value of a relationship at a specified point based on a set of discrete data points The program will interpolate (exact match at all entered data points, no equation defined) or fit a curve based on least squares fit (equation parameters defined, results may not exactly match original data points), as directed by the user.

Name:	**OmniCon**
Purpose:	Unit Conversion Program
Version:	5.1
Type:	Full Version (time limited)
Description:	OmniCon 98 is a unit conversion program designed to meet the high expectations of professional engineers and scientists. However, OmniCon's easy-to-use interface means that everyone can easily perform conversions without any instruction. OmniCon 98 ships with over 500 units in 43 physical quantities - it is therefore possible to perform thousands of unique conversions! If you find that a conversion you need is not provided in OmniCon 98, you are free to add your own custom units and custom physical quantities. OmniCon 98 is intelligent and only displays the maximum allowable number of significant figures available for a particular conversion. This function separates OmniCon 98 from all other unit conversion applications. OmniCon 98 uses American and Canadian Government standards as the source of its conversion factors for the utmost accuracy.

Name:	**Programmer's File Editor**
Purpose:	Large-Capacity Text File Editor
Version:	03/1999
Type:	Full version
Description:	Programmer's File Editor (PFE) is a large-capacity text file editor, oriented towards those who use Windows as their program development environment, and so incorporates many features that make it a convenient work management system. Although it's primarily oriented to program development, it makes a very powerful general editor for any purpose at all.

Ground Water Modelling Programs

Name:	**MicroFEM**
Purpose:	Groundwater Modelling
Version:	3.50.71 LT
Type:	Educational Version
Description:	The Windows version of MicroFEM is a finite-element program for multiple-aquifer steady-state and transient ground-water flow modelling. Confined, semi-confined, phreatic, stratified and leaky multi-aquifer systems can be simulated with a maximum of 2500 nodes per layer (full version: 50.000 nodes per layer) and two aquifers (full version: 20 aquifers). Other features include: • mesh generators for regional flow models and for civil engineering models • interactive mesh design and adjustment • spatially varying anisotropic aquifers • precipitation, evaporation, drain, river and wadi top systems • interactive and batch-mode processing • water balances for each aquifer and subarea • flow vectors and flowlines, 3-D particle tracking • DXF maps and flowlines files import • EXCEL, SURFER and ARC VIEW compatible data files • HPGL and DXF files export.

Hydraulic Design Programs

Name:	**CivilTools**
Purpose:	Civil Engineering Design Tools
Version:	1.1s
Type:	Full Version (time limited)
Description:	CivilTools is designed to quickly and easily automate some of the tasks that a civil engineering designer faces on a daily basis. Each program module, or page, accomplishes a different task. The modules include: • Pipe Calculates the flow in a full or partially full round pipe flowing by gravity • Box Pipe calculates the flow in a full or partially full box section pipe, flowing by gravity • Culvert calculates the flow in a round culvert, checking inlet control and outlet control for a variety of inlet types • Box Culvert is similar to Culvert, except it calculates flow in concrete box section culverts • Channel calculates the flow in a trapezoidal channel • Rational Method uses the Rational Method to help you design a storm sewer system

Name:	**FlowPro**
Purpose:	Hydraulic Design for Steady-State Open Channel Flow
Version:	2.0
Type:	Full Version (time limited)
Description:	Hydraulic design software for steady-state open channel flow. Flow Pro is an easy to use tool for solving common hydraulic problems. It can be used to quickly and accurately design pipes, culverts, sluice gates, and channels having a wide variety of shapes; including round, square, trapezoidal, u-shaped, or tubular cross-sections. Flow Pro will calculate and plot the gradually varied water surface profile including depth, energy, area, velocity, top width, and momentum.

Name:	**H&H Utility Suite**
Purpose:	Hydrology and Hydraulics Utilities
Version:	07/1999
Type:	Full Version
Description:	This collection of eight hydrology and hydraulics utilities are different from, and a complement to, the Hydraulics Utility Programs listed below. They consist of the following independent programs, zipped together into one self-extracting file. • Weirflo - broadcrested, cipolletti, triangular and shallow swale weir flows • SCSCN - storm runoff hydrograph model based upon the SCS Curve Number method and NEH4 • Routec - reservoir routing using the Puls method • Pearson - fits a series of flow events to a Log Pearson Type III distribution

- Meltsum - computes snow melt from a degree-day model
- Gully - A program to compute gully control structure design parameters
- Deschan - Storm channel design program for trapezoidal channels
- Cross2 - rating curve estimates from channel cross section surveys

Name:	**Hydraulics Utility Programs**
Purpose:	Hydraulics Utilities
Version:	07/1999
Type:	Full Version
Description:	• Weirs - This program calculates flow (cfs) or weir length (ft) from the weir flow equation. • Orifices - This program solves for Q (cfs), A (sq.ft) or HW (ft) based on tailwater and orifice centerline elevations. • Trapezoidal Channels - Solves Mannings equation for flow in trapezoidal, box or triangular channels. • Natural Channels - Solves Mannings equation for flow in natural channels given x-y coordinates of the cross section. • Culverts - Enter the culvert characteristics and get a Headwater vs. Outflow rating curve indicating Inlet or Outlet Control. • Reservoirs - Will perform reservoir routing for ten time increments, given the inflow hydrograph and reservoir storage characteristics.

Name:	**HydroChan**
Purpose:	Open Channel Flow Hydraulics
Version:	1.0
Type:	Full Version
Description:	HydroChan is a simple one dimensional steady flow open channel flow hydraulics model for prismatic channels i.e. constant cross section. The two main functions of the model are the generation of rating curves and gradually varied flow calculations.

Name:	**HydroCulv**
Purpose:	Culvert Hydraulics
Version:	1.2
Type:	Full Version
Description:	The hydraulics of flow at culverts can be very complex, with many possible flow profiles. HydroCulv combines an easy to use graphical user interface with a robust one-dimensional steady flow culvert hydraulics model.

Name:	**HydroFreq**
Purpose:	Flow Frequency Analysis
Version:	1.0
Type:	Full Version

| Description: | HydroFreq is a flow frequency analysis program that assigns probabilities of exceedance (or inversely return periods) to flow values for use in hydrotechnical design. The program fits entered data to up to 4 theoretical probability distributions commonly used in hydrologic frequency analysis using various fitting techniques. |

Name:	**HydroRout**
Purpose:	Hydrologic Storage Routing Analysis
Version:	1.0
Type:	Full Version
Description:	HydroRout is a hydrologic storage routing analysis program that calculates the routing response of a lake/reservoir to a runoff event. The program combines an inflow hydrograph, a stage storage curve for the lake, an outlet rating curve for the lake, initial lake water surface elevation, and calculation parameters to generate an outflow hydrograph.

Name:	**NDSoft**
Purpose:	Normal Depth Software based on the Manning's Equation
Version:	1.0.0
Type:	Full Version
Description:	Based on the Manning Equation, NDSoft determines the normal depth in drainage channel. It works with channels of five different shapes (i.e. vertical curb, triangular, rectangular, trapezoidal, and circular). Further, the program determines the size of a circular sewer based on the normal depth under full-flow condition. The output is on screen, and also can be printed out as hard copy or saved as ASCII file.

Name:	**Open Channel Calculator**
Purpose:	Calculation of Water Surface Profiles for Trapezoidal Cross-Sections
Version:	07/1999
Type:	Full Version
Description:	This program allows for the calculation of surface profiles of trapezoidal channels using both the direct step method and the standard step method. Normal flow conditions can also be calculated. This is a very handy tool for the calculation of these profiles shapes.

Name:	**TR - 19 RESOP**
Purpose:	Reservoir Operation Study Computer Program
Version:	Nov. 30, 1987
Type:	Full Version
Description:	The Reservoir Operation Study Computer Program (RESOP) can assist in the planning, design, and evaluation of reservoirs which must meet water supply and demand requirements. Reservoir operation and management has become an important issue in many areas due to increasing competition for water supplies. RESOP will compute a monthly water balance for a reservoir system based upon inflow, outflow and reservoir storage data. The RESOP program is data intensive and the mathematics are relatively

	simple. The advantages of using the program are that the water balance for many years may be computed quickly and any number of alternatives may be computed and compared efficiently.

Name:	**TR - 66**
Purpose:	Dam - Breach Routing Procedure
Version:	Sep. 30, 1985
Type:	Full Version
Description:	This technical release presents a method for estimating key character-istics of the floodwave generated by the sudden breaching of a dam. These characteristics are the peak flood flow Qo at a predefined location in the path of the floodwave, the associated maximum depth of flow do, and the time lapse to between the breaching of the dam and the occurrence of the above two extremes.

Hydrology and Drainage Programs

Name:	**BASINS**
Purpose:	Watershed Management Tool
Version:	3.0
Type:	Full version
Description:	Version 3.0 of the Better Assessment Science Integrating Point and Nonpoint Sources (BASINS) software system has been released. BASINS has three major objectives: • To facilitate examination of environmental information • To support analysis of environmental systems • To provide a framework for examining management alternatives Originally released in 1996, with a second release in 1998, BASINS comprises a suite of interrelated components. BASINS' databases and assessment tools are directly integrated within an ArcView environment. These components work together to support the user performing various aspects of environmental analysis. The components include: • nationally derived databases with Data Extraction and Project Builder tools • assessment tools (TARGET, ASSESS, and Data Mining) that address large- and small-scale characterization needs • utilities to facilitate importing local data and for organizing and evaluating data • watershed delineation tools • utilities for classifying elevation (DEM), land use, soils, and water quality data • watershed characterization reports that facilitate compilation and output of information on selected watersheds • an in- stream water quality model

- two watershed loading and transport models
- a simplified GIS based nonpoint annual loading model.

Name:	**DDSoft**
Purpose:	Drainage Design Software based on the Rational Method
Version:	1.0.0
Type:	Full Version
Description:	Based on the Rational Formula and Manning Equation, DDSoft determines the size and bed slope of drainage channel or storm sewer. The program works with channels of four different shapes (i.e. vertical curb, triangular, rectangular, and trapezoidal), and one sewer shape (i.e. circular). The output is on screen, and also can be printed out as hard copy or saved as ASCII file.

Name:	**MIDUSS 98**
Purpose:	Hydrology and Drainage Package
Version:	12/13/2001
Type:	Full Version (time limited)
Description:	The MIDUSS 98 package was developed to help drainage engineers to design the hydraulic elements in a collection network of storm sewers or channels. Hydrology options: • 5 storm types • 3 infiltration models • 4 overland routing methods. Design options: • pipes, part-full or surcharged • channels of any shape • detention ponds, rooftop or parking lot storage, 'superpipes' and complex outflow controls • exfiltration trenches • diversion structures

Name:	**Rational for Windows**
Purpose:	Calculation of Stormwater Runoff by the Rational Method
Version:	1.0
Type:	Full Version (time limited)
Description:	Rational for Windows is a 32-bit Microsoft Windows program that calculates the storm runoff using the Rational Method. It is designed specially to be used in Maricopa County, Arizona. It follows the procedures described in the Drainage Design Manual, Volume I prepared by Maricopa County Flood Control District. Rational for Windows has many more features over the old DOS Rational program. The ability to save and restore the input data is the most appealing feature to the old DOS

version users. The time saving feature will greatly increase your working efficiency.

Rational for Windows will run on Windows 9x and Windows NT. It is extremely easy to use. It is self-explanatory and user-friendly.

Name:	**SITES**
Purpose:	Rainfall Runoff Routing
Version:	96.1 (Dec. 1996)
Type:	Full Version
Description:	The SITES program assists the engineer in the hydraulic and hydrologic analyses of dams. The program develops inflow hydrographs and uses the storage-discharge relationships at dam sites to flood route hydrographs through existing or potential reservoirs. You may directly enter storage-discharge relationships or direct the program to compute these relations from given physical parameters. Inflow hydrographs may be actual historical data or the program may develop the hydrograph from design rainfall distributions. The program is used in the design and proportioning of dams with floodwater features. You may also use the program to flood route historical or synthetic storms through existing dams and reservoirs and to predict or evaluate earth spillway performance.

Name:	**SMADA**
Purpose:	Storm Water Management and Design Aid
Version:	6.43
Type:	Full Version
Description:	This stormwater management and design aid includes the following modules: • watersheds • rainfall • hydrographs • ponds • and many useful utilities (Matrix Calculator, Time-of-Concentration Calculator, Pollutant Analysis, Statistical Analysis, Storm Sewer Design, etc.) This software is a complete hydrology package included as a number of separate executable files. These programs work together to allow hydrograph generation, pond routing, storm sewer design, statistical distribution and regression analysis, pollutant loading modeling, matrix calculation, and others. These programs are useful in both classroom and professional applications. Extensive on-line documentation is available for all programs.

Name:	**SWMM**
Purpose:	Storm Water Management Model
Version:	4.4 gu
Type:	Full Version

The US Environmental Protection Agency (EPA) Storm Water Management Model (SWMM) is a comprehensive mathematical model for simulation of urban runoff quantity and quality in storm and combined sewer systems. All aspects of the urban hydrologic and quality cycles are simulated, including surface and subsurface runoff, transport through the drainage network, storage and treatment.

Description:

SWMM is a large, complex model capable of modeling the movement of precipitation and pollutants from the ground surface through pipe and channel networks, storage treatment units, and finally to receiving waters. Both single event and continuous simulation can be performed on catchments having storm sewers and natural drainage, for prediction of flows, stages and pollutant concentrations.

Name:	**TR - 20**
Purpose:	Project Formulation Hydrology
Version:	Feb. 1992
Type:	Full Version
Description:	The TR-20 computer program assists the engineer in hydrologic evaluation of flood events for use in analysis of water resource projects. The program is a physically based event model which computes direct runoff resulting from any synthetic or natural rainstorm. There is no provision for recovery of initial abstraction or infiltration during periods of no rainfall within an event. The program develops flood hydrographs from runoff and routes the flow through stream channels and reservoirs. Routed hydrographs are combined with those from tributaries. Procedures for hydrograph separation by branching or diversion of flow and for adding base flow are provided. Peak discharges, their times of occurrence, water surface elevations and duration elf flows can be computed at any desired cross section or structure. Complete discharge hydrographs, as well as discharge hydrograph elevations, can be obtained if requested.

Name:	**TR - 55**
Purpose:	Urban Hydrology for Small Watersheds
Version:	2
Type:	Full Version
Description:	Technical Release 55 (TR-55) presents simplified procedures to calculate storm runoff volume, peak rate of discharge, hydrographs, and storage volumes required for floodwater reservoirs. These procedures are applicable in small watersheds, especially urbanized, in the United States. This Rainfall Runoff Model was developed by the US Soil Conservation Service, now known as the Natural Resources Conservation Service (NRCS). TR-55 presents simplified procedures to calculate storm runoff volume, peak rate of discharge, hydrographs, and storage volumes required for floodwater reservoirs. These procedures are applicable in small watersheds, especially urbanizing watersheds, in the United States. The primary functions of the program are for peak runoff computations using the Graphical Peak Discharge Method, the Tabular Peak Discharge Method and Temporary

Storage. Support functions include the computation of the runoff curve number (CN), the Time of concentration (Tc) and travel time through a subarea (Tt). Limits: NRCS type distributions, 24-hour duration rainfall, 10 subwatersheds, minimum 0.1 hour and maximum 10-hour time of concentration.

Name:	**TR - 64**
Purpose:	Floodway Determination
Version:	June 1978
Type:	Full Version
Description:	The SCS Floodway Determination (FLDWY) computer program is used to calculate a floodway at given cross sections along a stream. For this program a floodway is defined as the minimum width at a cross section that is required to carry the selected (generally 100-year) flood with a specified increase in the water surface elevation. The procedure in the program is based on the equal conveyance reduction concept. No encroachment or narrowing of the channel is allowed. For multiple channels, any overbank segment between channel segments is considered part of the channel. This program does not compute floodways at road sections.

Name:	**WAMView**
Purpose:	Watershed Assessment Model in ArcView
Version:	1.1
Type:	Demonstration Version
Description:	WAMView is an ESRI ArcView version of the earlier WAM model (ArcInfo version) to make the WAM model more accessible to users. Both versions of WAM are GIS based watershed assessment models developed to assess the water quality impacts of land use and land management changes with very high spatial detail. The WAMView model contains all of the functionaliy of the original WAM model with the exception of a wildlife diversity index submodel. Both models have user interfaces that allows users to select a drainage area (or primary basin) from a predefined set of basins within a watershed. The interface permits the user to edit land use and/or land use practices three different ways: 1. Apply BMPs - A list of Best Management Practices is provided for specific land uses developed based on the water quality characteristics of the region. 2. Land Use Swap - Allows the user to switch one land with another as a means to assess long term land use trends or the effectiveness of government incentives offered to landowners to change their land use. 3. Land Use Editing - This provides tools to change individual land uses. A user simply paints on his or her own land use. With the land use edits completed, the interface will simulate each unique landuse/soil grid cell combination in the watershed using either GLEAMS, EAAMOD, wetland, and urban water quality submodels tailored specifically for the hydrologic characteristics of the region. A hydrodynamic stream routing model then simulates the flows and constituents from each grid cell through hydrologic reaches (streams) to simulate load attenuation and accumulated impacts downstream. The interface then provides a variety of tables, graphs and maps to view and assess the results of the simulated modified land use scenarios. The model was selected by Florida's Department Environmental Protection to assist them in TMDL development throughout Florida.

Name:	**Watershed Modeling System (WMS)**
Purpose:	Automated Watershed Delineation and Hydrologic Modeling Software
Version:	10/26/2001
Type:	Full Version (Limited Features)
Description:	The Watershed Modeling System is a comprehensive hydrologic modeling environment. WMS provides tools for all phases of watershed modeling including automated watershed and sub-basin delineation, geometric parameter computation, hydrologic parameter computation (CN, time of concentration, rainfall depth, etc.) and result visualization. Used at hundreds of government agencies and private firms around the world, WMS is a powerful tool for analysis and visualization of watersheds.

Water Distribution System Design Programs

Name:	**EPANET 2**
Purpose:	Hydraulic and Water Quality Modelling of Distribution Networks
Version:	2.00.09a
Type:	Full Version
Description:	EPANET models the hydraulic and water quality behavior of water distribution piping systems. EPANET is a Windows 95/98/NT program that performs extended period simulation of hydraulic and water-quality behavior within pressurized pipe networks. A network can consist of pipes, nodes (pipe junctions), pumps, valves and storage tanks or reservoirs. EPANET tracks the flow of water in each pipe, the pressure at each node, the height of water in each tank, and the concentration of a chemical species throughout the network during a simulation period comprised of multiple time steps. In addition to chemical species, water age and source tracing can also be simulated. The Windows version of EPANET provides an integrated environment for editing network input data, running hydraulic and water quality simulations, and viewing the results in a variety of formats. These include color-coded network maps, data tables, time series graphs, and contour plots.

Name:	**EPANET Programmer's Toolkit**
Purpose:	Customization of EPANET's Computational Engine
Version:	12/06/2001
Type:	Full Version

Description:	The EPANET Programmer's Toolkit is a dynamic link library (DLL) of functions that allow developers to customize EPANET's computational engine for their own specific needs. The functions can be incorporated into 32-bit Windows applications written in C/C++, Delphi Pascal, Visual Basic, or any other language that can call functions within a Windows DLL. There are over 50 functions that can be used to open a network description file, read and modify various network design and operating parameters, run multiple extended period simulations accessing results as they are generated or saving them to file, and write selected results to file in a user-specified format. The Tookit should prove useful for developing specialized applications, such as optimization or automated calibration models, that require running many network analyses as selected input parameters are iteratively modified. It also can simplify adding analysis capabilities to integrated network-modeling environments based on CAD, GIS, and database packages. A Windows Help file is available that explains how to use the various Toolkit functions and offers up some simple programming examples. The Toolkit also includes several different header files, function definition files, and .lib files that simplify the task of interfacing it with C/C++, Delphi, and Visual Basic code.

Name:	**OptiDesigner**
Purpose:	Water Distribution System Design Software
Version:	1
Type:	Full Version (Time Limited)
Description:	optiDesigner is a Windows software for the optimal design of water distribution networks using genetic algorithms (GA). The program uses EPANET (a hydraulic simulator distributed by the US EPA).optiDesigner will design the pipes network and find the their minimal cost under a set of constraints like: • Minimal and maximal pressures at networks nodes • Minimal and maximal velocities at networks pipes • Maximal sources flow. With optiDesigner you can find the most cost effective design, rehabilitation and expansion of your water distribution system.