Highway Computer Software Collection and Analysis.

David J. Elton

A report to the

Alabama Highway Research Center

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Alabama Highway Research Center

Civil Engineering Department

Auburn University

Auburn, AL

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Introduction

This study compiled a list of microcomputer transportation software. County and city engineers were sent letters notifying them of the availability of the list. Interested engineers can then order copies of the software from the vendors contacted in establishing the list. The categorized list appears in the Appendix.

Background

There is a need to increase the use of microcomputers in solving highway industry problems. Microcomputer programs have been developed to help solve many transportation engineering problems, many of which were currently difficult to solve manually. The speed of microcomputers makes solution of complex problems manageable. However, the specific problems facing highway departments have not always been addressed by software publishers. Consequently, many state highway departments have developed their own software to solve problems when no commercial software has been available.

Objectives

There were three objectives of this project, viz.:

1. gather public domain microcomputer programs from the 49 U.S. state highway departments,

2. categorize, document and evaluate the programs, and

3. prepare a mailing list of Alabama highway engineers (state, district, county and city) that could use these programs, and mail program abstracts to them. Programs and documentation will be sent to those who request it.

Three tasks were used to accomplish the above objectives.

TASK 1. The first task was to contact each of the 49 U.S. highway departments other than Alabama. After contacting a several states by telephone, many noted that AASHTO has already compiled a list of computer programs originating at state highway departments (AASHTO, 1987). Since all 50 highway departments participated in the compilation of the AASHTO publication, individual contacting was considered redundant and discontinued. The AASHTO publication was secured.

It was originally proposed to obtain copies of every program for review and evaluation. Since the AASHTO publication contained several hundred listings, however, this task was dismissed as impossible, within the project constraints. Rather, the thrust of the work became to categorize and publicize the programs.

Two other microcomputer transportation program vendors were located: the Center for Microcomputers in Transportation, at the University of Florida, and the University of Kansas Transportation Center (PC-TRANS).

The Center for Microcomputers in Transportation markets transportation software in several domains, primarily commercial. A listing of their software was obtained. The University of Kansas Transportation Center (PC-TRANS) also markets transportation software in several domains, primarily commercial. A listing of their software was obtained.

TASK 2. The second task was to categorize the programs. The AASHTO document listed programs that ran on any machine, including mainframes and minicomputers. A great number of different mainframes and minicomputers are in use at various highway departments. This limited the applicability of the programs from any one department. Moreover, since there are many different operating systems on the mainframes (unspecified in the AASHTO document), it was unclear whether any given program would run on the Alabama Highway Department mainframe. Thus, the study was limited almost exclusively to personal computers that operate under DOS, virtually the only operating system for PCs. A few of the programs run on Commodore, Hewlett-Packard and assembly language processors.

The programs were divided into categories based on their function(s). Abbreviated documentation of the programs was made, describing program requirements, machine compatibility, and program application and use. The program documentation from all three sources was then combined in one large file. The programs were divided into the following categories:

CONSTRUCTION/PROJECT MANAGEMENT SOFTWARE
GEOMETRIC LAYOUT/SURVEYING
HYDROLOGY AND HYDRAULICS
MISCELLANEOUS ENGINEERING PROGRAMS
MISCELLANEOUS TOPICS
MISCELLANEOUS TRAFFIC PROGRAMS
PAVEMENT DESIGN AND MANAGEMENT
SAFETY SOFTWARE
SOILS AND EROSION
STRUCTURES
TRAFFIC ENGINEERING SOFTWARE
URBAN TRANSPORTATION PLANNING SOFTWARE

The program entries were made in different formats, to distinguish the program source. Thus, the source of the program can be inferred from the format of the program listing. Three formats were used.

If the format is:

STATE - FHWA

STATE - FHWA
SYSTEM TITLE - LOTUS spreadsheet automator
SYSTEM NO. - 320 Qtr - 1 Yr - 85 MFG - Model - 256K MICRO
LANGUAGE - LOTUS123 No. of Programs - 000
NARRATIVE -

This is a 2 LOTUS123 template which is designed to automate existing LOTUS spreadsheets. The purpose is to simplify use of more advanced LOTUS features and to minimize time required to add Macro capabilities to a frequently used spreadsheet. Contact Mark Chatfield 202-426-0451 HNG-12

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then information on the program can be obtained from the person/agency listed in the "narrative" part of the listing. These program descriptions are taken from the 1987 AASHTO Computer Systems Index.

If the program description is followed by the program name and price, like this...

BID1 is a Lotus spreadsheet based on an FHWA Technical Advisory (December 29, 1980) on preparing engineer's estimates and reviewing bids.
BID1 $5

The program is available from

McTrans
University of Florida
512 Weil Hall
Gainesville, FL 32611.

The program cost is given in the listing. McTrans only accepts orders on their form (included in the Appendix of the report).

If the program listing includes the price, not immediately preceded by the program name, like this.... (program is in *italics* in the printed copy, but without italics on diskette version of the list)

CALIFORNIA RIGID PAVEMENT MANAGEMENT SYSTEM. A Microcomputer implementation of the part of the California Pavement Management System dealing with rigid pavements, RPMS is an inventory and strategy system for evaluation of pavement distress and for plotting strategies and priorities for maintenance and rehabilitation. $15

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it is available from the

PC-TRANS Transportation Center
2011 Learned Hall
University of Kansas
Lawrence, KS 66045
(913)864-5655

Adopting this format allowed programs from all sources to be grouped by topic and combined in a large file. This single listing is easier to search than three separate listings.

TASK 3. The last task was to prepare a mailing list of highway engineers (state, district, county and city) that would constitute a market for these programs. Letters would be sent to these engineers indicating that a list of microcomputer highway programs was available, and could be obtained for the asking.

The primary sources of information for the list were the Association of County Commissions of Alabama (for county engineers), and the Alabama League of Municipalities (for city engineers). The National Association of County Engineers deferred to the Association of County Commissions as having more recent information. The Auburn University Engineering Extension Service was contacted, but also deferred to the Association of County Commissions as having more extensive information.

These mailing lists were then typed in mailmerge files in WordPerfect. After the mailing list was compiled, a letter was mailed indicating that the list of programs was available from the Alabama Highway Research Center. A copy of the letter is in the Appendix. Interested parties could request a copy of the list and ordering information, both of which would be sent on diskette. Programs could then be ordered by interested users from the sources listed on the diskette. Distribution of the program catalogue at the Alabama Highway conference is planned.

Reference.

AASHTO (1987) "Computer Systems Index, 1987", AASHTO, Washington, D.C.

APPENDIX A

Letter Sent to State District Engineers, County Engineers, and City Clerks

<address here>

Dear <name>:

The Alabama Highway Research Center, at Auburn University, has compiled a list of available IBM personal **computer software** for **transportation engineering.** The list is arranged by topic, and includes information on how to order the programs from the various vendors.

The list is available on a 5.25" IBM diskette **free** from the Highway Research Center, and may be obtained by writing:

Alabama Highway Research Center
238 Harbert Engineering Center
Auburn University, AL 36849

Please pass this notice to your city engineer, or other interested parties.

Thank you.

Sincerely,

David J. Elton, Ph.D.
Civil Engineering

APPENDIX B

Listing of Programs

Transportation Engineering Software List

compiled by the Alabama Highway Research Center

NOTES: The following list of primarily IBM-compatible computer programs has been compiled by the Alabama Highway Research Center. A few of the programs run on Commodore, Hewlett-Packard and assembly language processors. The programs are listed by the following topics:

CONSTRUCTION/PROJECT MANAGEMENT SOFTWARE
GEOMETRIC LAYOUT/SURVEYING
HYDROLOGY AND HYDRAULICS
MISCELLANEOUS ENGINEERING PROGRAMS
MISCELLANEOUS TOPICS
MISCELLANEOUS TRAFFIC PROGRAMS
PAVEMENT DESIGN AND MANAGEMENT
SAFETY SOFTWARE
SOILS AND EROSION
STRUCTURES
TRAFFIC ENGINEERING SOFTWARE
URBAN TRANSPORTATION PLANNING SOFTWARE

Program availability can be inferred from the format of the program listing. If the format is:

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---

it is available from the

PC-TRANS Transportation Center
2011 Learned Hall
University of Kansas
Lawrence, KS 66045
(913)864-5655

PROGRAM LIST

CONSTRUCTION/PROJECT MANAGEMENT SOFTWARE

MDMS enables tracking of costs for county road maintenance and construction projects. $25

DIVISION OFFICE PROJECT TRACKING SYSTEM. This method, using the dBase II (tm) language, allows field offices to maintain, analyze and report project information. $15

CALIFORNIA FLEXIBLE PAVEMENT MANAGEMENT PACKAGE. A microcomputer implementation of the California Flexible Pavement Management System, FPMS is an inventory and strategy system for evaluation of pavement distress and for plotting strategies and priorities for rehabilitation. $15

CALIFORNIA PAVEMENT MANAGEMENT SUPPLEMENTAL SYSTEM. Development of the California Pavement Management System is supplemental documentation for both the California Flexible and Rigid PMS programs (HE1 and HE5). $30

CALIFORNIA RIGID PAVEMENT MANAGEMENT SYSTEM. A Microcomputer implementation of the part of the California Pavement Management System dealing with rigid pavements, RPMS is an inventory and strategy system for evaluation of pavement distress and for plotting strategies and priorities for maintenance and rehabilitation. $15

STATE - OREGON
SYSTEM TITLE - PROLOG
SYSTEM NO. - IBM/PC
LANGUAGE - DBASE III
NARRATIVE -

Project tracking, Contact Tim Thex (503)378-3423.

SYSTEM TITLE - Project Tracking System (Using DBASE II)
SYSTEM NO. - 319 Qtr - 1 Yr - 85 MFG - IBM Model - PC/256K
LANGUAGE - DBASE II No. of Programs - 112
NARRATIVE -

Developed by FHWA HQ. primarily as aid to division office project mgmt. needs. Manipulates databases of project information, including design info (environmental and design exceptions) and construction info (contract and inspection data). Extensive reporting and modification capabilities. DBASE files could transfer to any Micro using DBASE II. HNG-22/HH0-31

STATE - NORTH DAKOTA Added 1985
SYSTEM TITLE - Construction Automated Reporting

SYSTEM NO. - 210 Qtr - 1 Yr - 85 MFG - IBM Model - XT 640K
LANGUAGE - DBASE 3+ No. of Programs = 105
NARRATIVE -

Maintenance of field records for projects. Includes automatic pay estimates, progress reports, haul sheets, paving reports, force accounts, change orders, and quantity books.

BAKPRO is used to calculate several parameters of backhoe and subgrade production between given stations of a roadway.
BAKPRO $5

BID1 is a Lotus spreadsheet based on an FHWA Technical Advisory (December 29, 1980) on preparing engineer's estimates and reviewing bids.
BID1 $5

CANDLINK is used as a guide in decision making for road rehabilitation by making preliminary determinations of the feasibility of upgrading a road link.
CANDLINK $5

Highway Design and Maintenance Standard Model (HDM-III and HDM-PC) is designed to make comparative cost estimates and economic evaluations of different construction and maintenance options, including different time staging strategies, either for a given road section or an entire network.

MDMS (Microcomputer Data Management System) aids in many aspects of managing a road or street maintenance organization.
MDMS $25

Project Analysis Package (PAP) is a collection of two Lotus 1-2-3 templates which are used to estimate and compare the benefits of highway improvement projects.
PAP $25

Pay Estimates is a project cost manager program which simplifies the preparation of pay estimates for a project.
PAYEST $25

PMP24 (Project Manager Plus 24) is a Lotus template which plots a Gantt chart for a project schedule defined by the user for up to a 24 month period.
PMP $5

Project Tracking System (PTS) was developed by FHWA for its field offices, Project Tracking System is a microcomputer program to help project managers maintain, analyze, and report project information.
PTRACK $30

QBC (Quick Benefit Cost) was developed to expedite the economic analysis of proposed highway projects. It is based on differences in operating and travel time costs that result from increased average running speeds due to facility upgradings and improvements.
QBC $25

Quality Level Analysis (QLA) is a program which statistically estimates the degree of conformity of construction materials to specification requirements.
QLA.A $25

Unilink Benefit Cost (UBC) is a basic program for comparing the costs and benefits of proposed highway projects.
UBC $25

I255I

CC-SURVEYOR. In addition to its standard coordinate geometry (COGO) routines, Civil Comp's COGO program features a number of useful utility functions. $10

COGOWARE. Another shareware civil engineering COGO program from Carl King of Sarasota, FL. $10

COllier.GO. This is a shareware civil engineering and surveying coordinate geometry package developed by Marlin D. Collier of Jackson, MS. $10

MapInfo is an integral mapping and database system allowing the display of various kinds of information in a geographic context. $750

MapInfo is network ready but only allows one user at a time. $595

This demo disk offers a glimpse of what MapInfo can do. $5

MAPINFO Data Files, call for prices.

MAPINFO Boundary Import/Export Module. $195

MAPINFO DXF TRANSLATOR. $95

MAPINFO MAP IMPORT/EXPORT MODULE. $495

MAPCODE COMPILER. $395

MAPINFO SUPPORT. We recommend the toll-free support option to users, especially those developing their own applications, because it gives you free program upgrades and unlimited access to MapInfo Corp. technical support staff through a toll-free hotline. $195

STATE - OREGON
SYSTEM TITLE - Traverse
SYSTEM NO. - 58 Qtr - 1 Yr - 85 MFG - IBM Model - PC
LANGUAGE - BASIC No. of Programs - 100
NARRATIVE -

Calculates coordinates and adjusts traverse

STATE - OREGON
SYSTEM TITLE - Spiral Deflections
SYSTEM NO. - 59 Qtr - Yr - MFG - IBM Model - PC
LANGUAGE - BASIC No. of Programs - 100
NARRATIVE -

Calculates deflections and chord distances for spiral curves

STATE - OREGON
SYSTEM TITLE - Vertical curves
SYSTEM NO. - 60 QTR - Yr - MFG - IBM Model - PC
LANGUAGE - BASIC No. of Programs - 100
NARRATIVE -

Calculates elevations on a vertical curve or on a tangent grade

STATE - MICHIGAN
SYSTEM TITLE - Traverse Computation
SYSTEM NO. - IBM/PC 256K
LANGUAGE - FORTRAN
NARRATIVE -

The traverse computation computes coordinates and course of regular distance and bearing traverses with any unknown factors of distance or bearing. Manual available. Contact T.W. Butts (517)373-1959.

STATE - MICHIGAN
SYSTEM TITLE - Solar Observation Reduction
SYSTEM NO. - IBM/PC 256K
LANGUAGE - FORTRAN
NARRATIVE -

The solar observation reduction computes a mean bearing from a set of solar observations. Contact T.W. Butts (517)373-1959.

STATE - MICHIGAN
SYSTEM TITLE - 3-Wire Level
SYSTEM NO. - IBM/PC 256K
LANGUAGE - FORTRAN
NARRATIVE -

The 3 wire level computes a mean for each set of 3 wire rod bearings, compute and compares 2 rod intercepts. Compute and accumulate foresight and backsight distance. Print adjusted elevations. Show error or closure. Contact T.W. Butts (519)373-1959.

STATE - MICHIGAN
SYSTEM TITLE - Polaris Observation Deduction
SYSTEM NO. - IBM/PC 256K
LANGUAGE - FORTRAN
NARRATIVE -

The Polaris Observation Deduction computes a mean azimuth from a series of field observations on the star. Prints mean azimuth from north and standard effort of the observation set. Contact T.W. Butts (519)373-1959.

STATE - TENNESSEE
SYSTEM TITLE - BLUETOP - Originally from Oklahoma - Converted
SYSTEM NO. - IBM/PC 256K & XT
LANGUAGE - FORTRAN with Basic input file builder
NARRATIVE -

The Bluetop - Originally from Oklahoma - Converted is a menu driven, input and output files created. Calculates elevations across roadway x-section, 12 lanes wide. Manual available. Demo disk available. Contact Tenn. Dept. of Transportation (615)741-3576.

STATE - TENNESSEE
SYSTEM TITLE - COGO32
SYSTEM NO. - IBM/PC 256K & XT
LANGUAGE - FORTRAN
NARRATIVE -

THE COGO32 is a free format input; normal geometric calculations with points, lines, curves and chains (no spiral curves); areas, stationing and intersecting of elements are possible. Manual available. Demo disk available. Contact Tennessee Dept. of Transportation (615)741-3576.

STATE - TENNESSEE
SYSTEM TITLE - PROFILE 3
SYSTEM NO. - IBM/PC 256K & XT
LANGUAGE - FORTRAN
NARRATIVE -

The Profile 3 is a vertical curve program. Elevations at a selected increment, sag and crest points, and odd stations. Maximum number of PIs is 15. Manual available. Demo disk available. Contact Tennessee Dept. of Transportation (615)741-3576.

STATE - VIRGINIA
SYSTEM TITLE - Bridge Centerline Grade
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Input 3 grade control points with one vertical curve, program computes finished grade elevation for all stations specified and/or the stations in increments within 2 specified stations. Equalities & offset may be used. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Straight Roadway Skewed Bridge Geometry
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Computes elevations and dimensions of a bridge on a straight roadway with vertical curve. Allows for bridge on gradient. Two equalities may be used between each pair of control points. Contact C.S. Chen (804)786-2358.

STATE - WISCONSIN
SYSTEM TITLE - T-2 Horizontal Angle Reduction Program
SYSTEM NO. - IBM/PC (256K) or IBM 370
LANGUAGE - BASIC
NARRATIVE -

The T-2 Horizontal Angle Reduction Program computes average horizontal angles and standard error. Error trapping is significant. Output is compatible with mainframe horizontal network adjustment program. Manual available. Contact Gene Hafermann (608)266-0112.

CC-SURVeyor is a simple program for civil engineers and land surveyors, that interfaces with Generic CADD by transferring batch files both ways.
CCSURV $25

COGOWARE is a microcomputer program for the land surveyor and plat designer.
COGOWARE $5

COllier.GO (COGO) is a series of programs which help solve many common surveying problems.
COGO $25

CURVER is a vertical curve analysis program.
CURVER $5

HORIZ computes the parameters of a horizontal curve.
HORIZ $5

HYDROLOGY and HYDRAULICS

WSPRO computes water surface profiles for open channels (subcritical, critical, and supercritical flow), single or multiple bridge openings (free surface and pressure flow), through culverts (single or multiple), and encroachments. $40

HEC-1. The U.S. Army Corps of Engineers HEC-1 model is designed to simulate the surface runoff response of a river basin to precipitation by representing the basin as an interconnected system of hydrologic and hydraulic components, such as surface runoff areas, stream channels, or reservoirs. $45

TR-55 provides simplified procedures to calculate storm runoff volume, peak rates of discharge, and storm volumes required for stormwater detention reservoirs. $27.50

HEC-2. The U.S. Army Corps of Engineers' HEC-2 program is used to calculate water surface profiles and flood plain boundaries for steady, gradually varied flow in natural and man-made channels. $75

FEDERAL HIGHWAY CULVERT ANALYSIS. This program designed to assist in the design of culverts, automates the methods described in HYDRAULIC DESIGN OF HIGHWAY CULVERTS, FHWA. $30

Scour at Bridges (HY-9) is a program based on Federal Highway Administration (FHWA) Interim Procedures for Evaluating Scour at Bridges.
SCOUR $5

MNDOT.HYD analyzes box culverts, culverts, floodrouting, gutter flow, archpipe culverts (metal or concrete), trapezoidal channels and irregular channels.
MNDOT $5

PAS (Preliminary Analysis System) assists in data development for water surface profile computations.
PAS $25

TR20-88 contains the USDA, Soil Conservation Service (SCS) microcomputer version of the TR-20, Project Formulation-Hydrology program.
TR20 $5

SWITCH is a program which interacts with data from the HEC-2 and WSPRO water surface profile modeling programs.
SWITCH $5

FESWMS (Finite Element Surface Water Modeling System) is a modular set of computer programs that simulates surface-water flows where the flow is essentially two-dimensional in the horizontal plane.
FESWMS $50

HC2ENTRY allows an input file for HEC-2 to be quickly created without constant reference to the HEC-2 manual.
HC3ENT $25

HEC-1 model is designed to simulate the surface runoff response of a river basin to precipitation by representing the basin as an interconnected system of hydrologic and hydraulic components.
HEC1 $35

HEC-2 is capable of computing water surface profiles for steady, gradually varied flow in natural or man-made channels.
HEC2 $40

Hydraulic Toolbox (HY-TB) Version 1.0 consists of three hydraulic related microcomputer programs which are based on FHWA Hydraulic Engineering Circulars (HEC).
HYDTOOL $5

WSPRO (Water Surface Profile Computational Model) is a program which computes water surface profiles for open channels (subcritical, critical nd supercritical flow), single or multiple bridge openings (free surface and pressure flow), through culverts (single or multiple) and encroachments.
WSPRO $30

STATE - VERMONT Added 1985
SYSTEM TITLE - Draincalc Hydrology Systems
SYSTEM NO. - 3 Qtr - 1 Yr - 87 MFG - IBM Model - PC/AT
LANGUAGE - BASIC No. of Programs - 000
NARRATIVE -

Used on small complex drainage systems to analyze impact of development. Excellent for before and after studies with emphasis on detention basin sizing. Proprietary software by Hydro Systems.

STATE - VERMONT Added 1985
SYSTEM TITLE - Flood Frequency Analysis - FFAN
SYSTEM NO. - 4 Qtr - 1 Yr - 87 MFG - IBM Model - PC/AT
LANGUAGE - BASIC No. of Programs - 000
NARRATIVE -

Log Pearson Type III analysis of USGS stream gaging stations. Proprietary software by Hydrasoft

STATE - VERMONT Added 1985
SYSTEM TITLE - Urban Storm Drainage Design (ILUDRAIN)
SYSTEM NO. - 5 Qtr - 1 yr - 87 MFG - IBM Model - PC/AT

LANGUAGE - BASIC No. of Programs - 000
NARRATIVE -

Complex analysis and design program for drainage systems in urban areas. Uses storm rainfall and physical parameters to predict storm runoff and required pipe sizes. Proprietary software by CE software and hydroware.

STATE - VERMONT Added 1985
SYSTEM TITLE - HEC2
SYSTEM NO. - 6 Qtr - 1 Yr - 87 MFG - IBM Model - Pc/AT
LANGUAGE - FORTRAN No. of Programs - 000
NARRATIVE -

Calculates flow profile using the corp of engineers method and is most useful in studying the effects of a bridge upstream and downstream of the sight. Proprietary software by Dobson & Associates.

Erosion protection program based on universal soil loss equation. Proprietary software by City College of New York.

STATE - VERMONT Added 1985
SYSTEM TITLE - PSRM
SYSTEM NO. - 10 Qtr - 1 Yr - 87 MFG - IBM Model - PC/AT
LANGUAGE - BASIC No. of Programs - 000
NARRATIVE -

Runoff model hydrological program to determine peak flow of ungaged drainage areas. Proprietary software by Penn State.

STATE - MISSOURI
SYSTEM TITLE - BZ 156 Bridge Backwater
SYSTEM NO. - IBM Compatible 64K Capacity
LANGUAGE - BASIC
NARRATIVE -

The BZ 156 Bridge Backwater Analyzes valley section and computes bridge backwater in accordance with FHWA hydraulic design series no. 1. FHWA manual available. Contact W.L. Trimm, Division Engineer, Materials and Research (314)751-3706.

STATE - MISSOURI
SYSTEM TITLE - Const 1
SYSTEM NO. - IBM Compatible 49 capacity
LANGUAGE - BASIC
NARRATIVE -

The Const 1 computes culvert quantities by pours, culvert dimensions, roadway grades (both single lane and dual lane) all in accordance with our design standards. Contact W.L. Trimm, Division Engineer, Materials and Research (314)751-3706.

STATE - NORTH DAKOTA
SYSTEM TITLE - Hydraulics of Circular Culverts
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett Packard)
NARRATIVE -

The Hydraulics of Circular Culverts computes headwater & outlet velocities for various discharges & depths of flow (Ref. Hydraulic circulars & manuals.) Contact Arlan Weight or Ron Horner (701)224-2558 & 224-4438.

STATE - NORTH DAKOTA
SYSTEM TITLE - Hydraulics of Arch Culverts
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Hydraulics of Arch Culverts computes headwater and outlet velocities for various discharges & depths of flow. (Ref. Hydraulics arch and manuals). Contact Arlan Weight or Ron Horner (701)224-2258 & 224-4438.

STATE - NORTH DAKOTA
SYSTEM TITLE - Hydraulics of Circular Culverts
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Hydraulics of Circular Culverts computes headwater stages and outlet velocities when multiple pipe installations vary in size or slope or both. (Ref. Hydraulic manuals)

STATE - NORTH DAKOTA
SYSTEM TITLE - Flood routing of Circular Culverts
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Flood routing of Circular Culverts computes actual discharge from the given inflow and time of concentration by analyzing available upstream storage. (Ref. FHWA-TS-79-225 & other manuals).

STATE - NORTH DAKOTA

SYSTEM TITLE - CIRCULAR CULVERT LENGTHS & COSTS
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Circular Culvert Lengths & Cost computes culvert lengths and costs for various types of cross sections (Normal, broken back, bench lt & rt., bench rt., bench lt.) (Ref. Highway pipe standards).

STATE - NORTH DAKOTA
SYSTEM TITLE - Arch Culvert Length & Cost
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Arch Culvert Length & Cost computes culvert lengths and costs for various types of cross sections (normal, broken back, bench lt. & rt., bench rt., bench rt., bench lt.) (Ref. Highway pipe standards).

STATE - NORTH DAKOTA
SYSTEM TITLE - Design of Stable Channels with Vegetative Linings of Riprap
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Design of Stable Channels with Vegetative Linings or riprap computes allowable discharges for different types of vegetation and different sizes of rock riprap for various ditch widths and slopes (Ref. HEC. 15).

STATE - NORTH DAKOTA
SYSTEM TITLE - High Water Determination
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The High Water Determination computes the stage elevation for a given discharge in channels having irregular cross sections. (Ref. Bridge Division).

STATE - NORTH DAKOTA
SYSTEM TITLE - Hydraulics of Curb Inlets
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Hydraulics of Curb Inlets computes discharge intercepted and pavement spread for various types of inlets installed on continuous grades. Computes number of inlets required in a sag for a given discharge and allowable pavement spread. (Ref. HEC 12 & Neenah Found).

STATE - NORTH DAKOTA
SYSTEM TITLE - Hydraulic Analysis of Slotted Drains
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Hydraulic Analysis of Slotted Drains computes length of slot and pipe size required to intercept various percentages of given discharges. (Ref. FHWA-RD-79-106).

STATE - NORTH DAKOTA
SYSTEM TITLE - Hydraulic Analysis of Storm Sewers
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Hydraulic Analysis of Storm Sewers computes pipe size, length, cost and backwater curve given the pipe station and offset, drainage area, runoff coefficients, time of concentration and inlet and outlet elevations. (Various hydraulic manuals).

STATE - NORTH DAKOTA
SYSTEM TITLE - Lift Station Analysis
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Lift Station Analysis computes total dynamic head for pipe sizes 1/4" to 24" given a variety of valves and elbows and pump rates (Ref. various hydraulic manuals).

STATE - OHIO
SYSTEM TITLE - Bulletin 45 Program
SYSTEM NO. - IBM/PC
LANGUAGE - BASIC
NARRATIVE -

The Bulletin 45 Program calculates channel discharge from FHWA Bulletin 45 information. Demo disk available. Contact Frank Anderson O.D.O.T. Hydraulics (614)462-7195.

STATE - OREGON
SYSTEM TITLE - BOXCVOL - Box Culvert Volumes
SYSTEM NO. -
LANGUAGE - IBM FORTRAN Ver. 2

NARRATIVE -

Calculates Box Culvert Volumes. Contact Tom Peterson (503)387-8645.

STATE - VIRGINIA
SYSTEM TITLE - Reservoir Routing (Part of Hyd-1 Program Package)
SYSTEM NO. - Dual DS/DD Drives, MS/DOS or PC/DOS
LANGUAGE - BASICA
NARRATIVE -

IBM PC Implementation of Robert Baumgardner's (FHWA) Apple program. Performs routing calculation from given inflow hydrograph, stage-discharge and stage-storage data. Very user friendly. Saves input to disk. Hard copy optional. Interactive with LOTUS 1-2-3 to plot hard copy inflow-outflow hydrographs. Demo disk and manual available. Contact David M. Legrande (Hydraulics Section) (804)786-2359.

STATE - VIRGINIA
SYSTEM TITLE - Flood Routing (Part of Hyd-1 Program package)
SYSTEM NO. - Dual DS/DD Drives, MS/DOS or PC/DOS
LANGUAGE - BASICA
NARRATIVE -

Calculates inflow hydrograph using S.C.S. procedures. Optionally calculates flood routing using Pagan R-curve procedures. Input can be saved to disk. Hard copy optional. Demo disk and manual available. Contact David M. Legrande (Hydraulics Section) (804)786-2359.

STATE - VIRGINIA
SYSTEM TITLE - Open channel Flow
SYSTEM NO. - Commodore PET-CBM, C-64, VIC-20 (Cassette or Disk)
LANGUAGE - Microsoft Basic (Commodore CBM Basic V 2.5 or Higher)
NARRATIVE -

Calculates normal depth for known flow or flow for known normal depth in rectangular, trapezoidal, triangular, and circular sections. Menu driven. Use of program is self-explanatory through prompts. Contact David M. Legrande (Hydraulics Section) (804)786-2359.

STATE - VIRGINIA
SYSTEM TITLE - Reservoir Routing
SYSTEM NO. - Commodore PET-CBM, C-64, VIC-20 (Cassette or Disk)
LANGUAGE - Microsoft BASIC (Commodore CBM Basic V 2.5 or higher)
NARRATIVE -

Adapted for use on Commodore machines from Robert Baumgardner's (FHWA) reservoir routing for Apple computers. Performs flood routing using storage indicator method from given inflow hydrograph, stage-discharge, and stage-storage values. Contact David M. Legrande (Hydraulics Section) (804)786-2359.

STATE - MINNESOTA
SYSTEM TITLE - Gutter Flow
SYSTEM NO. - IBM/PC
LANGUAGE - BASIC A
NARRATIVE -

The gutter flow computes area, hydraulic radius, flow width. Velocity and discharge for gutter, lane or total from input of gutter width, slope and road profiles. Contact George L. Kieffer, Director of Systems and Support Services (612)296-6406.

MISCELLANEOUS ENGINEERING PROGRAMS

MIX is a menu driven, BASIC program which calculates the specific gravity of aggregates for the design of the asphalt mix and the proportions of each aggregate in the mix.
MIX $5

STATE - NORTH DAKOTA Added 1985
SYSTEM TITLE - Weigh in motion (WIMS)
SYSTEM NO. - 211 Qtr - 1 Yr - 87 MFG - IBM Model - XT 640K
LANGUAGE - DBASE 3+ No. of Programs - 020
NARRATIVE -

Provides information from data collected by weigh in motion equipment.

STATE - NORTH DAKOTA Added 1985
SYSTEM TITLE - High Accident Locations
SYSTEM NO. - 213 Qtr - 3 Yr - 86 MFG - IBM Model - XT 640K
LANGUAGE - DBASE 3+ No. of Programs - 010
NARRATIVE -

Evaluates accident files and provides reports according to location and severity.

STATE - ARKANSAS
SYSTEM TITLE - Capacity Analysis Program
SYSTEM NO. - IBM/PC, Columbia
LANGUAGE - BASIC compiled
NARRATIVE -

The capacity analysis computes rural, urban and intersection capacities using the 1965 Highway Capacity Manual. Manual available. Contact Ed Rinke (501) 569-2207.

STATE - ARKANSAS
SYSTEM TITLE - License Plate Matching
SYSTEM NO. - IBM/PC, Columbia
LANGUAGE - BASIC compiled
NARRATIVE -

The license plate matching is matching of license plate numbers for license plate origin and destination survey. Manual available soon. Contact Ed Rinke (501)569-2007.

STATE - CALIFORNIA
SYSTEM TITLE - Truck brake temperatures on grades
SYSTEM NO. - Commodore 64
LANGUAGE - BASIC
NARRATIVE -

The truck brake temperatures on grades is developed from truck downgrade breaking model in FHWA Report No. FHWA/RD-81/185, "The development and evaluation of a prototype grade severity rating system". Calculates limiting distance on downgrade for given truck weight and speeds. Tutorial menu-driven available. Contact E.J. Tye (916)323-0925.

STATE - CALIFORNIA
SYSTEM TITLE - SOFTWARE CATALOG
SYSTEM NO. - 8K Byte EPROM+ 1K BYTE R/W
LANGUAGE - Motorola 6800 assembly language
NARRATIVE -

The software catalog is a model 170 traffic signal control program developed for use on state highway intersections (complete catalog attached). Limited manual available. Contact Larry Welsh (916)445-4535.

STATE - CONNECTICUT
SYSTEM TITLE - PHOTOEDIT
SYSTEM NO. -
LANGUAGE - DOS (Compiled Basic)
NARRATIVE -

The photoedit will edit data collected on 4-track Tandberg TDC 3000. Initial data collected via techwest photolog vehicle. Manual available. Contact Dr. Charles E. Dougan (203)529-7741 ext 76.

STATE - CONNECTICUT
SYSTEM TITLE - Roughness
SYSTEM NO. - IBM Sperry MOD 50 (XT Compatible)
LANGUAGE - DOS (Compiled Basic)
NARRATIVE -

The roughness will calculate pavement surface roughness at intervals set up by user. Also calculates roughness excluding bridge joints. Data collected via techwest photolog vehicle. Manual available. Contact Dr. Charles E. Dougan (203)529-77741 ext 76.

STATE - CALIFORNIA
SYSTEM TITLE - Truck brake temperatures on grades
SYSTEM NO. - Commodore 64
LANGUAGE - BASIC
NARRATIVE -

The truck brake temperatures on grades is developed from truck downgrade breaking model in FHWA Report No. FHWA/RD-81/185, "The development and evaluation of a prototype grade severity rating system". Calculates limiting distance on downgrade for given truck weight and speeds. Tutorial menu-driven available. Contact E.J. Tye (916)323-0925.

STATE - IDAHO
SYSTEM TITLE - Skid Truck
SYSTEM NO. - HP
LANGUAGE - HP-85-BASIC
NARRATIVE -

The skid truck is an operator interactive program that receives data transmitted to it from instrumentation mounted on a skid test truck and trailer. From this data the skid resistance of the road surface may be determined. Data is later transmitted to the IBM Mainframe. Manual available. Contact Ron Cole (208)334-2551.

STATE - IDAHO
SYSTEM TITLE - Video Van
SYSTEM NO. - HP-85B with RS-232-C & HPIB interfaces. Need Tandberg 1/4" cartridge tape drive
LANGUAGE - HP-85 BASIC
NARRATIVE -

The video van is an operator interactive program that captures data from instrumentation mounted in the vehicle. Some of the data is sent to a video recorder and merged with a video frame. When replayed, the road may be viewed with a panel denoting location, data, milepoint, etc. The data is also stored on tape for subsequent submission to the IBM Mainframe. Manual available. Contact Ron Cole (208)334-2551.

STATE - IDAHO
SYSTEM TITLE - Dynaflect
SYSTEM NO. - HP-85B with RS-232-C & HPIB interfaces
LANGUAGE - HP-85 BASIC
NARRATIVE -

The Dynaflect is an operator interactive program to capture test measurement data directly from the instrumentation, format it and store it for subsequent transmission to an IBM Mainframe where the data is used in a variety of management information systems. Manual available. Contact Ron Cole (208)334-2551.

STATE - IDAHO
SYSTEM TITLE - Roadmeter
SYSTEM NO. - HP-85B with RS-232-C & HPIB interfaces
LANGUAGE - Roadmeter

NARRATIVE -

The Roadmeter is an operator interactive program to capture, format and store data output from a TI-990 real time system (Cox Roadmeter) that determines the number and magnitude of axle deflections as the vehicle travels a road. The TI-990 is a vendor-supplied package so is not accessible to user modification.

STATE - ARKANSAS
SYSTEM TITLE - Marshall Mix Design Program
SYSTEM NO. - Commodore Pet 2001 or Commodore 64 Plus
LANGUAGE - BASIC COMMODORE
NARRATIVE -

The Marshall mix design will recommend an asphalt mix using Arkansas specifications on stability, density, %VMA, % voids, and flow. Demo tape available. Contact R.A. Gruver, Jr. (501) 569-2196.

STATE - ILLINOIS
SYSTEM TITLE - VOIDS
SYSTEM NO. -
LANGUAGE - Super soft Fortran IV
NARRATIVE -

The voids will reduce falling weight deflectometer data, outputs normalized deflection for each drop, load transfer efficiency and standard 9k deflection, graphs the load deflection plot for each location. Contact David L. Lippert (217)782-6732.

STATE - MINNESOTA
SYSTEM TITLE - Cylinder
SYSTEM NO. - 256K DOS 2.0 5 MB Hard Disk
LANGUAGE - Metafile
NARRATIVE -

The Cylinder is a program for entering concrete cylinder test information and results. Generates various reports. Contact Joel Williams, Concrete Development Engineer, MN/DOT (612)296-7865.

STATE - MINNESOTA
SYSTEM TITLE - MODEM.BAS
SYSTEM NO. - 128K IBM DOS 2.0
LANGUAGE - IBM BASIC
NARRATIVE -

The Modem.Bas accepts data from azurdata hand-held computer via telephone line and modem. Checks data and sends signals to transmitter of data. Contact Joel Williams, Concrete Development Engineer, MN/DOT (612)296-7865.

STATE - MINNESOTA
SYSTEM TITLE - RS232-BAS
SYSTEM NO. - 128K IBM DOS 2.0
LANGUAGE - IBM BASIC
NARRATIVE -

The RS232-BAS accepts data from the azurdata hand-held computer via RS 232 cable interface. Checks data. Contact Joel Williams, Concrete Development Engineer, MN/DOT (612)296-7865.

STATE - MINNESOTA
SYSTEM TITLE - PRODUCT
SYSTEM NO. - 128K IBM DOS 2.0 5 MB Hard Disk
LANGUAGE - Metafile
NARRATIVE -

The product program generates various reports on concrete related products. It includes the ability to update, add or delete records. Contact Leo Warren, Concrete Engineer, MN/DOT (612)296-3111.

STATE - NORTH CAROLINA
SYSTEM TITLE - Sign Copy Spacing and Width Design
SYSTEM NO. -
LANGUAGE - Applesoft Basic (Apple IIE, 64K)
NARRATIVE -

The Sign Copy Spacing and Width Design determines sign width and copy spacing for use in sign layout of highway signs. Contact G.G. Grigg, Jr., P.E., (919)733-3915.

STATE - NORTH DAKOTA
SYSTEM TITLE - Guardrail Length of Need
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Guardrail Length of Need determines the guardrail length of need dependent on traffic, clear zone and lateral clearance. (Ref: AASHTO Guide for selecting, locating and designing traffic barriers). Contact George Stelzmiller (701)224-2556.

STATE - NORTH DAKOTA
SYSTEM TITLE - Lightning and Signal Conductor and Conduit Length Calculations
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Lightning & Signal Conductor and Conduit Length Calculations, calculates conductor and conduit length required of various runs in plans. Contact George Stelzmiller (701)224-2556.

STATE - NORTH DAKOTA
SYSTEM TITLE - Pavement Marking - Quantities
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett Packard)
NARRATIVE -

The Pavement Marking - Quantities computes pavement markings for various types of highways. Contact George Stelzmiller (701)224-2556.

STATE - NORTH DAKOTA
SYSTEM TITLE - Sign Support Design & Summary Sheet
SYSTEM NO. -
LANGUAGE - FORTRAN (Hewlett Packard)
NARRATIVE -

The Sign Support Design & Summary Sheet calculates sign support length and sizes and summarizes on a spread sheet for use in plans. (Ref. Std. spec. for structural. supports for highway signs). Contact George Stelzmiller (701)224-2556.

STATE - NORTH DAKOTA
SYSTEM TITLE - Manhole Computations
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Manhole Computations computes manhole sizes and riser lengths from given lead line sizes, azimuth angles and elevations. (Ref. North Dakota Concrete Products).

STATE - OREGON
SYSTEM TITLE - UNSIG
SYSTEM NO. - IBM/PC W/256K
LANGUAGE - MICROSOFT FORTRAN
NARRATIVE -

The UNSIG unsignalized intersection capacity analysis. Contact Tim Thex (503)378-3423.

STATE - OREGON
SYSTEM TITLE - TRUCKSUM
SYSTEM NO. - IBM/PC, LOTUS 1-2-3
LANGUAGE - LOTUS 1-2-3
NARRATIVE -

Intersection truck count analysis for EIS truck data. Contact Tim Thex (503)378-3423.

STATE - VIRGINIA
SYSTEM TITLE - Traffic Count Program
SYSTEM NO. - 64K, DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Allows user to key in incremental 15 minutes traffic volumes, edit volumes, calculate; peak hours, peak hour volumes, peak 8 hours and volume, and print count data for a 24-hour count. Contact L.C. Caldwell (804)786-2985.

STATE - ALBERTA
SYSTEM TITLE - ROADMETER CONVERSION SYSTEM
SYSTEM NO. - 256K RAM, IRMA 3270 Terminal Emulator, MEMTEX 5450

Cassette Tape Reader, 1 disk drive. (IBM/PC).
LANGUAGE - Compiled BASIC, DOS
NARRATIVE -

The Roadmeter format conversion system converts data collected on cassette tape by a James Cox Roadmeter (CS 8000 Programmable Roadmeter) into the format required for storage and processing on mainframe system and transfers data to the mainframe. Manual available. Contact MOH ASHRAF (403)427-3101.

STATE - ALBERTA
SYSTEM TITLE - Quality Control System
SYSTEM NO. - 512K, RAM, 2 Disk drives (IBM/PC)
LANGUAGE - Written in the application language of the data base knowledge manual
NARRATIVE -

The Quality Control System is a menu driven application allows storage of large amounts of test data and produces weekly and summary reports for gradations, compaction, temperatures and other construction quality parameters. Manual available soon. Contact Moh Ashraf (403)427-3101.

MISCELLANEOUS TOPICS

STATE - ARKANSAS
SYSTEM TITLE - Needs inventory system
SYSTEM NO. - IBM/PC, Columbia
LANGUAGE - BASIC compiled
NARRATIVE -

The needs inventory system is a small urbanized area road and bridge inventory system. Queries, prints, sorts of road and bridge inventory data, as well as road and bridge improvement prioritization. Manual available. Source code available. Contact Ed Rinke (501) 569-2207.

STATE - FHWA

STATE - FHWA
SYSTEM TITLE - LOTUS spreadsheet automator
SYSTEM NO. - 320 Qtr - 1 Yr - 85 MFG - Model - 256K MICRO
LANGUAGE - LOTUS123 No. of Programs - 000
NARRATIVE -

This is a 2 LOTUS123 template which is designed to automate existing LOTUS spreadsheets. The purpose is to simplify use of more advanced LOTUS features and to minimize time required to add Macro capabilities to a frequently used spreadsheet. Contact Mark Chatfield 202-426-0451 HNG-12

STATE - SOUTH DAKOTA Added 1985
SYSTEM TITLE - Contractor Payroll
SYSTEM NO. - 4 Qtr - 4 Yr - 86 MFG - IBM Model - PC
LANGUAGE - DBASE 3+ No. of Programs - 025
NARRATIVE -

This is a completely menu driven system. The purpose is to insure that contractors pay their employees for each week that work is
done on a project. Information about projects under construction is downloaded from an existing system on the mainframe. Information about the contractors and their payrolls is entered by the user.

STATE - SOUTH DAKOTA Added 1985
SYSTEM TITLE - PC Inventory
SYSTEM NO. - 5 QTR - 4 Yr - 86 MFG - IBM Model - PC
LANGUAGE - DBASE 3 No. of Programs - 000
NARRATIVE -

This is a completely menu driven system. The purpose is to maintain an inventory of all PC hardware and software owned by DOT. Information stored consists of an item ID number, a description of the item, the location of the item, the date purchase, and some general comments.

STATE - VIRGINIA Added 1985
SYSTEM TITLE - Maintenance Replacements Budgeting
SYSTEM NO. - 206 Qtr - 1 Yr - 87 MFG - IBM Model - PC/COMPAT.
LANGUAGE - DBASE 222 No. of Programs - 035
NARRATIVE -

Used in conjunction with Mainframe maint. management system (VA205) for field managers to prepare detailed plan of maint. replacements. Rough plan is downloaded to floppies, modified on micros, and changes are uploaded to mainframe for updating master plan file. Downloaded unit costs and other tables allow micro to emulate mainframe budget calculations and reports.

STATE - ARKANSAS
SYSTEM TITLE - Benefit/Cost template
SYSTEM NO. - IBM/PC, Columbia
LANGUAGE - LOTUS 1-2-3
NARRATIVE -

The benefit/cost template will calculate road user costs. Construction costs, and benefit/cost ratios for highway projects. Manual available. Contact Ed Rinke (501) 569-2207.

STATE - ARKANSAS
SYSTEM TITLE - License Plate Matching
SYSTEM NO. - IBM/PC, Columbia
LANGUAGE - BASIC compiled
NARRATIVE -

The license plate matching is matching of license plate numbers for license plate origin and destination survey. Manual available soon. Contact Ed Rinke (501)569-2007.

STATE - CALIFORNIA
SYSTEM TITLE - SOFTWARE CATALOG
SYSTEM NO. - 8K Byte EPROM+ 1K BYTE R/W
LANGUAGE - Motorola 6800 assembly language
NARRATIVE -

The software catalog is a model 170 traffic signal control program developed for use on state highway intersections (complete catalog attached). Limited manual available. Contact Larry Welsh (916)445-4535.

Miscellaneous Traffic Programs

STATE - FHWA
SYSTEM TITLE - Transyt-7F Network Study Tool
SYSTEM NO. - 322 Qtr - 3 Yr - 84 MFG - IBM Model - PC
LANGUAGE - FORTRAN77 No. of Programs - 001
NARRATIVE -

TRANSYT-7F is a tool to develop optimal signal timing plans for networks of coordinating intersections. The program runs under DOS 2.0 (or later) operating system and requires 256K of memory. An 8087 Math Co-Processor Chip is recommended.

(202)426-0411 (HTO-23)

STATE - ARKANSAS
SYSTEM TITLE - Capacity Analysis Program
SYSTEM NO. - IBM/PC, Columbia
LANGUAGE - BASIC compiled
NARRATIVE -

The capacity analysis computes rural, urban and intersection capacities using the 1965 Highway Capacity Manual. Manual available. Contact Ed Rinke (501) 569-2207.

STATE - ARKANSAS
SYSTEM TITLE - Needs inventory system
SYSTEM NO. - IBM/PC, Columbia
LANGUAGE - BASIC compiled
NARRATIVE -

The needs inventory system is a small urbanized area road and bridge inventory system. Queries, prints, sorts of road and bridge inventory data, as well as road and bridge improvement prioritization. Manual available. Source code available. Contact Ed Rinke (501) 569-2207.

STATE - CALIFORNIA
SYSTEM TITLE - Safety Index
SYSTEM NO. - HP41CV with 2233K
LANGUAGE - HP41 Keystroke
NARRATIVE -

The safety index will calculate cost-benefit index for highway safety projects. Uses accident data, accident values. Construction costs and checks significance of results. Tutorial menu-driven available. Contact R.G. Waterhouse (916)445-9267.

STATE - IDAHO
SYSTEM TITLE - Local Road Inventory
SYSTEM NO. - HP-85B, 12"x12" digitizer, HPIB interface, RS-232-interface, assembler ROM. Also need 1/4" tape cartridge (prefer Tandberg).
LANGUAGE - HP-85 BASIC, Assembler
NARRATIVE -

The local road inventory is an operator interactive program using a digitizing tablet for menu data input and the keyboard. Inventory data is captured directly, replacing pencil and paper operations and stored on a Tandberg 1/4" cartridge tape. It is subsequently relayed to the IBM Mainframe for data base update and report generation. HP-85B, 12"x12" digitizer. HPIB interface, RS-232-C interface, assembler ROM. Also need 1/4" tape cartridge (prefer Tandberg). Manual under development. Contact Ron Cole (208)334-2551.

STATE - IDAHO
SYSTEM TITLE - Traffic Monitoring Data Capture
SYSTEM NO. - HP 9000 Model 220, 1.2M. RAM with hard disk and dual 3 1/2" floppies. Tandberg 1/4" cartridge tape driven.
LANGUAGE - HP-200 Pascal
NARRATIVE -

The traffic monitoring data capture is a series of programs designed to retrieve data from streeter - AMET & Golden River monitors (speed and volume data), bridge weighing-in-motion, IRD vehicle classification station. The traffic monitoring equipment can be accessed thru the dial telephone after normal working hours using unattended operation on the Model 220. The data is subsequently relayed to the IBM Mainframe on industry standard 1/2" magnetic tape. Manual under development. Contact Ron Cole (208)334-2551.

STATE - MINNESOTA
SYSTEM TITLE - Approved Products Listing
SYSTEM NO. - IBM/PC
LANGUAGE - Metafile
NARRATIVE -

The Approved Products Listing is a list of special products that have been approved by the materials office and provides information on the manufacturer and supplier. Contact George L. Kieffer, Director of Systems and Support Services (612)296-6406.

STATE - NORTH DAKOTA
SYSTEM TITLE - Cost-Effective Analysis for Safety
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett Packard)
NARRATIVE -

The Cost-Effective Analysis for Safety compares various safety improvements to do nothing to determine at what traffic volumes it is cost effective to do safety improvement (Ref: AASHTO Guide for selecting, locating and designing traffic barriers). Contact George Stelzmiller (701)224-2556.

STATE - TEXAS
SYSTEM TITLE - Accident Analysis Template (Lotus 1-2-3)
SYSTEM NO. - MS/DOS 2.1
LANGUAGE - LOTUS 1-2-3 Template
NARRATIVE -

The Accident Analysis Template (LOTUS 1-2-3) is used to calculate critical accident rates based on vehicle miles of travel and number of accidents. Manual available. Demo disk available. Contact Walt Bailey, D-10P (512)465-7465.

STATE - TEXAS
SYSTEM TITLE - Parking Analysis Template (LOTUS 1-2-3)
SYSTEM NO. - MS/DOS 2.1
LANGUAGE - LOTUS 1-2-3 Template
NARRATIVE -

The Parking Analysis Template (LOTUS 1-2-3) is used to estimate parking accumulation using daily trips by trip purpose (from modeling process). Manual available. Contact Walt Bailey, D-10P (512)465-7465.

STATE - TEXAS
SYSTEM TITLE - Land Use Inventory
SYSTEM NO. - D BASE II, MS/DOS 2.1
LANGUAGE - D BASE II
NARRATIVE -

The Land Use Inventory is a series of D BASE II programs to establish and maintain a database of land use by serial zone. Includes provision for special generators. Formation for use with Texas Modeling Systems. Manual available. Contact Walt Bailey, D-10P (512)465-7465.

PAVEMENT DESIGN and MANAGEMENT

PMF (Pavement Management Forecasting Model) is a Lotus 1-2-3 template for use in planning roadway maintenance and strategies.
PMF $25

RIGID PMS (Pavement Management System) is a microcomputer system to determine the condition of rigid pavements and to provide a manner to formulate decisions on which type of reconstruction or rehabilitation is required.
RIGPMS $25

TAFFY yields temperature adjustment factors intended to be used with roadway deflection measurement devices such as a Benkelman beam, Dynaflect, or a Failing Weight Deflectometer on asphalt pavements.
TAFFY $5

WORKSHEET SOLUTIONS consists of seven Symphony 1.1 spreadsheets for the solution of the 1986 AASHTO Pavement Design Equations.
PDW $25

FLRDS (Forest Level Road Design System) is designed to follow the normal steps associated with manual road design.
FLRDS.GSS $135

FPMS1 is a menu driven program which allows users to break a large network of roads into manageable segments for evaluating roadway maintenance needs.
FPMS1 $5

ILLI-PAVE Algorithms is a program based on a set of algorithms that were assembled from ILLI-PAVE, a very large complex finite element program.
ILLI $25

Jointed Concrete Pavement (JCP-1) determines the serviceability and fatigue data for use in rigid pavement design.
JCP $30

MAPCON (Methods for Analyzing Pavement CONdition data) is a comprehensive, but user friendly package for pavement safety, roughness, structural capacity and surface condition analysis.
MAPCON $80

NULOAD is a computerized procedure that evaluates the effect of legal load limit changes on the (set of 12) life cycle costs of flexible, rigid, and/or composite pavements.
NULOAD $25

FLEXIBLE PMS (Pavement Management System) is a microcomputer system to determine the condition of flexible pavements and to provide a manner to formulate decisions on which type of reconstruction or rehabilitation is required.
FLEXPMS $25

PMS Supplemental Documentation is a two volume set covering the development of the California Pavement Management System.
FLEXPMS $25

BERM is a program for the structural design of roadway shoulders.
BERM $5

ELSYM5 is a computerized procedure which models a three-dimensional idealized elastic layered pavement system.
ELSYM5 $25

STATE - NORTH DAKOTA Added 1985
SYSTEM TITLE - PAVEMENT MANAGEMENT
SYSTEM NO. - 212 Qtr - 2 Yr - 86 MFG - IBM Model - XT 640K
LANGUAGE - DBASE 3+ No. of Programs - 200
NARRATIVE -

Tracks existing conditions of state highways. Data elements include distress, ride, skid and deflection. Evaluates data that is used to plan for maintenance and construction.

STATE - NORTH DAKOTA Added 1985
SYSTEM TITLE - Maintenance Management
SYSTEM NO. - 214 Qtr - 2 Yr - 87 MFG - IBM Model - XT 640K
LANGUAGE - COBOL No. of Programs - 052
NARRATIVE -

Provides actual cost information of highway maintenance activities by highway, milepoint, and section. Provides manpower scheduling, annual work program, identifies resources needed, and planning.

STATE - CONNECTICUT
SYSTEM TITLE - HIWAY, Version 1.0
SYSTEM NO. - IBM/PC
LANGUAGE - BASICA or IBM Compiled BASIC
NARRATIVE -

The Hiway, version 1.0 is a controller software for photolog laser videodisc viewing system with high-resolution color-graphics overlay capabilities. Manual available. Contact Dr. Charles E. Dougan (203)529-7741 Ext 76.

STATE - CONNECTICUT
SYSTEM TITLE - ROADS, Version 1.0
SYSTEM NO. - IBM/PC
LANGUAGE - BASICA or IBM Compiled BASIC
NARRATIVE -

The Roads, version 1.0 is a laser videodisc index program that creates program files which operate videodisc viewing equipment under Hiway, above. Contact Dr. Charles E. Dougan (203)529-7741 Ext 76.

STATE - MARYLAND
SYSTEM TITLE - PMS System Programs
SYSTEM NO. - IBM-PC, 256K
LANGUAGE - BASIC A
NARRATIVE -

The PMS System programs is a program that produces pavement management reports using road condition survey data (surface friction, distress, traffic and ride). Manual available. Contact Samuel R. Miller (301)321-3545.

STATE - MARYLAND
SYSTEM TITLE - Road Condition Graphs
SYSTEM NO. - IBM/PC 256K
LANGUAGE -
NARRATIVE -

The road condition graphs is a bar and pie chart creation. CVAR charts show the percentage of miles in the categories 1-18, for state, district and counties. Pie charts show the percentage in the good, fair and poor categories for state and districts. Help screen manual available. Contact Samuel R. Miller (301)321-3545.

STATE - MARYLAND
SYSTEM TITLE - Trending Report
SYSTEM NO. - IBM PC, 256K
LANGUAGE - BASIC
NARRATIVE -

The trending report compares distress of 1983 with distress of 1984 and generates a trending report. Help menu manual available. Contact Samuel R. Miller (301)321-3545.

STATE - MINNESOTA
SYSTEM TITLE - FIELD
SYSTEM NO. - Needs azurdata scorepak IV hand-held computer 16K
LANGUAGE - Scoreplan
NARRATIVE -

The field data entry program for the azurdata scorepak IV hand-held computer. This program is used for our field data collection for the concrete pavement evaluation system (COPES). Contact Joel Williams, Concrete Development Engineer, MN/DOT (612)296-7865.

SAFETY SOFTWARE

STATE - CALIFORNIA
SYSTEM TITLE - Safety Index
SYSTEM NO. - HP41CV with 2233K
LANGUAGE - HP41 Keystroke
NARRATIVE -

The safety index will calculate cost-benefit index for highway safety projects. Uses accident data, accident values. Construction costs and checks significance of results. Tutorial menu-driven available. Contact R.G. Waterhouse (916)445-9267.

HISAFE (HIghway SAFety Evaluation) evalutes the effectiveness of accident counter measures following implementation.
HISAFE $25

HISAM (Highway Safety and Monitoring Software) meets information needs and aids local agencies with data base development and accident analysis.
HISAM $25

KSLAD (Kansas Local Accidents Database) is an accident database system using dBASE III.
KSLAD $20

ROADSIDE is a tool useful for highway design engineers making decisions regarding the design of roadsides and placement of highway hardware.
ROADSIDE $25

SCARS (Small Computer Accident Records System) allows detailed analysis of accidents for any network of routes.
SCARS $350

Small Computer COLlision Diagram (SSCOLD) displays a collision diagram.
SSCOLD $60

UPACE (Utility Pole Accident Countermeasure Evaluation) facilitates the cost-effectiveness analysis of utility pole accident countermeasures.
UPACE $25

SOILS and EROSION

WEAP87 (Wave Equation Analysis of Pile Foundation) is a program which simulates a foundation pile under the action of an impact pile driving hammer.
WEAP $75

STATE - ALBERTA
SYSTEM TITLE - MOHR CIRCLES
SYSTEM NO. - HP-98165, HP-9872T Plotter
LANGUAGE - BASIC
NARRATIVE -

The MOHR CIRCLES plots on screen and plotter. Automatic scaling from minimum and maximum data valves. Differentiates between effective normal stress and total normal stress. Manual available. Contact Moh Ashraf (403)427-3101.

STATE - ALBERTA
SYSTEM TITLE - Reversing Direct Shear Tests
SYSTEM NO. - HP-98165, HP-9872T Plotter
LANGUAGE - BASIC
NARRATIVE -

The Reversing Direct Shear Tests plots 7 reversals, automatic scaling, calculates residuals, and comments can be added to the plots. Manual available. Contact Moh Ashraf (403)427-3101.

STATE - NORTHWEST TERRITORIES
SYSTEM TITLE - Earth Pressure by Coulomb Method
SYSTEM NO. - HP 75 (16K RAM)
LANGUAGE - BASIC
NARRATIVE -

The Earth Pressure by Coulomb Method program computes the horizontal and vertical components of active earth pressure on a retaining wall by Coulomb's method of trial failure wedge. Manual available. Contact Raymond Ho. Structural Engineer (403)873-7564.

STATE - NORTHWEST TERRITORIES
SYSTEM TITLE - Slope Stability by Janbu Method
SYSTEM NO. - HP 75 (16K RAM)
LANGUAGE - BASIC
NARRATIVE -

The Slope Stability by Janbu Method program is used to calculate the factor of safety of a slope by Janbu method and the slip surface may be of any shape. Manual available. Contact Raymond Ho, Structural Engineer (403)873-7564.

STATE - MINNESOTA
SYSTEM TITLE - PIT
SYSTEM NO. - 128K IBM PC DOS 2.0 5 MB Hard Disk
LANGUAGE - Metafile
NARRATIVE -

The PIT program generates various reports on concrete aggregate sources. It includes the ability to add, update or delete records. Contact Leo Warren, Concrete Engineer, MN/DOT (612)296-3111.

STATE - NORTH DAKOTA
SYSTEM TITLE - Temporary Erosion Protection
SYSTEM NO. -
LANGUAGE - BASIC (Hewlett-Packard)
NARRATIVE -

The Temporary Erosion Protection computes maximum allowable discharge and depth of flow for 9 types of flexible linings for various ditch widths and slopes. (ref. HEC.15).

STATE - WISCONSIN
SYSTEM TITLE - SLOPEING
SYSTEM NO. - IBM/PC
LANGUAGE - BASIC A
NARRATIVE -

The Slopeing program takes inclinometer data and reduces it down to comparable data. Contact Jeff Horsfall (608)246-3249.

STATE - ALASKA
SYSTEM TITLE - BERG
SYSTEM NO. - IBM/PC
LANGUAGE - BASIC
NARRATIVE -

The BERG is a "User-friendly" program which solves the modified Berggren equation to estimate depths of maximum freeze or thaw in a multilayered soil systems. Manual available. Demo disk. Contact Billy Connor (907) 479-2241).

STATE - MINNESOTA
SYSTEM TITLE - Gravel Source System
SYSTEM NO. - IBM/PC
LANGUAGE - Metafile
NARRATIVE -

The Gravel Source System maintains a database with list, sort and print capabilities for all gravel pits by district, county, city or township and range. Contact George L. Kieffer, Director of Systems and Support Services (612)296-6406.

STRUCTURES

KU-SBAR is capable of analyzing and rating simple steel or concrete girder bridges up to three spans in length. $150

KU-STAR is a capable of analyzing and rating simple steel truss bridges using standard AASHTO H, HS, 3, 3S2, and 3-3 Rating Trucks, or non-standard truck configuration. $150

STATE - SOUTH DAKOTA Added 1985
SYSTEM TITLE - Bridge Approach Rail Design - BARD
SYSTEM NO. - 11 Qtr - 4 Yr - 86 MFG - IBM Model - PC
LANGUAGE - FORTRAN No. of Programs - 001
NARRATIVE -

BARD accepts bridge and terrain geometry and designs the guard rail require for each corner of a bridge using the 'Guide for Selecting, Locating and Designing Traffic Barriers', published by AASHTO in 1977. The channel depth, bridge abutment and any miscellaneous hazards are analyzed to compute the rail length.

STATE - SOUTH DAKOTA Added 1985
SYSTEM TITLE - Guard rail design and protection analysis
SYSTEM NO. - 12 Qtr - 4 Yr - 86 - MFG - IBM Model - PC
LANGUAGE - FORTRAN No. of Programs - 001
NARRATIVE -

This system designs guard rail for roadside hazards and determines its cost effectiveness using the 'Guide for Selecting, Locating and Designing Traffic Barriers', published by AASHTO in 1977. The analysis considers installation, maintenance, and repair costs, as well as costs of damage and injuries predicted by application of historical accident records.

STATE - VERMONT Added 1985
SYSTEM TITLE - Ranul Stress
SYSTEM NO. - 1 Qtr - 1 Yr - 87 MFG - IBM Model - PC/AT
LANGUAGE - BASIC No. of Programs - 000
NARRATIVE -

Analyzes concrete/steel rigid frame and steel/wooden trusses proprietary software by Ranul, Incorporated

STATE - VERMONT Added 1985
SYSTEM TITLE - Combfoot
SYSTEM NO. - 2 Qtr - 1 Yr - 87 MFG - IBM Model - PC/AT

LANGUAGE - BASIC No. of Programs - 000
NARRATIVE -

Designs concrete footing with two concrete or steel columns: Proprietary software by Structural Software, Inc.

STATE - VERMONT Added 1985
SYSTEM TITLE - ISOLFOOT
SYSTEM NO. - 7 Qtr - 1 Yr - 87 MFG - IBM Model - PC/AT
LANGUAGE - BASIC No. of Programs - 000
NARRATIVE -

Designs concrete footings with only one concrete or steel column. Proprietary software by Structural Software Inc.

STATE - VERMONT Added 1985
SYSTEM TITLE - RCCOLUMN
SYSTEM NO. - 8 Qtr - 1 Yr - 87 MFG - IBM Model - PC/AT
LANGUAGE - BASIC No. of Programs - 000
NARRATIVE -

Analyzes or designs round or rectangular concrete columns. Proprietary software by Structural Software Inc.

STATE - VERMONT Added 1985
SYSTEM TITLE - EDM
SYSTEM NO. - 9 Qtr - 1 Yr - 87 MFG - IBM Model - PC/AT
LANGUAGE - BASIC No. of Programs - 000
NARRATIVE -

STATE - MARYLAND
SYSTEM TITLE - Design/Construction program for single pole structures
SYSTEM NO. - Radio Shack 65K
LANGUAGE - BASIC
NARRATIVE -

The design/construction program is a support program for design/construction program system for overhead support structures. Designed for analysis of single pole systems. Contact Mavin Patel; Traffic Engineer; Bureau of Traffic Studies, ARA Building; Hammonds Ferry Road; (301)859-7459.

STATE - MARYLAND
SYSTEM TITLE - Analysis of deflection of sign poles
SYSTEM NO. -
LANGUAGE - BASIC

NARRATIVE -

The analysis of deflection of sign poles is a support program for design/construction program system for overhead support structures. Contact Mavin Patel (301)859-7459.

STATE - MICHIGAN
SYSTEM TITLE - Rolled Beam Design
SYSTEM NO. - IBM/PC 256K
LANGUAGE - FORTRAN
NARRATIVE -

The rolled beam design is a designed rolled beam for highway bridges using working stress or load factor methods. Most economic section is selected. Meets current AASHTO spec. manual available soon. Contact Dr. S.R. Kulkarni (517)373-1959.

STATE - MINNESOTA
SYSTEM TITLE - Super Span
SYSTEM NO. - IBM/PC
LANGUAGE - BASIC A
NARRATIVE -

The Super Span is a 6 culvert design programs for hydraulic design of horizontal ellipses, low profile arches, high profile arches, pearshapes and circular pipes, both concrete and metal. Uses mannings N. will compute flow profile thru pipe, inlet/outlet control and headwater. Contact George L. Kieffer, Director of Systems and Support Services (612)296-6406.

STATE - MINNESOTA
SYSTEM TITLE - Geometrics
SYSTEM NO. - IBM/PC
LANGUAGE - BASIC A
NARRATIVE -

The Geometrics is a series of programs to do Geometrics for design and surveys including horizontal and vertical curves; radial coordinates, distances and azimuths; intersections of line-line, line-circle and circle-circle. Contact George L. Kieffer, Director of Systems and Support Services (612)296-6406.

STATE - MINNESOTA
SYSTEM TITLE - Concrete Pavement Design
SYSTEM NO. - IBM/PC
LANGUAGE - Metafile
NARRATIVE -

Given traffic, serviceability and soil characteristics, this program will design a bituminous or concrete slab thickness. Contact George L. Kieffer, Director of Systems and Support Services (612)296-6406.

STATE - MINNESOTA
SYSTEM TITLE - DESIGN
SYSTEM NO. - 128K IBM DOS 2.0 5 MB Hard Disk
LANGUAGE - Metafile
NARRATIVE -

The Design is a data entry program for historical data for the concrete pavement evaluation system (COPES). Contact Joel Williams, Concrete Development Engineer, MN/DOT (612)296-7865.

STATE - MINNESOTA
SYSTEM TITLE - PAVE
SYSTEM NO. - 128K PC DOS 2.0
LANGUAGE - IBM BASIC
NARRATIVE -

The Pave Program will analyze/design structurally equivalent pavements in concrete or bituminous. The program is based upon the AASHTO pavement design equations. Contact Leo Warren, Chief of Concrete Engineering, MN/DOT (612) 296-3111.

STATE - MISSOURI
SYSTEM TITLE - BZ 139B Pre-Stress Camber
SYSTEM NO. - IBM Compatible 64K capacity
LANGUAGE - BASIC
NARRATIVE -

The BZ 139 pre-stress camber processes concrete beams of different strengths and strands to determine camber. Manual available. Contact W.L. Trimm, Division Engineer, Materials and Research (314)751-3706.

STATE - MISSOURI
SYSTEM TITLE - BZ 034 Semi-Deep Abutments
SYSTEM NO. - IBM Compatible 64K capacity
LANGUAGE - BASIC
NARRATIVE -

The BZ 034 Semi-Deep Abutments is a design geometric dimensions of a semi-deep abutment. Manual available. Contact W.L. Trimm, Division Engineer, Materials and Research (314)751-3706.

STATE - MISSOURI
SYSTEM TITLE - BZ 139F Longitudinal Force Distribution
SYSTEM NO. - IBM Compatible 64K capacity
LANGUAGE - BASIC
NARRATIVE -

The BZ 139F Longitudinal Force Distribution determines longitudinal force distribution (WIND) for a continuous series of bents and elastomeric bearing pads. Manual available. Contact W.L. Trimm, Division Engineer, Materials and Research (314)751-3706.

STATE - MISSOURI
SYSTEM TITLE - BZ 490 Girder Reactions
SYSTEM NO. - IBM Compatible 64K capacity
LANGUAGE - BASIC
NARRATIVE -

The BZ 490 Girder Reactions determines reactions for uniform slab load for non-uniform girder spacing. Manual available. Contact W.L. Trimm, Division Engineer, Materials and Research (314)751-3706.

STATE - MISSOURI
SYSTEM TITLE - BZ 139A Fatigue Stress in Rebars
SYSTEM NO. - IBM Compatible 64K capacity
LANGUAGE - BASIC
NARRATIVE -

The BZ 139A Fatigue Stress in Rebars Program calculates the stresses in reinforcement of a rectangular concrete section. The actual range and allowable range is calculated and compared. Manual available. Contact W.L. Trimm, Division Engineer, Materials and Research (314)751-3706.

STATE - TENNESSEE
SYSTEM TITLE - Bridge Screed - Available August 1, 1985
SYSTEM NO. - IBM/PC 256K & XT
LANGUAGE - FORTRAN with Basic Input File Builder
NARRATIVE -

The Bridge Screed is a menu driven, input and output files created. This program calculates the slab elevations over straight beams. Manual available. Demo disk available. Contact Tenn. Dept. of Transportation (615)741-3576.

STATE - VIRGINIA
SYSTEM TITLE - Steel Beam or Girder Section Properties - negative Moment

SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Computes section properties for rolled beams and plate girders in negative moment region. With given moment and shear, program computes stresses as well as shear connector spacing. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Steel Beam or Girder Section Properties
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Given known dimensions of steel beam or girder section, computes section properties for non-composite as well as composite steel beam or girder sections. Also computes stress if moments have been given. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Critical Moments and Shears
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Given beginning and end range of span length and the increment no. of axles, axle loadings and distance between axles, computes maximum moment and shear for a simple beam due to series of concentrated loads on each span. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Concrete Section Analysis
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Given rectangular concrete section with from 1 to 4 tensile reinforcing steel areas, and 2 compressive reinforcing steel areas, program computes section properties and analyzes stresses for a given moment and shear. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Live Load Reactions on Pier or Abutment
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Computes the Abutment or Pier Reaction produced by any number of truck or lane loads on either a simple or continuous bridge. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Bolted Beam and Girder Slice Design and Analysis
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE -
NARRATIVE -

Designs and Analyzes bolted splice of rolled beam or plate girder either composite or noncomposite, concurrent with 1983 AASHTO Bridge Specifications and VDH&T Modifications. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Concentric Curve Skewed Bridge Geometry
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Computes pertinent design data for bridge with horizontal and vertical curve. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Bearing Stiffener Design and Analysis
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Designs and analysis bearing stiffeners for plate girders and rolled beams. Stiffener consists of two plates welded to the web at bearing centerline. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Transverse Stiffener Design and Analysis
SYSTEM NO. - 64K, 1 DS/DD Drive
LANGUAGE - BASIC
NARRATIVE -

Designs and analyzes transverse web stiffeners for plate girders at simply supported ends as well as intermediate points. Transverse stiffener may be single or in pairs. Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Prestressed Concrete Beam Design and Analysis
SYSTEM NO. - 260K, 1 DS/DD Drive, MS/DOS
LANGUAGE - FORTRAN

NARRATIVE -

Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Steel Girder Design and Analysis
SYSTEM NO. - 90K, 1 DS/DD Drive, MS/DOS
LANGUAGE - FORTRAN
NARRATIVE -

Contact C.S. Chen (804)786-2358.

STATE - VIRGINIA
SYSTEM TITLE - Deck Slab Design
SYSTEM NO. - 50K, 1 DS/DD, MS/DOS
LANGUAGE - FORTRAN
NARRATIVE -

Contact C.S. Chen (804)786-2358.

STATE - WISCONSIN
SYSTEM TITLE - PILE LN2 BAS
SYSTEM NO. - IBM/PC 256K
LANGUAGE - BASIC A
NARRATIVE -

The PILE LN2 BAS program is designed to calculate the required length of a selected pile type when given skin friction and bearing capacity values and the depth to the bottom of each soil layer. Contact Jeff Horsfall (608)246-3249.

STATE - WISCONSIN
SYSTEM TITLE - PILE CAL BAS
SYSTEM NO. - IBM/PC, 256K
LANGUAGE - BASIC A
NARRATIVE -

The PILE CAL BAS is designed to calculate the end bearing and skin friction for a given soil profile. Each layer must be entered with its unit wt., depth, c, (Related to c_q). Contact Jeff Horsfall (608)246-3249.

STATE - NORTHWEST TERRITORIES
SYSTEM TITLE - CONTINUOUS BEAM
SYSTEM NO. - HP 75 (16K RAM)
LANGUAGE - BASIC
NARRATIVE -

The Continuous Beam program may be used to analyze a continuous beam structure of not more than 8 spans. Bending moment and shearing forces due to various types of loading or settlement of supports will be provided at 1/8th points of each span. Manual available. Contact Raymond Ho, Structural Engineer (403)873-7564.

STATE - NORTHWEST TERRITORIES
SYSTEM TITLE - SECTION PROPERTIES
SYSTEM NO. - HP 75 (16K RAM)
LANGUAGE - BASIC
NARRATIVE -

The section properties program is developed to compute section properties of any structural shapes including composite section of steel and concrete. Manual available. Contact Raymond Ho, Structural Engineer (403)873-7564.

STATE - NORTHWEST TERRITORIES
SYSTEM TITLE - Moving Load on Simply Supported Bridge Span
SYSTEM NO. - HP 75 (16K RAM)
LANGUAGE - BASIC
NARRATIVE -

The Moving Load on Simply Supported Bridge Span program computes the maximum bending movement and shear force for given length of simply supported bridge span due to traveling loads. Manual available. Contact Raymond Ho. Structural Engineer (403)873-7564.

BOXCAR (Box Culvert Analysis and Reinforcing Design) is a program for the structural analysis and design of reinforced concrete box sections.
BOXCAR $95

CMPCHECK (Corrugated Metal Pipe Check) is a program which performs a design check on corrugated culverts using information regarding the type of culvert, its diameter, seam configuration, height of cover and loading.
CMPCHECK $25

Culvert Analysis (HY-8) assists in the design of culverts.
HY8 $70

PC-STRAN^{T}M is a 1,2, or 3-dimensional structural analysis program for member structures.
PCSTRAN $5

PIPECAR (Pipe Culvert Analysis and Reinforcing Design) is a programs for the structural analysis and design of reinforced concrete box sections, and circular and horizontal reinforced concrete pipes respectively.
PIPECAR $95

STATE - MISSOURI
SYSTEM TITLE - BZ 515 Bridge Sufficiency Rating
SYSTEM NO. - IBM Compatible 65K Capacity
LANGUAGE - BASIC
NARRATIVE -

The BZ 515 Bridge Sufficiency Rating provides bridge sufficiency from structural inventory and appraisal sheets. Manual available. Contact W.L. Trimm, Division Engineer, Materials and Research (314)751-3706.

TRAFFIC ENGINEERING SOFTWARE

AAP combines SOAP84, PASSER iI-84 and TRANSYT-7F into a single package with a common input data coding process for all three programs. $165

CIRCAP. Developed by Kim Erick Hazarvartian, CIRCAP is an interactive program for capacity analysis of rotary or traffic circle intersections. $12.50

COUNTS-PC is a program used to process 24-hour traffic counts with 15-minute subtotals and to evaluate signal warrants and multi-way stop warrants. $15

EZ-POSIT is used to analyze the signal timing plan for single intersections. $15

EZ-SIGOP is a multi-window, full-screen editor for preparing input data for SIGOP-III. $60

EZ-TRANSYT PLUS is a powerful input data processor for generating error-free input data files for TRANSYT-7F. $350

FREWAY calculates the effects of freeway lane closures. $12.50

HIGHWAY CAPACITY SOFTWARE. We have made arrangements with the McTrans Center to market the FHWA Highway Capacity Software which is supported by McTrans. $142.50

KARS is an enhanced and compiled version of the KSLAD accident database program providing much quicker operation. $195

KARS DEMO is a shareware product providing a preview of KARS (TE-19) by way of limited capacity version of the program. $15

KSLAD is a package of dBase III traffic accident analysis programs designed for traffic engineering and safety applications in small to medium sized cities and counties. $17.50

LINKFLO is a set of Lotus 1-2-3 templates used to determine link-to-link relationships between upstream and downstream traffic flows when using TRANSYT-7F. $12.50

MAXBAND-PC generates optimum signal timing patters for up to 20 signalized intersections along an arterial street. $25

PASSER-II-84 optimizes the timing of coordinated traffic signals along arterial roads to maximize progression band widths in both directions. $12.50

PROGO is a progression graphics and optimization tool. $250

SNAG can help produce effective signal timing plans. $250

SIGOP-III is a macroscopic signal timing design and analysis model coordinating signal systems. $22.50

SOAP84. Rel 2. The function of this software is for the development and assessment of timing plans for isolated intersections. $35

SPEED SURVEY is a menu-driven spot engineering and traffic survey program with full editing capability. $20

SPEEDPLOT data collection and analysis system. Speed study data are processed and analyzed, providing all standard speed analysis measures. $10

FHWA has released a major new version of the NETSIM traffic simulation program. $307.50

TRANSYT-7F is a program used to assist traffic engineers in developing optimal plans for coordinated signal systems. $210

This two-volume report from FHWA is titled Progression Through A Series of Intersections with Traffic Actuated Controllers and presents a set of guidelines and procedures. $22.50

WARRANTS/TMC15 is a VisiCalc template for use in analyzing and collating turning movement volumes and approach volumes for signal warrant studies. $12.50

SIGNS^2/^3 is a traffic sign inventory program written for use with dBase II or III. $17.50

SST is a menu driven, dBase II program that demonstrates an approach to automating the reservation and reporting functions essential to the operation of a small specialized (elderly/handicapped) transit property. $15

We now have the updated SST program for dBase III/III+. $17.50

Needs Inventory Software (NIS) is a program intended for maintaining an inventory of road and bridge segments.
NIS $25

ANALYZER is a BASIC program designed to assist in the development of traffic control plans for road and street construction and maintenance areas.
ANALYZER $5

Arterial Analysis Package (PC-AAP), Release 3 combines three of the most popular traffic signal timing models: SOAF84, PASSER II-84, and TRANSYT-7F into a single package.
AAP3 $125

ATC (Automated Traffic Count Program) is a BASIC program which transfers traffic count data from a paper tape reader to an IBM PC and prints average daily traffic volumes.
ATC $25

AVEMIN (Street Light Calculation Program) is a program which uses a stored library of photometric curves to calculate the light levels on a street for a given layout.
AVEMIN $25

BARGUID2 is a menu driven, BASIC program which follows the 1977 AASHTO Guide for selecting, locating and designing traffic barriers.
BARGUID $5

BTS III (Berkeley Transportation System) is a package of 13 different programs that provide inventory and maintenance management capabilities in the following areas: signs, markings, roads, lighting and traffic signals.
BTS3 $200

CINCH is a capacity analysis program that applies methods outlined in Chapters 9 and 10 of the 1985 Highway Capacity Manual.
CINCH $25

CIRCAP is a microcomputerized Capacity Analysis for Rotary Intersections based on research in both the United States and Great Britain.
CIRCAP $25

COUNTS PC is a program to store and reduce traffic count data and provide signal warrants analysis as per the Manual on Uniform Traffic Control Devices.
COUNTS $25

DELAY is a Lotus 1-2-3 application which calculates delay, time to return to normal flow and queue length resulting from incidents on urban freeways.
DELAY $25

EZ-POSTIT (Program for Optimizing Signalized Intersection Timing) will evaluate existing, or optimize signal timing at an isolated intersection.
EZPOSIT $25

FAZWEAVE is an interactive microcomputer program for analysis and design of weaving areas.
FAZWEAVE $25

FREWAY (Freeway Delay Calculation Program) estimates annual impacts of urban freeway congestion in terms of congested travel, motorist delay and excess fuel consumption due to recurring congestion (caused by specific geometric deficiencies and heavy traffic); and motorist delay due to non-recurring congestion (caused by disablements and accidents).

FREWAY $25

FREWAY/SIGNAL-FREWAY calculates the effects of freeway lane closures.
FWYSIG $25

FRIOP (The Freeway Interchange Optimization Model) is a simple, yet powerful tool to design or improve the operational configurations of freeway interchanges.
FRIOP $75

Highway Capacity Software (HCS) is the complete implementation of the 1985 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209 included on this four disk set for IBM PC/MS-DOS computers.
HCS $150

LINKFLO and INTCAP were contributed by Warren Tighe of DKS Associates, Oakland, CA.
LINKFLO $25

Left Turn Analysis Package (LTAP) is an interactive program for calculating bay length and left turn capacity with and without a bay.
LTAP $25

MARKII is a menu driven BASIC program for pavement marking comparisons.
MARKII $5

MAXBAND is a mainframe signal timing optimization program.
MAXBAND.D $20

PASSER II-84 is a signal timing program for maximizing bandwidth on arterial highways.
P284 $40

PASSER II-87 is a major enhancement to the popular PASSER II model.
P287 $40

PASSER III-88 is designed to assist transportation engineering professionals in analyzing pretimed or traffic-responsive, fixed sequence signalized diamond interchanges.
P388 $40

PCSPEED analyzes data from radar speed surveys. Given the number of observations of each speed, the program will calculate 50th, 85th, 90th and 95th percentile speeds, along with 10 mph pace ranges and percentages.
PCSPEED $5

QUEWZ is designed to evaluate freeway work zones but can be used for other highway types.
QUEWZ $5

SICA (Signalized Intersection Capacity Analysis) analyzes signalized intersections to determine average stopped delay per vehicle and level of service.
SICA $25

SIGCAP (SIGnalized Intersection CAPacity program) analyzes the level of service for a signalized intersection.
SIGCAP $25

SIGNS^3 enables the user to computerize traffic sign inventories.
SIGNS $25

SIGN SPACING calculates the horizontal sign letter spacing for Series C,B, D, E, and F modified letters and numerals.
SIGNSPAC $25

SIGOP III is a macroscopic signal timing design and analysis model for coordinated signal systems.
SIGOP $25

SIGPAK (Signal Utility Package) is a collection of traffic signal timing utilities.
SIGPAK $25

SOAP84 develops and assesses timing plans for isolated intersections.
SOAP $50

SPEED computes statistical information and draws the normal distribution and cumulative frequency graphs for a spot speed study.
SPEED $25

SPEEDPLOT is a menu driven, interactive program for filing, processing and analyzing spot speed measurement of data.
SPEEDPLOT $25

SPEED SURVEY ^2 is an engineering and traffic survey program which allows a wide variety of graph outputs of a speed study.
SPEEDSURVE $25

TAPM is a collection of three models for calculating the effects on traffic of bus stop spacing, isolated intersection signal setting, and bus signal preemption.
TAPM $30

TEXAS Model for Intersection Traffic can be used in evaluating the operational effects of various traffic demands, types of traffic control and/or geometric configurations at individual intersections.
TEXAS $50

TRAF-NETSIM™ is a simulation model which allows the traffic engineer to evaluate a variety of proposed operational improvements prior to implementing the changes in the field.
TRAFNET.P $275

TRANSYT-7F (Release 6) is a traffic signal timing optimization program.
T7F6 $175

The TRANSYT-7F Self-Study Guide (T7FSSG) is a comprehensive self study course designed to teach the fundamentals of conducting a signal timing optimization project using the TRANSY-7F program.
T7FSSG $50

Transportation Management System (TSM) works hand in hand with NCHRO 263 and is a simplified procedure for Evaluating Low-Cost TSM projects.

TSM $40

TURNFLOW is a Lotus 1-2-3, Release 2 template that takes approach volumes as input to specified cells in the spreadsheet and estimates turning movement volumes through various macros.
TURNFLOW $25

UNSIG10 (UNSIGnalized Intersection Capacity Analysis Program) determines the LOS at stop or yield controlled intersections.
UNSIG $25

URBAN TRANSPORTATION PLANNING SOFTWARE

HALLEY set of Lotus 1-2-3 templates contains a life expectancy table, age-structure model, and a population projection program to produce a ten-year population projection. $17.50

MODE CHOICE Lotus 1-2-3 spreadsheet provides a technique for estimation of travel modes for work trips. $10

QRS II GENERAL NETWORK EDITOR 2.6, GNE 26. is an enhanced version of the network editor included with the QRS II package. $95

QUICK RESPONSE SYSTEM II is a program for forecasting the impacts of urban developments on highway traffic and the impacts of highway projects on travel patterns. $195

ROADWAY/INTERSECTION AIR QUALITY Lotus spreadsheet templates are for analyzing air quality impacts of alternative roadway and intersection designs. $17.50

RTD PIVOT POINT LOGIT MODEL, this SuperCalc 3 template is designed to predict changes in transit ridership resulting from changes in transit fares or level of services. $12.50

SIMPLIFIED PROJECT FORECASTING MODEL is a simplified travel demand forecasting system which captures the impact of changes in land use and the transportation network, and produces a growth factor to be applied to a base traffic volume estimate. $27.50

SIPA: 1985 HCM SIGNALIZED INTERSECTION PLANNING ANALYSIS, supplemental program for use with FHWA Highway Capacity Software (HCS). $95

BUSRIDGE3 spreadsheet template organizes and processes route segment ridership, mileage and bus trip schedule information into reports by route direction. $10

CHAPEL HILL SCHEDULER is a transit schedule writing and editing program which allows transit schedulers to build, edit and print bus timetables. $17.50

COST ALLOCATION APPLICATIONS is a set of three separate applications as collected by the TIME Support Center. $15

DEL. The Disaggregate Elasticity (DEL) Model is a simple, quick-response fare revenue forecasting tool for transit planners. $20

LANTA PARTS INVENTORY is a set of dBase II programs designed to maintain and operate a parts inventory system for bus transit operators. $20

MUTD Applications disk contains three programs developed for the Missoula (MT) Urban Transportation District. $12.50

SPREADSHEET APPLICATIONS I disk contains four applications for mass transit operations. $10

TRANSIT APPLICATIONS disk contains four Lotus 1-2-3 templates for transit. $10

ART-ALL is a Lotus 1-2-3 template replicating the procedures from Chapter 11 of the 1985 HCM.
ARTALL $25

HALLEY is a population projection spreadsheet which uses Lotus 1-2-3 and has been updated to Version 3.2.
HALLEY $25

Intersection Analysis Spreadsheets is a collection of three Lotus 1-2-3 templates for analyzing intersection data from a planning perspective.
IAS $25

MicroTRIMS is the microcomputer version of TRIMS, which has been in use at the Metropolitan Washington Council of Governments (MWCOG) for the past ten years.
MCTRIMS $40

MODE CHOICE is a work trip mode choice estimation template providing a worksheet-based technique for the estimation of travel modes for work trips.
MODE $25

A Self-Instructing Course in Disaggregate Mode Choice Modeling includes a text, solved examples, problems for readers to solve, and solutions to the problems.
CALIB $45

Planning Level Analysis implements the "planning level" analysis in the 1985 Highway Capacity Manual.
PLA $25

Planning and Project Development Spreadsheets are macro-driven templates in a Lotus 1-2-3 environment.
PPDS $25

RAQ/1AQ (Roadway/Intersection Air Quality) are spreadsheet templates for predicting vehicular emmissions (carbon momoxide,
hydrocarbons and nitrogen oxides on roadways or at intersections.

RAQIAQ $25

RTD Pivot Point Logit Model (RTD Logit Model) is a SuperCalc 3™ template designed to predict changes in transit ridership resulting from changes in transit fares or level of service.

RTD $25

SITE is a series of Lotus 1-2-3 spreadsheet templates is designed for use in analyzing impact of the site development on adjacent traffic levels.
SITE $25

SPF (Simplified Project Forecasting Model) is a simplifed travel demand forecasting system which captures the impact of changes in land use and in transportation network to produce a growth factor for a base year traffic count.
SPF $25

URPDB is a fully menu driven program developed by Beeah, that is useful for processing survey data with entry, sorting and searching records, converting files, single frequency and bivariate frequency tabulation, calculation of statistcal indicators, curve fitting, coding of uncoded data and decoding of coded data.
URPDB $35

Transportation Data Cruncher (TDC) is a PC based software package that performs functions similar to the mainframe UTPS programs: UMATRIX, MBUILD, UMCON and USQUEX.
TDC $5

TNAS2 (Transportation Network Analysis System, 2) is a system for analyzing data describing the characteristics of a transportation system (urban area, corridor, etc.) and the travel demands there on.
TNAS $25

UCB Planning Level Analyses (UCBPLA) is a series of level of service (planning method) programs which promot for all input data.
UCBPLA $5

APPENDIX C

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APPENDIX D

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