

Highway Capacity Software for Windows 95/NT

HCS Moves to Windows The Highway Capacity Software (HCS) is being completely rebuilt as a Windows 95/NT application. The familiar easy installation (and uninstall) and graphic interface will provide an effective tool for capacity analysis. As in past releases, this version will be completely faithful to the procedures prescribed in the Highway Capacity Manual (HCM), but offer much more flexible data entry and very comprehensive on-line help. All modules will be accessible from the main menu with the capability of having several modules and/or data files open simultaneously.

TRANSYT-7F, Release 8 is now available

Perform Optimization Under Congested Conditions:

- Explicit modeling of saturated and spillback conditions
- Horizontal queuing for better travel time and queue delay estimates
- Multi-cycle and multi-period simulations

Includes Windows 95/NT Interface for Release 8 coming this Summer:

- Functionally replaces McT7F and T7FDIM (input editor)
- Will be sent to all release 8 users automatically when ready.

For more information, see Page 7 or contact [McTrans](#).

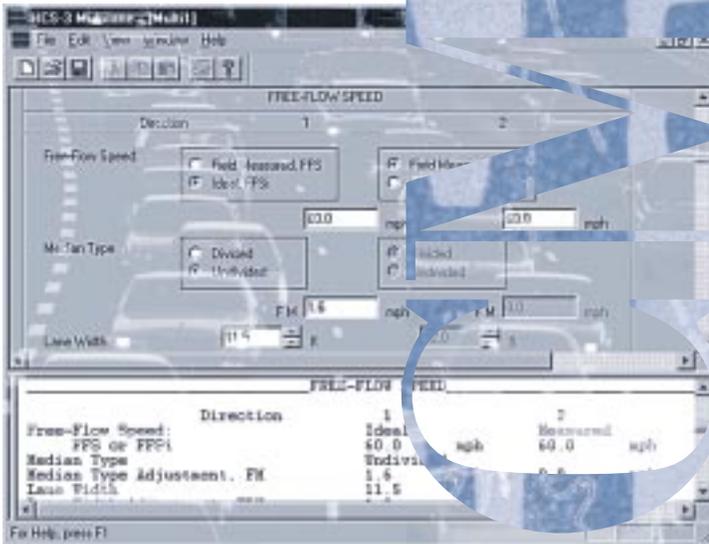
TSIS^{4.2}

TSIS, The Traffic Software Integrated System by FHWA is now updated to Version 4.2. This is a significant update and provides several enhancements in addition to some maintenance corrections. Current users are automatically updated. See the Updates Section of this issue for details.

Modeling Oversaturated Conditions in TRANSYT-7F Release 8	3
New Products	4
Updated Products	6
Announcement	8
Products Listing	20
Calendar of Events	32

McByte





This new version (HCS-3) incorporates standard Windows functionality which adds several new practical capabilities for users. A major enhancement that is immediately apparent is the dynamic output pane available beneath the input screen. As data are entered, computations are reflected in both the input pane and the output pane, provided as a split screen view. The output pane is formatted exactly as the printed document will appear with the capability to 冥3 to cut-and-paste any portion for easy transfer to other documents or programs.

Many fields have alternate data entry tools, such as radio buttons, spinners and combination boxes, to provide for the most efficient means of coding. Context-sensitive help is available for all accessible fields and provides explanations for the data to be coded, defaults and range limits, as well as specific HCM references to tables, figures, equations and text relative to the information being entered.

Implements Procedures in 1997 HCM Update

This release of HCS-3 implements the procedures in the 1997 update to the HCM. HCS-3 contains modules that implement the procedures defined in all chapters (except Chapter 14 on Bicycles) of the HCM, including completely replaced procedures for HCM Chapter 3 (Basic Freeway Sections), Chapter 4 (Weaving Areas), Chapter 9 (Signalized Intersections), Chapter 10 (Unsignalized Intersections) and Chapter 11 (Arterial Streets), as well as changes to Chapter 5 (Ramps and Ramp Junctions) and Chapter 7 (Multil perched Highways).

The update to the HCM is due to be published in June 1998, by the Transportation Research Board (TRB). Software development has used the draft HCM chapters provided through extraordinary cooperation from TRB. Our schedule is to release HCS-3 as soon as practical after final HCM information can be incorporated into the software.

Give HCS-3 a Try!

In our efforts to provide the most effective and user-friendly interface possible, we have provided one module, HCS-Multane, for downloading from our web site as a public preview. Please visit the following web site to download the Multilane Preview and give it a try.

<http://www-mctrans.ce.ufl.edu/mctrans/hcs3.htm>

After trial analyses, please forward comments and suggestions to us at mctrans@ce.ufl.edu. Thank you in advance for your contribution toward making HCS-3 the best capacity analysis application it can be.

Announcement

McTrans presents Bilky Capacity Analysis Workshop

at the University of Michigan Media Union, Ann Arbor, MI

Procedures for the 1997 Update to the Highway Capacity Manual with hands-on workshops using Highway Capacity Software (HCS-3 for Windows 95/NT)

August 5-7, 1998

co-sponsored by
Technology Transfer Center, University of Florida
and
Great Lakes Center for Truck and Transit Research,
University of Michigan

prior to the ITE Annual Meeting August 9-12 (Just a short drive to Toronto)

Registration Fee:

\$295 by July 17, 19 冥3

\$345 by August 3, 1998

Contact Linda Floyd:

(352) 392-2371 (ext.224)

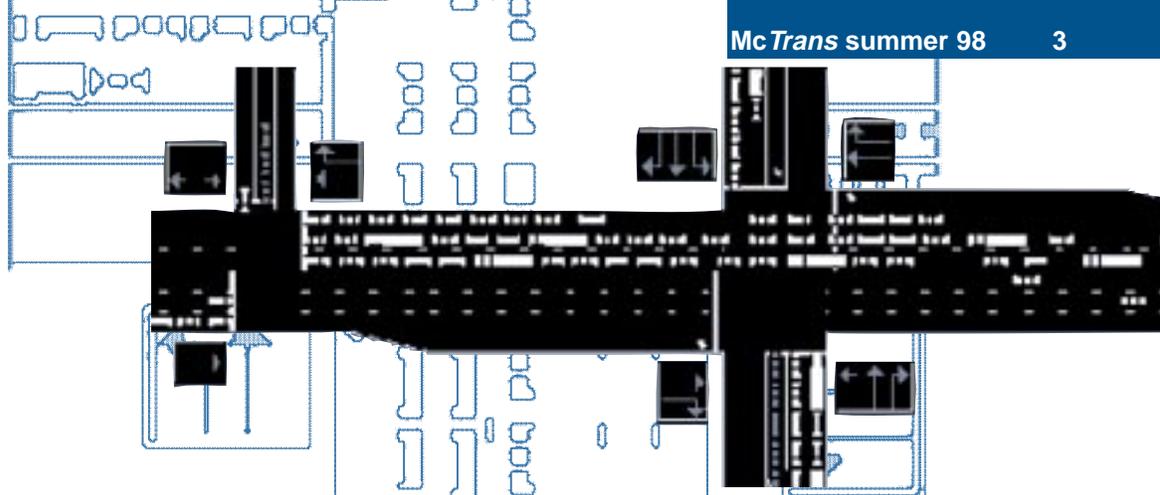
(352) 392-3224 (fax)

Announcement

FHWA Needs Your Help

The Federal Highway Administration (FHWA) is designing a multimedia demonstration project to increase awareness of transportation modeling software among administrators, engineers and planners. The project, entitled Traffic and Transportation Models Demonstration Project No. 114 (DP114), will demonstrate modeling software and provide a brief overview of each program 冥3 features. FHWA is currently seeking volunteers to participate in the design of the project. If you are interested, please visit the project website at: <http://www.dp114.net/> or request a survey form to be faxed to you from McTrans if you do not have Internet access.

Stay Informed Would you like direct delivery of important announcements from McTrans? Just e-mail us with your name, e-mail address and member number and we will keep you informed electronically of is relevant news and announcements. Please e-mail Lee at: mctinfo@ce.ufl.edu



Modeling Oversaturated Conditions in TRANSYT-7F Release 8

by Min-Tang Li, University of Florida

In our previous newsletter (Fall, 1997), we described the general new features available in TRANSYT-7F release 8. In this article, we illustrate the kind of spillback effects that can now be modeled in release 8. New objective functions that are specially designed to treat spillback conditions are also introduced.

Simulation Process

The most significant improvement in release 8 is that it allows modeling of networks with oversaturated traffic conditions. Although release 7 accepted networks with these conditions, it did not model them realistically. This is because the simulation process applied in release 7 was not structured in such a way that spillback conditions could be explicitly considered. Release 8 completely restructures the simulation process to address these issues by changing from a link-wise approach to a step-wise approach.

In the link-wise approach, the simulation of the network begins at a specific link, completes all time steps and then proceeds to the next link in turn until all links in the network are simulated. This simulation approach does not allow the effect of spillback occurring over time to pass from one link to another. To remedy this, release 8 introduces a step-wise approach that allows the simulation to proceed through the complete network for every simulation time step. With this approach, the spillback effect is passed from one link to another over time. An analogy is to imagine all links lined end-to-end in release 7, to release 8, which resembles a bowling alley with all links being simulated in parallel,

with all link-specific interactions being more realistically modeled. In general, execution times for release 8 will be longer than those of release 7, especially for large networks, because of the need to use dynamic allocation of memory to accommodate the memory-intensive nature of the step-wise simulation.

Spillback Effects

Release 8 explicitly considers the following two types of spillback effects:

- The saturation flow rate of the thru link is reduced due to blocking by spillover from the adjacent right- or left-turn bay. This is illustrated in the TRAFVU (ITT Systems and Sciences Corporation, Colorado Springs) display above, in which the northbound left-turning traffic (shown in light blue) spills over and blocks the thru traffic (shown in white). To explicitly consider this spillback effect, release 8 allows the user specify a percentage of reduction to the saturation flow rate for the thru-lane group. Release 7 assumes no saturation flow rate is reduced due to this spillback effect.
- The saturation flow rates of the feeding links are reduced due to spillback at the current link. This is again illustrated in Figure 1 in which the westbound traffic between the two intersections spills back to upstream link. Consequently, the southbound right-turning traffic, northbound left-turning traffic and the westbound thru traffic of the upstream links cannot enter the downstream link. In this case, the saturation flow of these turning

flows will be significantly reduced. Again, release 8 allows the user to specify saturation flow rate reductions to the upstream links.

Objective Functions for Oversaturated Conditions

TRANSYT-7F optimizes phase lengths and offsets based on an objective function called the performance index (PI). Release 7 included four types of PI defined by disutility index (DI) and/or progression opportunities (PROS). These objective functions were not be suitable for optimization of oversaturated networks. Release 8 introduces four additional objective functions that are based on traffic throughput and queuing measures. The "throughput measure" is a ratio defined as the link vehicle departures over link vehicle arrivals. The "queuing measure" is also a ratio and is defined as the average back of queue on a link divided by the maximum number of vehicles that can be accommodated on the link. The idea behind including these measures is to emphasize traffic throughput and queue management to help links with spillback conditions. The new objective functions are:

- minimizing the product of DI and queuing ratio,
- maximizing the ratio of throughput ratio to DI,
- maximizing the throughput ratio and then minimizing DI without reducing the throughput ratio, and
- maximizing the throughput ratio with a penalty imposed if a maximum v/c ratio threshold is exceeded.

Optimization for Oversaturated Conditions

The following steps may be applied to select the best control strategy for an oversaturated traffic system.

First, the critical link(s) and the type of oversaturated conditions exist in the system need to be identified. A critical link is defined as the most downstream link on a continuous, upstream-downstream list of oversaturated links. The level of congestion in the system as well as the critical links can be determined by performing a TRANSYT-7F optimization run based on minimizing the DI (e.g., excess fuel consumption) with the step-wise simulation. If the system is still found to be congested with the optimal timing, the step-wise simulation with optimization of the DI plus queuing penalty on the links with queue problems should be applied.

Second, if the above process is unable to eliminate the congestion problem, the new objective functions with or without the queuing penalty can be tried. The critical links for which the throughput (or the queuing ratio) is to be optimized should be specified for optimization.

In short, TRANSYT-7F is now a more complete signal timing and traffic analysis tool. It now more realistically examines saturated conditions in addition to its historical modeling of undersaturated conditions.

Reference

Wallace, C. E., K.G. Courage, M.A. Hadi and A. Gan, "M[O]S[T] Volume 4: TRANSYT-7F Users Guide," Transportation Research Center, University of Florida, Gainesville, March 1998.

BASINOPT

BASINOPT minimizes detention basin volume and surface area using a one-of-a-kind hydraulic routing optimization technique. Eliminate inefficient trial-and-error design approaches, and minimize excavation and real estate costs in the process. BASINOPT allows you to specify the maximum allowable outflow from the pond and a maximum allowable water surface elevation for up to six inflow hydrographs simultaneously, then uses "smart" technology to design the pond contours, structure dimensions, and inverts to satisfy your design criteria. BASINOPT is part of the Computer-Aided Hydrology & Hydraulics (CAHH) program series for Windows (3.1x, 95, NT), and has robust graphics and input tools to assist you. Vector-based output graphics provide extremely sharp hardcopy output in color or black and white. An extensive Windows context-sensitive help file provides complete documentation with numerous figures and examples. BASINOPT (#BASINOPT) by Akan Paine, Incorporated is available at LOS 7 for \$1,235.

BASINOPT SIMULATION ADD-IN

The BASINOPT SIMULATION ADD-IN extends the functionality of BASINOPT, allowing you to completely specify the outlet structure dimensions and pond geometry (rather than having them designed for you) for up to 10 structures with a user-specified stage-area relationship, or an unlimited number of structures with a completely user-specified stage-area-discharge relationship. The BASINOPT SIMULATION ADD-IN is included in demo form with BASINOPT — the SIMULATION ADD-IN license makes the simulation mode of BASINOPT fully functional. BASINOPT SIMULATION ADD-IN (#SIMULA) by Akan Paine, Incorporated is available at LOS 7 for \$400, and requires BASINOPT.

CAHH DOS Programs

A package of specialized hydrology and hydraulics programs for: statistical frequency analysis, SCS-based rainfall-runoff modeling, detention pond design, open-channel flow profile computations, trapezoidal channel section design and analysis, FHWA HEC-15 computations, and an award-winning time of concentration program. These programs have been reviewed in the McGraw-Hill Handbook of Hydraulics (7th ed., 1996), and are based on technology published in numerous journal papers and conference proceedings.

The CAHH DOS PROGRAMS (#CAHH) by Akan Paine, Incorporated are available at LOS 7 for \$485.

CHANNEL

The CHANNEL program is an open-channel hydraulics design and analysis program. Modules include erodible, non-erodible, flexible (FHWA HEC-15) and channel bend routines. Design optimization capabilities include best hydraulic section and minimal lining cost techniques. The CHANNEL program is part of the Computer-Aided Hydrology & Hydraulics (CAHH) program series for Windows (3.1x, 95, NT), and features robust graphics. The CHANNEL program (#CHANNEL) by Akan Paine, Incorporated is available at LOS 7 for \$585.

Manual for Uniform Traffic Control Devices

Traffic control devices are all signs, markings, and devices placed on, over, or adjacent to a street or highway by authority of a public body or official having jurisdiction to regulate, warn, or guide traffic. The Manual for Uniform Traffic Control Devices (MUTCD.CD) is a unification of standards that is applicable to different classes of roads and street systems. The National Committee on Uniform Traffic control devices updated the 1988 Edition in 1993 which includes revision 3 of Part VI. This product is

available on CD ROM and requires a minimum of MS-DOS version 3.1 or later of Microsoft Windows, 4 MB RAM and a CD ROM driver. The Manual for Uniform Traffic Control Devices (#MUTCD.CD) by Yellow Dog Electronic Publishing, Inc. is available at LOS 6 from **McTrans** for \$145.

RIMS

The RIMS program is a handy utility for highway drainage engineers working with roadway profiles. Computing drainage structure rim elevations is one of the most tedious yet critically important aspects of any drainage design. RIMS makes the calculations simple. The RIMS program is part of the Computer-Aided Hydrology & Hydraulics (CAHH) program series for Windows (3.1x, 95, NT). RIMS (#RIMS) by Akan Paine, Incorporated is available at LOS 7 for \$105.

SIMTRAFFIC

Until now, engineers have avoided performing simulation studies because the modeling software was too difficult and too slow; Trafficware introduces SimTraffic, a program combining the power and detail of microscopic modeling with the speed and ease-of-use found in their Synchro product. With SimTraffic, new users can learn the software and perform complete studies of traffic networks in one day. No cryptic coding cards are required to create simulations. SimTraffic starts animating at the press of a single button. SimTraffic can model almost any network of signalized and unsignalized intersections. The program features quick-change technology that allows many changes to the network to be simulated instantaneously. This allows the engineer to fine tune signal timing and instantly see the animations of the revised timing in operation. SimTraffic models traffic using the driver and vehicle performance characteristics recommended by the Federal Highway Administration

(FHWA) for use in modeling software. Underlying formulas in SimTraffic are based on over 20 years of research for accurate modeling of real-world traffic conditions.

SimTraffic can model multiple timing periods with varying traffic volumes and signal timings. This allows the engineer to model a peak period followed by a normal period to see how the network recovers from congestion; or to model transitioning of signals from one timing plan to another. Traffic volumes can be read from Synchro files, industry standard TMC files, or from UTDF data files. SimTraffic version 1.0 (# TRAFSIM) by Trafficware, is available at LOS 7 for \$585

SpeedPLOT (+)

SpeedPLOT (+) Version 4 was designed by traffic engineers to easily collect and analyze spot speeds, gaps and time interval data. It runs as a stand-alone DOS program or as a DOS application in Windows on any IBM compatible microcomputer system. When operated on a laptop, it allows Laser Tech 20/20 laser equipment to be directly connected to the computer. Laptop operation also allows the laptop to directly collect speed, gap and time interval data (the computer is used as a legal presentation stopwatch). Data can also be manually entered as individual speeds or as groups of collected speeds or interval times. A two file data collection feature has also been added to the program. This feature allows data to be collected for two streams of traffic during one study and saved as separate data files. The program meets all informational requirements for traffic engineering, planning and legal presentation purposes. In addition to speed data, it also provides the same full range of features for gap and time interval data collection and analyses. All study data are listed, metrics calculated, and frequency and "s" curves plotted on each technical report. A

simplified administrative report is also available. Reports are generated on any printer that supports the Epson printer character set or the HP Laserjet character set.

The program includes a simple but powerful file management and reporting system. Each data file is based on a filename and a street (or project) name. All studies are then added to the basic data file description by specifying a segment name and a direction.

SpeedPLOT (+) (#SPLOTPL)

Version 4, by Traffic Studies is available at LOS 6 for \$200.

Traffic Noise Model

The Federal Highway Administration (FHWA) is pleased to announce the release of the Traffic Noise Model, Version 1.0 (FHWATNM). The FHWA TNM is an entirely new, state-of-the-art computer program used for predicting noise impacts in the vicinity of highways. It uses advances in personal computer hardware and software to improve upon the accuracy and ease of modeling highway noise, including the design of effective, cost-efficient highway noise barriers.

The FHWA TNM contains the following components:

- Modeling of five standard vehicle types, including automobiles, medium trucks, heavy trucks, buses, and motorcycles, as well as user-defined vehicles.
- Modeling of both constant-flow and interrupted-flow traffic using a 1994/1995 field-measured database.
- Modeling of the effects of different pavement types, as well as the effects of graded roadways.

- Sound level computations based on a one-third octave-band database and algorithms.
- Graphically-interactive noise barrier design and optimization.
- Attenuation over/through rows of buildings and dense vegetation.
- Multiple diffraction analysis.
- Parallel barrier analysis.
- Contour analysis, including sound level contours, barrier insertion loss contours, and sound-level difference contours.

These components are supported by a scientifically-founded and experimentally-calibrated acoustic computation methodology, as well as an entirely new, and more flexible data base, as compared with that of its predecessor. STAMINA 2.0/OPTIMA. The database is made up of over 6000 individual pass-by events measured at forty sites across the county. It is the primary building block around which the acoustic algorithms are structured. The most visible difference between the FHWA TNM and STAMINA 2.0/OPTIMA, is TNM's Microsoft™ Windows interface. Data input is menu-driven using a digitizer, mouse, and/or keyboard. Users also have the ability to import STAMINA 2.0/OPTIMA files, as well as roadway design files saved in CAD, DXF format. Color graphics will play a central role in both case construction and visual analysis of results.

Computer Requirements

The recommended computer system requirements for TNM Version 1.0 are:

- Computer: IBM-compatible PC;
- Processor: 120 MHz Pentium (or faster);

- Memory: 32 MB (or more);
- Disk Drive: 3.5 inch, 1.44 MB;
- Mouse input device;
- Monitor: Accelerated Super VGA (1024 x 768), 16 colors, configured with "small" fonts;
- Software: Microsoft™ Windows 3.1 (or later): Note: TNM will run under Microsoft™ Windows 95 or Windows NT, however, TNM is a 16-bit program and will not take full advantage of the 32-bit architecture associated with Windows 95 or NT.
- 10 MB of hard-disk space for the TNM system (including sample runs); and
- Up to 1 MB of hard-disk space for each TNM run.

To digitize coordinates from plan sheets and roadway profiles, the following is required:

- Digitizer: Any manufacturer/ model that meets the 1/CS/Telegraphics Wintab Interface Specification, preferably with a 16-button puck. The digitizer manufacturer should provide the file WINTAB.DLL, which must be resident on the hard disk for digitizer use.

Traffic Noise Model (#FHWATNM) version 1.0 is available at LOS 1 for \$695.

Urban Drainage Design Program and Manual

The Urban Drainage Design Program and Manual (HY-22 and HY-22.D) replaces HY-TB Version 1.0 (# HYD-TOOL) and is a comprehensive and practical guide for the design of storm drainage systems associated with transportation facilities. Design guidance is provided for the design of storm drainage systems which collect, convey, and discharge stormwater flowing within and along the highway right-of-way. Methods and procedures are given for the hydraulic design of storm drainage systems. Design methods are presented for evaluating rainfall and runoff magnitude, pavement drainage, gutter flow, inlet design, median and roadside ditch flow, structure design and storm drain piping. Procedures for the design of retention facilities and stormwater pump stations are also presented, along with review of urban water quality practices. A summary of related public domain computer programs is also provided.

The Urban Drainage Design Program (# HY-22) and Manual (#HY-22.D) by the FHWA, is available at LOS 5 for \$5 for the software and \$20 for the manual.

UFITE Transportation Technology Exhibit Wins Top Engineering Fair Awards

The University of Florida student chapter of the Institute of Transportation Engineers (UFITE) won top honors in the overall competition at the 1998 Engineering and Science Fair. More than 20 student engineering organizations took part in this annual event held in February at the University of Florida.

The UFITE exhibit featured an animated graphics simulation of a busy intersection in Gainesville, and a live demonstration of video image detection, together with display material from the Southeastern Transportation Center (STC) and the McTrans software distribution center. The UFITE team took another first place award for integrating this year's theme "Engineering our Dreams for the Future" into their presentation.

The animated graphics displayed by the CORSIM and TRAFVU programs were used to show traffic conditions at one of the busiest intersections in Gainesville, and gave the audience an idea of how traffic controllers function. In another demonstration, an AUTOSCOPE video image detection system processed pictures of miniature cars on a track, showing how video detection can be used for traffic surveillance.

Members of this year's winning team include: Brett Blackadar, Steve Gillis, Jennifer Cato, Daniel Baudino, Webert Lovencin, Dyhan Appachu, Sung-Ryong Han, Soan Chau, Min-Tang Li, Greg Moore, Xisca Frontera, Tim Sapp, Lee-Fang Chow, Randy Showers, Jin-Tae Kim, Ana-Maria Elias and Leslie Myers.

Updated Products

Days Off Calculator

Days Off Calculator has been updated to version 3.0 for DOS and version 2.0 for Windows. Most reporting functions have been removed from the calculator and placed in its new companion program, the Days Off Reporter. The calculator now includes a command to save its results to a solution file – a new type of report. To generate other types of reports:

- Use the calculator to generate a solution file.
- Start the reporter and open the solution file into the reporter.

Solution files are plain text files that can be viewed and edited by any text editor (such as Windows Notepad or the DOS Editor) or word processor. Because of this there are no longer limits to generating reports based on the calculator's results. Now, reports can reflect your own preferences. Because solution files are in a standardized format, you can also write spreadsheet macros that use them to generate custom reports.

Here are some more improvements in the new versions:

- Most reports can be saved in HTML format, suitable for posting on the World Wide Web.
 - The calculator now supports any workweek length - 0 to 7 days.
 - You can now save your report formatting choices to a report format file, then restore the file whenever you wish to do another report with the same choices.
 - CSV reports can now include name list entries of any length. Signup reports can now include name list entries of up to 64 characters.
 - There is now one .INI file with initialization settings for all programs.
- Days Off Calculator (#DAYS) by David Grant is available at LOS 4 for \$5.

ICAHD, Version 3.0 (for AutoCAD)

Interactive Computer Assisted Highway Design

ICAHD is a comprehensive, user-friendly, highway design program developed by Pro-West & Associates, Inc. for both English and Metric design. Menu-Driven operations with instructions and graphic displays guide the user through the processing of field data, design of alignments, cross-section, and profiles, earthwork calculations and plotting cross-sections. Features include individual cross-section alteration, superelevated curve calculations, AASHTO stan-

dards and numerous printouts.

Documentation includes a self-instructional, example, highway design project. ICAHD is intended for rural highway design and numerous other civil engineering applications such as trapezoidal channels, drainage ditches, earth dams, bridge approach fills, airfields, landfills and more.

ICAHD, Version 3.0 includes the ICAHD Urban Design Module which allows for the design of urban streets and highways as well as numerous other civil engineering applications requiring diverse cross-sections. This module uses tangent and slope ratio vectors to develop typical sections. Construction and profile information can be directly imported from ICAHD into AutoCAD for additional detailing and design.

Computer Assisted Highway Design (#ICAHD) by Proper Engineering, Inc., is available at LOS 7 for \$2,500.

SIDRA 5.1 for Windows

SIDRA 5.1 for Windows is the latest upgrade version of SIDRA for Windows, which has been designed to run under Microsoft Windows 3.1, Windows 95 and Windows NT. The main SIDRA program, computational modules, text output display and configuration modules run as full Windows products. The graphic-based input and output modules RIDES and GOSID are used as DOS applications with all file management functions looked after by the main SIDRA Windows program.

New features of SIDRA 5.1 include the following:

- Runs under Microsoft Windows NT, Windows 95 and 3.1 operating systems.
- New look SIDRA running method.
- New Windows-style Graphs utility to display variable cycle time and flow speed graphs.
- Enhanced method for roundabouts including the calculation of the intra-bunch headway for three-lane circulating roads, intra-bunch headway adjustment for multi-lane streams with unequal lane flows, and the use of extra bunching data for the effect of upstream signals.
- Enhanced method for actuated signals including coordinated actuated and isolated semi-actuated signal models with user specified cycle time, maximum cycle time, cycle time optimization, and green split priority allowed.
- ICU method (USA) for Level of Service
- Enhancements to library files, and new library files for the New Zealand and US Metric versions.
- Cost model parameters updated - Improved handling of opposed turn data for traffic signals.
- Green split priority specification for coordinated movements in a simple way.
- More flexible input data ranges for various signal timing parameters, basic saturation flows and volumes (all non-zero volumes acceptable).
- Various enhancements to SIDRA output tables
- Fully revised User Guide and a new supplementary report on Roundabouts (ARR No. 321)

Synchro Version 3.2

Trafficware introduces Synchro Version 3.2 for Windows NT/95. This upgraded software program features many time savers that Traffic Engineers asked for in a Traffic Signal Program. Many of the optimization schemes and reports are improved to handle even the most demanding of traffic signal networks.

New features give Synchro 3.2 Professional the power to manage large projects and work around the limitations of the other software. Synchro can import AutoCAD DXF files for a map background. Synchro Professional shares data seamlessly with TRANSYT-7F, CORSIM, PASSER 2, and the HCS. Over 400 agencies and consultants use Synchro worldwide.

Synchro 3.2 features an improved cycle length optimization allowing the traffic engineer to compare 8 Measures of Effectiveness (MOE) for each cycle length. Unlike other signal timing software, Synchro can recommend intersections to be uncoordinated, half-cycled, or double-cycled to improve operation.

New Dilemma Zone MOE analyzes the safety of timing plans and can be used to show that coordinated timing plans improve the safety of the signals. A new Queuing Penalty MOE quantifies the affects of queuing and blocking. The Queuing Penalty can be used to analyze timing plans for congested areas where traditional analysis methods break down. Synchro 3.2 also features MOEs for delays, stops, queue length, fuel consumption,

exhaust emissions, arterial speed, and arterial travel time.

Synchro, Version 3.2 (#SYNPRO) by Trafficware is available at LOS 7 for \$1,095. The Light version (#SYNCLT) is available for \$585, and the Professional version (SYNCPRO) is available for \$1,695.

Trip Generation

Trip Generation Version 4 by Microtrans is used to analyze traffic generated from 135 land uses or building types based on more than 3,750 individual trip generation studies. Version 4 includes the entire data base from the Sixth Edition of the Trip Generation Report by the Institute of Transportation Engineers, 1997. The software is easy to use, allowing comprehensive analysis of traffic generation for traffic impact analyses, transportation corridor analyses, traffic circulation systems, quick response planning techniques and environmental impact statements.

Version 4 is designed to give users a variety of options for greater flexibility when analyzing single and/or mixed-use projects with either the ITE rates or equations or by using your own rates. A special feature allows trip adjustment factors to be added for each type of trip so analyses can be customized to fit specific conditions. There is a variety of printouts to choose from, depending on the level of detail that is desired. Or, results can be imported into DOS-based word processors or spreadsheets. The WINDOWS version can be imported into WORD and EXCEL.

The DOS version is menu-driven with a detailed user's guide simulating a step-by-step operation. The WINDOWS version (available in February 1998) is a more interactive approach with onscreen help and pull-down menus for easy software usage. Both versions have been designed to give the user a wide choice of options. Trip Generation is used extensively by departments of transportation and other government agencies and private users ranging from sole practitioners to multi-national firms. Technical support is available. Trip Generation (#TRIPGEN) by Microtrans Inc. is available at LOS 7 for \$400.

TSIS Version 4.2

The Traffic Software Integrated System (TSIS) has been updated to version 4.2. This is a significant update and provides several enhancements in addition to some maintenance corrections.

The maximum network size has been increased to include more links, nodes and vehicles. Improvements have also been made to make NETSIM and FRESIM logic more consistent within CORSIM.

New records 172 and 173 have been added to CORSIM so NETSIM and FRESIM have the same acceleration and environmental tables. This change deleted record types 60, 72, 73 and part of 58. A utility program is provided that updates obsolete input files to facilitate this conversion. The vehicle types and fleet types are now consistent between NETSIM and

FRESIM, replacing the previous vehicle emission logic with an improved system. Improvements have been made to the vehicle lane changing logic in both FRESIM and NETSIM. FRESIM vehicles that miss their destinations are now re-routed to the next downstream exit instead of being eliminated. The logic that moves vehicles across network boundaries was replaced and

the resulting vehicle movement is more realistic. Turning vehicles now have the tendency to turn into the appropriate lane based on their next two downstream turn movements. FRESIM vehicle movement logic was improved and calibration parameters were added to allow the user to replicate field conditions. Cooperative FRESIM drivers on a freeway main line will now slow down to yield to a

from multiple sites. Multiple phase analysis is also supported with an "incremental save" feature. The new features for Release 2.0 include but are not limited to the following:

Update Watch				
Package	Version	Status	Target	Distribution
HCS	2.1f	Complete	Available	Patch File
HCS-3	3.1	Under development	Summer	Registered users may upgrade
TRANSYT-7F	8.1	Complete	Available	Registered users may upgrade
TSIS (Corsim)	4.2	Complete	Available	Automatic to registered users
TRANSYT-7F	Win	Under development	Summer	Automatic to registered users

Transyt-7F Release 8 Is Now Available

In cooperation with the Federal Highway Administration and PB Farradyne Inc., the Transportation Research Center has drastically improved the TRANSYT-7F program. This update, which results in release 8, reflects a number of significant improvements, including:

- Explicit modeling of saturated and spillback conditions: Release 8 proceeds through all links for every time step until all steps are processed. In other words, the traffic conditions of the entire network are updated every time step. This not only permits explicit modeling of realistic spillback effects under saturated conditions, it also allows for the modeling of effects that occur across multiple cycles, the use of different cycle lengths among intersections and the elimination of the need for multiple simulations of permitted movements.
- Use of horizontal queue: Previous TRANSYT models assume queues were stacked "vertically," which is clearly not consistent with real-world situations. In release 8 queues are built "horizontally." This enables intra-link travel time, spillback, stops and queue delay to be estimated more accurately.
- Multi-cycle and multi-period: Simulation has always been performed on a single cycle; thus the effects of traffic conditions from one cycle to another was not explicitly modeled. In release 8, simulation may be based on multiple cycles, allowing the effects between cycles to be modeled explicitly. Release 8

also allows multiple time-period inputs for timing, saturation flow and volume data.

- Optimization under congested conditions: The single-cycle optimization for the previous releases was appropriate for undersaturated conditions but not for saturated conditions. Release 8 includes new strategies for timing under saturated conditions.

Several minor but important features have also been incorporated into release 8, including increased maximum number of time steps allowed to permit optimization to 1-sec resolution, non-integer lost times and change periods, a random-plus-saturation term for stops, and level of service (LOS) added as an explicit output.

A completely new Windows 95/NT interface for release 8 has been developed by Dr. John Leonard. This interface functionally replaces McT7F and T7FDIM (input editor) that came with release 7. (The DOS version of McT7F and T7FDIM will continue to be available for release 8, however.)

There are several new record types, but the input file structure of release 8 is entirely upward compatible. The new T7FDIM for both the DOS and the Windows 95/NT versions will load input files created for and by the previous release.

TRANSYT-7F (MCT7F8) by **McTrans** is available at LOS 1 for \$500. **Version 6 users can save \$150 by upgrading before the end of June.**

stopped vehicle merging from an acceleration lane. FRESIM vehicles will adjust speeds to move toward a gap to improve the chance of making a lane change.

The User's Guide has been substantially modified and users are strongly encouraged to obtain the new edition. Details of the recent enhancements and changes are discussed beginning on Page 4-6 of the CORSIM User's Guide.

Traffic Software Integrated System (#TSIS) version 4.2 by FHWA is available at LOS 1 for \$500.

WinTASS 2.0

WinTASS, from Transportech Corporation, has received a major upgrade, which provides additional features and enhancements. This new version, Release 2.0, is now available. Like Release 1.0, which is in use worldwide by consultants and governmental agencies, WinTASS 2.0 helps transportation professionals estimate the relative impacts of land use changes on nearby roadway networks. It automates the traffic assignment process and provides an intuitive method of distributing site-generated traffic throughout a roadway network, without resorting to complicated modeling software.

WinTASS can accommodate a network with up to 99 intersections and 99 sites. Network size and layout can be changed "on the fly" at any time. WinTASS network definition is flexible enough to handle passer-by trips, "curved" links and shared entrances

Many New Printing Options:

Besides all the printing options available in Release 1.0, you can now print site turning movement volumes per site and direction, total site volumes, growth volumes, and a special combination of existing growth, site and future turning movement volumes per intersection on a single page. All intersections can now be printed either one or four per page

There are also additional tools for estimating site traffic distributions throughout a roadway network, including the ability to automatically estimate inverse distributions per site and direction, and the ability to automatically copy previously-entered site distributions to other sites. WinTASS 2.0 also includes an expanded and revised Users Manual.

WinTASS 2.0 works on current and previous versions of Windows, including Windows 3.1, Windows 95, and Windows NT 4.5 or earlier. Registered users of WinTASS 1.0 can be updated directly from Transportech Corporation for a nominal processing fee.

WinTASS (#WinTASS) Version 2.0 by Transportech Corporation is available at LOS 7 for \$295.

Calendar

Conferences

ITE Annual Meeting

Institute of Transportation Engineers (202) 554-8050

Aug 9-12

Toronto, ONT

Third National Conference on Access Management

Florida Department of Transportation

Robert Krzeminski (850) 922-0430

Oct 4-7

Ft. Lauderdale, FL

American Public Transit Association Annual Meeting

APTA (202) 898-4038

Oct 4-8

New York, NY

Fifth World Congress on Intelligent Transport Systems

ITS America (202) 484-4542

Oct 12-16

Seoul, Korea

Training

Timing Traffic Signals Using TEAPAC, PASSER, TRANSYT and NETSIM/CORSIM

Strong Concepts & University of Wisconsin, 800-462-0876

Jul 15-17

East Lansing, MI

Mastering the Budget Process in Public Works: Effective Preparation & Presentation

University of Wisconsin

Katie Peterson, 800-462-0876

Jul 20-22

Madison, WI

Traffic Signal Workshop

Northwest University Traffic Institute, 800-323-4011

Jul 13-17

Boston, MA

Highway Capacity Analysis Workshop

McTrans (352) 392-2371 ext.224

Aug 5-7

Ann Arbor MI

Advanced CORSIM Training

Viggen Corporation, 800-260-1001

Aug 19-21

Sterling, VA

Introduction to CORSIM Training

Viggen Corporation, 800-260-1001

Aug 24-26

Sterling, VA

Timing Traffic Signals Using TEAPAC, PASSER, TRANSYT and NETSIM/CORSIM

Strong Concepts & University of Wisconsin, 800-462-0876

Sept 14-16

Las Vegas, NE

Advanced TEAPAC Application Techniques

Strong Concepts & University of Wisconsin, 800-462-0876

Sept 17-18

Las Vegas, NE