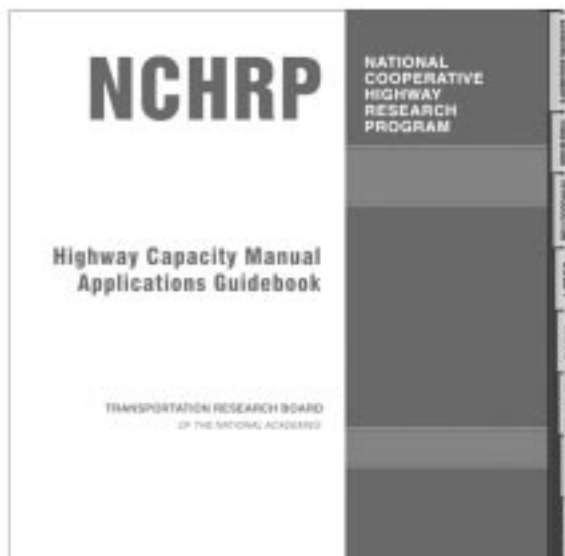


## TRANSYT-7F Release 10 Coming January 2004

TRANSYT-7F release 10 is targeted for an on-time release in January 2004, which will mark the first major upgrade for this package in nearly three years. The latest release arrives with a renewed emphasis on upgraded documentation, graphical output, genetic algorithm optimization, and multi-period modeling. Refer to the TRANSYT-7F web page for a detailed description of program features:

<http://mctrans.ce.ufl.edu/transyt-7f/>

- genetic algorithm optimization
- multi-period optimization
- automatic coding of preset phasing sequences
- time space progression diagram screen
- profile view static graphics
- hardcopy users guide with self-tutorials
- and more (see page 2)



## Highway Capacity Manual Applications Guide

Read about this new resource coming available electronically as a result of a National Highway Cooperative Research Program project. (see page 3)

by Wayne Kittelson

The Highway Capacity Manual has become a much more complex and challenging document for practitioners to effectively apply than was the case when it was first introduced in 1950. To their credit, the authors of HCM2000 have undertaken substantial efforts to facilitate user applications. Even so, the sheer size of the document and the complexity and inter-related nature of the included material causes several fundamental problems to remain:

- 1) Many practitioners have difficulty understanding even basic parameters and how/when to apply them.
- 2) Sample problems take practitioners to the point of completing the calculations, but do not give guidance in interpretation or resolution.
- 3) The issues practitioners often face (what form of intersection control would be most effective?) are not easy to answer under the current format of HCM2000.

## McTrans

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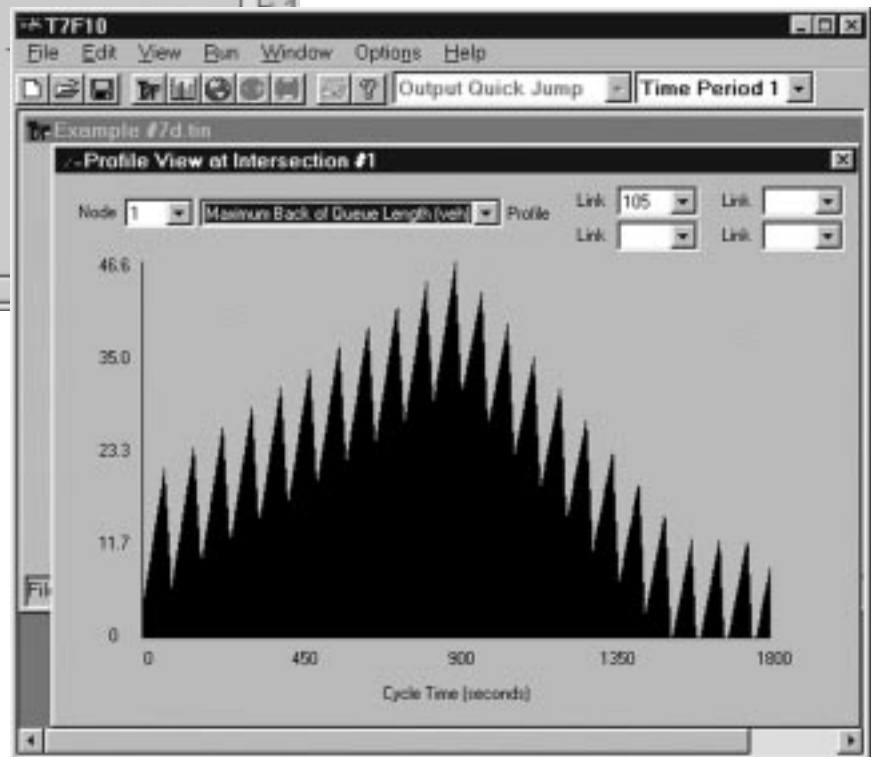
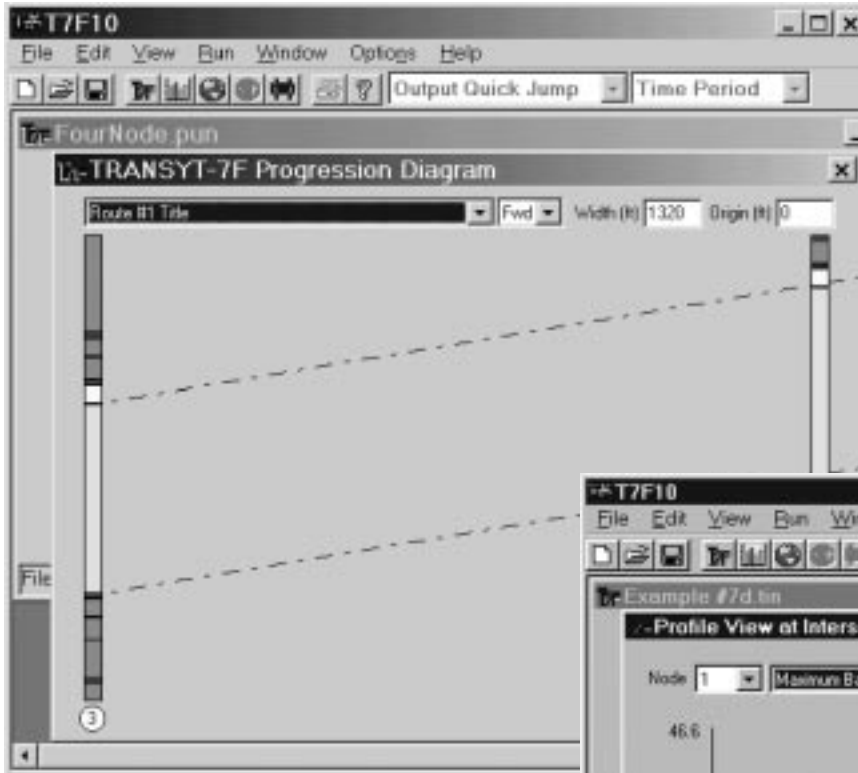
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New Products	4
Did you know?	5
Advertising Directory	6
Products Listing	18
Conference & Training Calendar	24

## TRANSYT-7F Release 10 Features ...

Example of favorable Eastbound progression, as rendered by the Progression Diagram screen



Example of a dissipating residual queue in time period #2, as rendered by the Profile View screen

Registered users of release 9 will be notified by e-mail of special upgrade pricing when the upgrade is ready for distribution. The hardcopy users guide (containing approximately 350 pages) will be sold separately, with documentation identical to that within the electronic Help system.

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# Highway Capacity Manual Applications Guide

(continued)

- 4) No explicit guidance is given on which input parameters are most important to 'get right', and which are less important.
- 5) Many practitioners are not explicitly aware of the limitations of the various HCM procedures, and do not recognize situations where other methods (such as microscopic simulation) would be more appropriate to apply.

Recently, the National Cooperative Highway Research Program (NCHRP) initiated and completed a project aimed at addressing some of these issues. The Highway Capacity Manual Applications Guidebook (HCMAG) is the product of this effort. It is a web-accessible compilation of five real-world case studies that collectively demonstrate how to develop suitable input data sets, identify an appropriate analysis methodology, and then reasonably apply and interpret the results of the selected analysis for a variety of transportation facility types. The HCMAG was designed and written primarily for new and infrequent users of

highway capacity and quality of service analysis procedures, but it contains insights and parametric discussions that will be of use to all practitioners.

This initial edition of the guide focuses on the facility types most commonly encountered by current users of the Highway Capacity Manual. Through user surveys, these were determined to include signalized intersections, unsignalized intersections, urban streets, two-lane highways, and freeways. Even while these are the focus of individual problems contained in the HCMAG, the real-world nature of the five case studies means that each problem also addresses the inevitable interactions among multiple facility types as well as multimodal considerations.

Altogether, a total of 25 problems and 73 separate analyses are contained within the five case studies that make up the HCMAG. The case studies are presented within a comprehensive navigation system that allows practitioners to easily access the information that happens to be of particular interest to them at the time. Each case study is presented as a

separate chapter, so practitioners can also follow a case study through from beginning to end in order to more fully understand the system considerations that must accompany any analysis relating to capacity and quality of service characteristics associated with a particular facility. Each case study chapter is organized to include an overview of the case study, an introduction to the issues that will be addressed, a "getting started" section that sets the stage for the problems that follow, a set of two to six problems that require one or more separate analyses, and a summary analysis of the key points made within the case study. Each case study also includes a navigable index, downloadable datasets (in XML format), and key word search capabilities.

The HCMAG is designed for use with any standard web browser, and in this mode it takes advantage of hyperlinks, navigation bars, and pop-up windows to make information readily available to the reader. The reader can print a hardcopy version of each chapter for use in off-line environments. Similarly,

a CD-ROM version of the HCMAG is also available for use on computers where there is no on-line access to the internet.

Instruction templates that incorporate the HCMAG into discussions of highway capacity analysis will be available on or about the end of the first quarter in 2004. These materials will be presented in both PowerPoint and outline formats, and are designed to facilitate the integration of the HCMAG into college-level classes and training seminars on highway capacity analysis.

The HCMAG is an important companion document to the HCM. It should aid in the understanding and performance levels of students, entry-level analysts, and infrequent HCM users. Through use of real-world case studies, the HCMAG also demonstrates and encourages system-wide thinking across multiple types of facilities and modes.

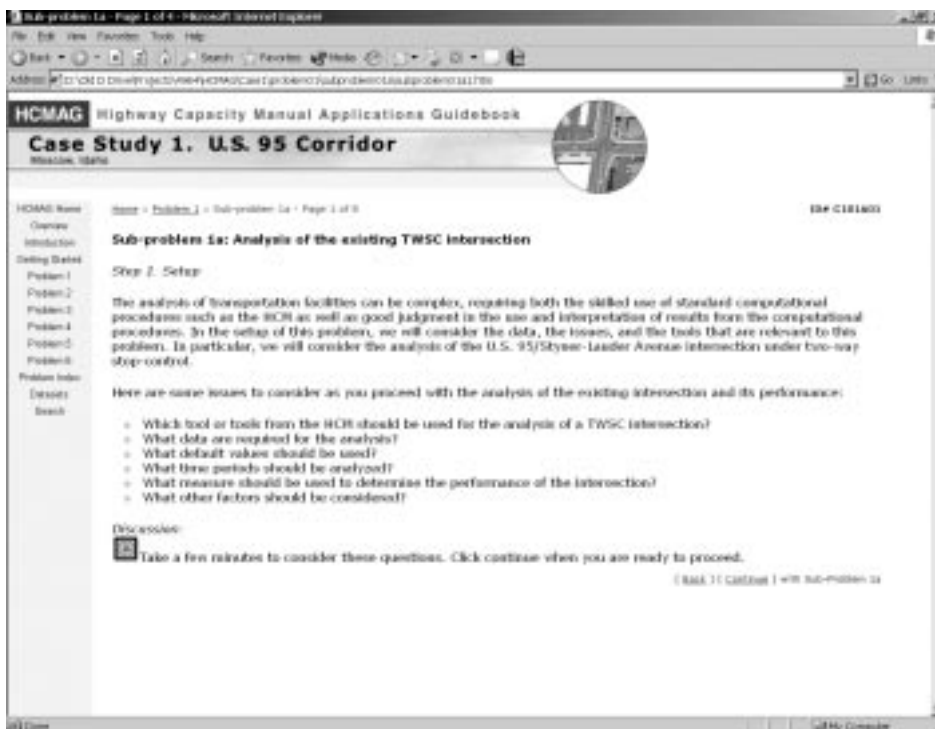
## Where To Find It

The Highway Capacity Manual Applications Guidebook can be accessed on the internet at: <http://hcmguide.com>

A CD-ROM version and/or a copy of the instruction materials can also be obtained by sending an email or writing to:

Wayne Kittelson  
Principal Investigator  
NCHRP 3-64  
Kittelson & Associates, Inc.  
610 SW Alder, Suite 700  
Portland, OR 97205  
wkittelson@kittelson.com

Please note that the instruction materials will not be available until on or about March 31, 2004.



**new!**

**CandeCAD  
-Attention CANDE Users!  
Culvert Analysis and Design inside  
AutoCAD®**

CandeCAD is a two-dimensional, nonlinear finite element computer program developed exclusively for the design, analysis and evaluation of buried pipes, culverts and other soil-structure interaction systems. CandeCAD incorporates the widely used source code CANDE, which was originally developed under sponsorship of the US Federal Highway Administration (FHWA), and has been in wide use for over twenty five years. CandeCAD has revolutionized FE analysis in the AutoCAD environment enabling engineers to utilize advanced FE technology on a routine basis for culvert and pipe design, analysis and evaluation in a considerably shorter time than previously possible.

**Development Objectives**

- To make it the fastest and easiest to use finite element buried pipe and culvert analysis software in the world.
- To empower users to incorporate advanced finite element technology in their design environment, leading to better engineered, safer and more economical designs for pipelines and culverts.

Using CandeCAD will result in significant savings in time and money while ensuring better engineered, safer and more economical designs.

**update**

**IDAS Version 2.3**

An update to the ITS Deployment Analysis System (IDAS) software [Version 2.3] is now available. IDAS was initially released by the Federal Highway Administration in October, 2000 as a sketch planning tool designed to estimate the potential benefits and costs of ITS (Intelligent Transportation Systems). Over 60 different types of ITS investments are currently available for analysis in IDAS.

This update includes significant improvements to the performance of the software and improved user friendliness of the application; however, current users should be able to use the software with little difficulty as the overall structure remains largely unchanged. These users are likely to appreciate many of the more subtle changes intended to improve overall user friendliness and enhance the configurability of the software to their particular analysis needs. Selected improvements included in IDAS Version 2.3 include:

- Updated ITS impact values and equipment costs based on more recent observations and research;
- Improvements to the software performance to reduce the model run time for many ITS components;
- The added ability to make modifications to the baseline data directly within the IDAS software – saving the user time and increasing their flexibility in structuring an analysis;
- An increase in the number of volume/delay curves that may be used in the analysis – providing users with the improved ability to configure the software to local conditions; and,
- An increase in the maximum number of roadway links that may be imported to better accommodate those users with large networks.

Current registered users of the IDAS software were shipped a CD (from McTrans) to upgrade their IDAS software as well as update all previously built databases. The upgraded version is available to new users wishing to purchase the software from McTrans. More information on the capabilities of the IDAS software and a full list of all the improvements included in the Version 2.3 update can be obtained from the IDAS web site at: <http://idas.camsys.com>.

**Update Watch**

Package	Version	Status	Target	Distribution
HCS2000	4.1d	Complete	Available	Patch Download
TRANSYT-7F	10.1	Finalizing	January 04	Registered users may upgrade
TSIS	5.1	Complete	Available	Sent to Registered users
IDAS	2.3	Complete	Available	Sent to Registered users
PASSER™II-02	1.1	Complete	Available	Sent to Registered users
PASSER™V-03	1.0.1	Complete	Available	Sent to Registered users
TNM	2.5	Finalizing	January 04	Sent to Registered Users

# D I D Y O U K N O W ?

## HCS2000

**HCS2000** computes the back of queue for each lane group in the Signalized Intersection analysis. These estimates are compared with available storage distances to produce queue storage ratios with values under one indicating the storage can accommodate the queues. These values are very useful in analyzing the lengths of left- or right-turn bays and even distances to upstream intersections. However, blockages that may occur when the queue storage ratio is above one are not considered in the calculations of delay and LOS. Users should check these values independently as additional indicators of an intersection's performance.

## TRANSYT-7F

**TRANSYT-7F** computes the fuel consumption due to random-plus-oversaturation stops differently than the fuel consumption due to uniform stops. The model assumes that random-plus-oversaturation stops are made while vehicles are traveling at the queue speed (the one at which the queue dissipates), while uniform stops are assumed to be made from cruise speed. The queue speed is calculated as follows: Queue Speed = (Saturation Flow / Queue Density).

## CORSIM

**CORSIM** adjusts a vehicle's acceleration ability based on grade, so trucks will not accelerate as fast going uphill as they will on level ground. However, CORSIM doesn't allow a different free-flow speed for different vehicle types, which would be useful in modeling the downhill grade where trucks would drive more slowly to avoid braking problems.

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## TRAINING OPPORTUNITIES

### Highway Capacity Analysis

Feb 3-5, 2004  
Apr 27-29

Las Vegas, NV  
Denver, CO

Lectures on the applications prescribed in the 2000 Highway Capacity Manual (HCM2000) procedures including Signalized and Unsignalized Intersections; Multilane, Freeways, Weaving, Ramps and Freeway Facilities; and notes on Urban Streets, Two Lane and Transit. Each lecture is followed by an HCS2000 demonstration applying data to procedural examples. (2.0 CEUs)

### Site Impact Analysis

Mar 11-12, 2004

Destin, FL

Participants will be instructed on the latest techniques for estimating the traffic impacts of both small and large site developments. Included in the material will be procedures for land use forecasting, trip generation, distribution and assignment, as well as site layout design and level of service analysis. The workshops will use manual procedures and computer software. (1.2 CEUs)

### TRANSYT-7F Signal Analysis

Feb 3-4, 2004  
Apr 20-21

Atlanta, GA  
New Orleans, LA

Release 10 of TRANSYT-7F implements traffic network simulation and traffic signal timing optimization in a Windows interface. Each lecture will include software demonstrations using different components or modules of the T7F10 software package that contains TRANSYT-7F. (1.2 CEUs)

### CORSIM Simulation

Feb 5-6, 2004  
Apr 22-23

Atlanta, GA  
New Orleans, LA

This CORSIM Simulation Seminar will provide lectures on traffic flow theory, and software demonstrations involving the FHWA's Traffic Software Integrated System (TSIS). Version 5 of TSIS implements arterial and freeway simulation in a Windows interface, including the TRAFED graphical input editor and the TRAFVU animation module. (1.2 CEUs)

*Opinions expressed in this newsletter do not reflect the official views of the university. Use of trade names implies no endorsement by the University of Florida.*

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