

RD&T Technology Facilitation Strategy for Human Centered Systems Team Support of Transportation Management Centers

This Technology Facilitation Strategy covers all Transportation Management Center Products of the Human-Centered Systems Team of the Office of Safety Research and Development. These products have been developed in coordination with appropriate CBU contacts.

PRODUCT

Description of Product

All of the products described in this plan are intended to assist in the design and operation of Transportation Management Centers (TMCs) that focus on freeway or arterial traffic management functions. These products are:

- C Preliminary Human Factors Guidelines for Traffic Management Centers
- C Human Factors Computer Aided Design Tool for Traffic Management Centers.
- C Guidelines on Travelers' Preferences for Information Related to Routing and Departure Time Decisions.
- C Human Factors in Traffic Management Center Design Workshop (TMC Workshop).

Preliminary Human Factors Guidelines for Traffic Management Centers. This document is for use in planning new TMCs and for modifications to existing TMCs. The coverage includes the operator work space requirements, the equipment design and selection, and job design. Guidance is provided on how to conduct a user-centered design process. User-computer interfaces, controls, displays, and job aids are discussed.

Human Factors Computer Aided Design Tool for Traffic Management Centers. When it goes online as *Ergo* TMC, this web based product will provide extensive user-centered assistance on the design or upgrade of TMCs. This tool will include the entire contents of the *Preliminary Human Factors Guidelines for Traffic Management Centers* in an interface that will make the contents more accessible to the intended users. Site maps, a Design Assistant, and a powerful yet easy to use search engine will provide several alternatives for navigating the site, finding needed information, and copying information to documents such as SOWs, RFPs, and design specifications.

Travelers' Preference Guidelines for Information Related to Travel Decisions. These guidelines will suggest the kinds of information to supply travelers so that they can make effective decisions regarding route choice, departure time selection, and choice of diversion routes to avoid congestion. The guidelines will suggest the types of information preferred by drivers to make their travel decisions. The majority of guidelines will be based on empirical research performed as a part of this project. The final guidelines will be evaluated by a user workshop.

Human Factors in Traffic Management Center Design Workshop (TMC Workshop). This workshop will disseminate knowledge from the *Preliminary Human Factors Guidelines for Traffic Management Centers*, show how *Ergo* TMC can be used in TMC design, and highlight the utility of the Travelers Preference Guidelines for effectively influencing route choice and travel departure time. Thus the workshop is not just a TMC product, but also a key mechanism for facilitating the delivery of our other TMC products.

Intended User

All of the products are intended for state and local officials who design, specify, and procure traffic management centers, and also for contractors who design and build traffic management centers. In addition, the Travelers' Preference Guidelines are intended for Independent Service Providers (ISPs) who provide traffic and travel information, and for manufactures who build or integrate traveler information systems.

Distribution methods

Preliminary Human Factors Guidelines for Traffic Management Centers. The Joint Program Office has printed 1000 copies of the preliminary guidelines. The document is also available for browsing or download at <http://www.its.fhwa.dot.gov/cyberdocs/welcome.htm> as document number 10303. Copies of the guideline document were provided to State Divisions, Resource Centers, and Research Advisory Committees. The Human Centered Systems Team provides copies on request to Federal, State, and other agencies that are interested in Transportation Management Centers. Copies of the Guidelines will be available through the National Technical Information Service.

Human Factors Computer Aided Design Tool for Traffic Management Centers. *Ergo* TMC will be available via the Internet to anyone with a web browser compatible with Internet Explorer 4.0 or later. The site will be promoted through flyers, the TMC Workshop, and articles in transportation related publications (e.g., *Public Roads*).

Travelers' Preference Guidelines for Information Related to Travel Decisions. The distribution will be the same as for the Preliminary Human Factors Guidelines for Traffic Management Centers, except that an additional procedure will be defined for disseminating the guideline to ISPs and original equipment manufactures and automobile makers.

Human Factors in Traffic Management Center Design Workshop (TMC Workshop). The first half-day of the workshop will consist of instructor-led classroom instruction providing an overview of the guideline document and the role of human factors in TMC design and management. The second half of the day will consist of hands-on exercises where workshop participants will use the guideline document to respond to sample human factors issues in TMC design, management and operations. The workshop will fulfill the requirements for conversion to an National Highway Institute course offered under the ITS Joint Program Offices' Professional Capacity Building (PCB) course program. The PCB Course Catalog will be one of the publicity mechanisms for the course.

Alternative Formats

All Human-Centered Systems Publications are also included in the *Safety* CD-ROM which is updated and published annually.

Delivery Date:

Preliminary Human Factors Guidelines for Traffic Management Centers:	July, 1999.
Human Factors Computer Aided Design Tool for Traffic Management Centers	September, 2000
Travelers' Preference Guidelines for Information Related to Travel Decisions	September, 2000
Human Factors in Traffic Management Center Design Workshop (TMC Workshop)	November, 2000

PROGRAM/PRODUCT SUPPORT

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OUTREACH

Conference Presentations (ITE, AASHTO, TRB, etc)

The web site will be featured in the TFHRC booth at TRB in January 2001. Although no other conference presentations have been planned, we will look for opportunities to include CADSS demonstrations as part of other DOT conference exhibits.

Publications (ITE, Public Roads, Transporter, etc.)

A brief summary will be provided for Public Roads in the fall of 2000. A flyer is a required deliverable and will be distributed through the resource centers, FHWA kiosks, and FHWA conference exhibits.

Other Outreach Activities

Members of the TMC Consortium, a pooled fund project currently in formation under the leadership of the Human-Centered Systems Team, will be urged to use the web tool and to provide feedback. The *Ergo*TMC will be presented as part of the TMC Workshops (see TMC Workshops facilitation plan). Because the *Ergo*TMC provides a searchable, online, version of the TMC Handbook, it is an ideal adjunct to workshops.

TRAINING

All items listed under training apply to the TMC Workshop product, or other products only in conjunction with the Workshop.

Materials Needed

- C Copies of Guideline documents
- C A minimum of 6 computers capable of accessing the Ergo TMC website
- C Instructors Manual
- C Presentation Materials
- C Handouts as specified by NIH

Instructor Requirements

- C Human Factors Engineer
- C Civil Engineer with TMC experience
- C Third lecturer optional

Schedule of Training/Workshop/Briefing

Workshop schedule to be coordinated with resource centers and other proponents.

Intended Audience

Those who design or specify TMC operations workspaces.

Alternative Formats N/A

PROGRAM INTEGRATION

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Follow-up Activities –

Continuing TMC activities of the Human-Centered Systems team is expected to produce new information that would be useful to TMC design. In particular, the TMC Pooled-Fund Study is expected to produce many lessons learned from TMC designs around the country. Therefore, design tool contents should not remain static; they should be updated from time to time with new information and more TMC specific guidance as it becomes available. A process for updating these products and for incorporating user feedback, needs to be put in place. The *Ergo* TMC web site will require ongoing support if it is to continue a web presence beyond September 30, 2000.