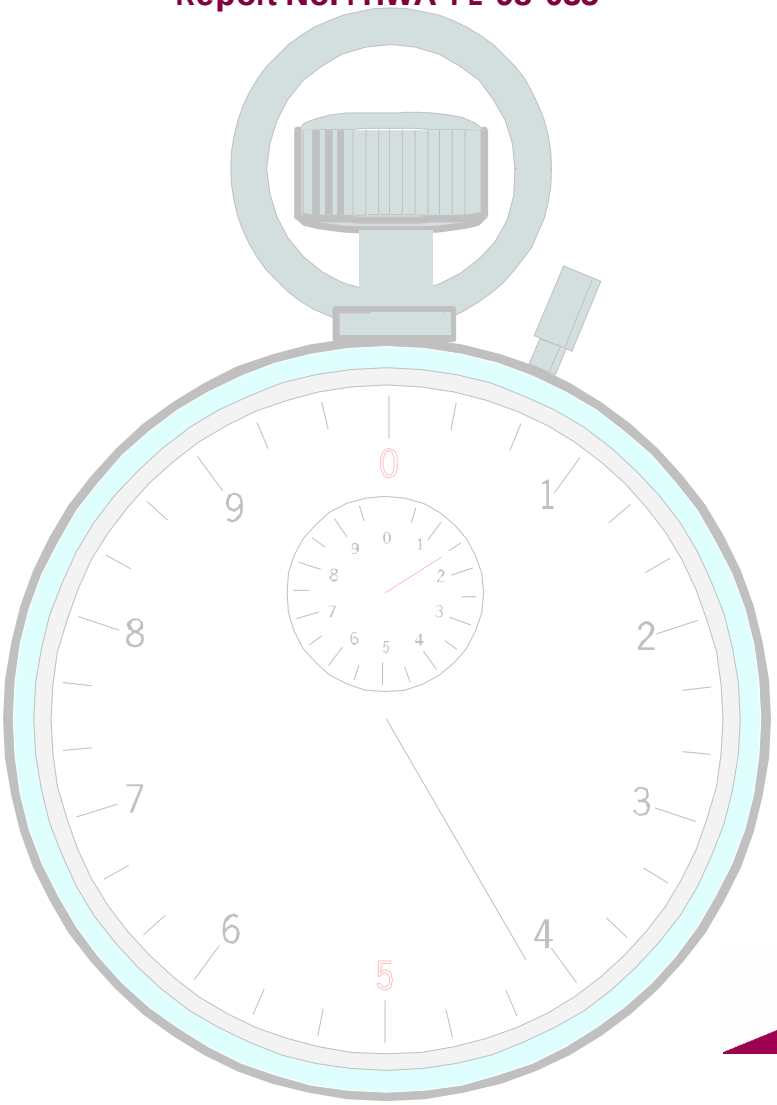
TRAVEL TIME
DATA COLLECTION HANDBOOK

Report No. FHWA-PL-98-035



Office of Highway
Information Management
Federal Highway Administration
U.S. Department of Transportation

Texas Transportation Institute
Texas A&M University System

March 1998

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
FHWA-PL-98-035		

4. Title and Subtitle	5. Report Date
TRAVEL TIME DATA COLLECTION HANDBOOK	March 1998
	6. Performing Organization Code
7. Author(s) Shawn M. Turner, William L. Eisele, Robert J. Benz, and Douglas J. Holdener	8. Performing Organization Report No. Research Report 07470-1F
9. Performing Organization Name and Address Texas Transportation Institute The Texas A&M University System College Station, Texas 77843-3135	10. Work Unit No. (TRAIS)
	11. Contract or Grant No.
12. Sponsoring Agency Name and Address Federal Highway Administration Office of Highway Information Management, HPM-30 400 Seventh Street, SW Washington, DC 20590	13. Type of Report and Period Covered Final Report: January 1997 - March 1998
	14. Sponsoring Agency Code

15. Supplementary Notes

Research performed in cooperation with the Federal Highway Administration and the Texas Department of Transportation. Project COTR: Ralph Gillmann, Office of Highway Information Management (HPM-30)
Research Study Title: Development of a Travel Time Data Collection Handbook

16. Abstract

This Travel Time Data Collection Handbook provides guidance to transportation professionals and practitioners for the collection, reduction, and presentation of travel time data. The handbook should be a useful reference for designing travel time data collection efforts and systems, performing travel time studies, and reducing and presenting travel time data. Agencies new to travel time data collection may wish to adopt sections of the handbook as standard procedures, whereas agencies with data collection experience may wish to incorporate specific details or criteria.

Initial chapters of the handbook describe how to design data collection activities, including the determination of parameters such as study size and scope, data collection technique, and other critical study elements. Chapters 3 through 6 include a description of each data collection technique, major advantages and disadvantages, cost and equipment requirements, and step-by-step instructions. Related experience with the data collection techniques is included for examples of applications. Chapter 7 provides guidance for reducing travel time data and preparing tabular and graphical presentations.

The chapters of the handbook are as follows: Chapter 1, Introduction; Chapter 2, Developing and Implementing a Data Collection Plan; Chapter 3, Test Vehicle Techniques; Chapter 4, License Plate Matching Techniques; Chapter 5, ITS Probe Vehicle Techniques; Chapter 6, Emerging and Non-Traditional Techniques; and Chapter 7, Data Reduction, Summary, and Presentation.

17. Key Words	18. Distribution Statement
Travel Time Data Collection, Study Planning, Test Vehicle, License Plate Matching, ITS Probe Vehicle	No restrictions. This document is available to the public through NTIS: National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161

19. Security Classif.(of this report)	20. Security Classif.(of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	348	

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ACKNOWLEDGMENTS

The authors would like to acknowledge the FHWA Project Director, Ralph Gillmann, of the Office of Highway Information Management, and the TxDOT Project Director, Ken Mora, of the Transportation Planning and Programming Division. Other members of the TxDOT Project Advisory Panel include:

- Jim Neidigh, Transportation Planning and Programming, TxDOT
- Ted Miller, Federal Highway Administration, Austin

The authors would also like to acknowledge the following peer reviewers that volunteered their time and provided numerous useful comments:

- Darcy Bullock, Purdue University (formerly Louisiana State University);
- Ed Christopher, Chicago Area Transportation Study;
- Bruce Griesenbeck, Sacramento Area Council of Governments
- Jeff Hochmuth, Illinois Department of Transportation;
- Tai-Kuo Liu, Volpe National Transportation Systems Center;
- Cesar Quiroga, Louisiana State University; and,
- Paul Shuldiner, University of Massachusetts.

Shawn Turner, William Eisele, Robert Benz, and Doug Holdener developed the primary material in the handbook. Pat Beck and Ivan Lorenz provided their expertise in graphics production and Clifford Spiegelman provided statistical assistance.

METRICATION

An attempt was made by the authors to provide all applicable quantities in metric units in adherence with state and federal reporting guidelines. Some complex figures and/or tables adapted from other sources are provided in the original English units because of the difficulty in creating an electronic version.

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LIST OF ACRONYMS

AAA		American Automobile Association
AADT		Average Annual Daily Traffic
AASHTO		American Association of State Highway Transportation Officials
ADEPT		Automatic Debiting Electronic Payment in Transport
ADVANCE		Advanced Driver and Vehicle Advisory Navigation Concept
APTS		Advanced Public Transportation System
ARTS		Advanced Rural Transportation System
ATMS		Advanced Traffic Management Center
ATR		Automatic Traffic Recorder
AVCS		Advanced Vehicle Control System
AVI		Automatic Vehicle Identification
AVL		Automatic Vehicle Location
BTD		Brazos Transit District
BYU		Brigham Young University
Caltrans		California Department of Transportation
CAPITAL		Cellular Applied to ITS Tracking and Location
CASI		Computer-Assisted Self-Interviewing
CATS		Chicago Area Transportation Study
	or	Computer Aided Transportation Software
CBD		Central Business District
CMS		Congestion Management System
CTPS		Central Transportation Planning Staff
CUTR		Center for Urban Transportation Research
CV		Coefficient of Variation
CVO		Commercial Vehicle Operations
DART		Dallas Area Rapid Transit
DGPS		Differential Global Positioning System
DMI		Distance Measuring Instrument
DMV		Department of Motor Vehicles
DOD		Department of Defense
DOT		Department of Transportation
ETC		Electronic Toll Collection
ETTM		Electronic Toll and Traffic Management
FCC		Federal Communications Commission
FCI		Freeway Congestion Index
FHWA		Federal Highway Administration
GIS		Geographic Information System
GPS		Global Positioning System
HCM		Highway Capacity Manual
HICOMP		Highway Congestion Monitoring Program

LIST OF ACRONYMS (Continued)

HOV	High-Occupancy Vehicle
HPMS	Highway Performance Monitoring System
IDOT	Illinois Department of Transportation
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation System
LOS	Level of Service
LPR	License Plate Recognition
LSU	Louisiana State University
LTB	London Transport Bus
MDI	Model Deployment Initiative
MOE	Measure of Effectiveness
MPO	Metropolitan Planning Organization
MTPS	Mobile Telephone Positioning Systems
MVRAP	Moving Vehicle Run Analysis Package
NCHRP	National Cooperative Highway Research Program
NMEA	National Marine Electronics Association
NPRA	Norway Public Roads Administration
NTCIP	National Transportation Communications for ITS Protocol
PATH	Program for Advanced Transit and Highway
PDA	Personal Digital Assistant
PSAP	Public Safety Answering Point
RCE	Research Center of Excellence
RF	Radio Frequency
SA	Selective Availability
SIP	Standards Implementation Plan
SRD	Standards Requirement Document
TDMA	Time Division Multiple Access
TIC	Transportation Information Center
TMC	Transportation Management Center
TRAC	Washington State Transportation Center
TRANSCOM	Transportation Operations Coordinating Committee
TRANSMIT	TRANSCOM System for Managing Incidents and Traffic
TTI	Texas Transportation Institute
TxDOT	Texas Department of Transportation
VMT	Vehicle Miles Traveled
WIM	Weigh-in-Motion
WSDOT	Washington State Department of Transportation