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**Federal Transit
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**TRANSIT PLANNING AND RESEARCH
REPORTS**

ANNOTATED BIBLIOGRAPHY

NOVEMBER 1993

Office of Technical Assistance and Safety



U.S. Department
of Transportation
**Federal Transit
Administration**

TRANSIT PLANNING AND RESEARCH REPORTS
ANNOTATED BIBLIOGRAPHY

NOVEMBER 1993

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Prepared for

Federal Transit Administration
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Washington, DC 20590

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Federal Transit Administration
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FOREWORD

Federal Transit Administration National Planning & Research Program Annotated Bibliography

November 1993

This annotated bibliography presents the most current and available project reports, as of November 1993, sponsored by the Federal Transit Administration (FTA), U.S. Department of Transportation, Washington, DC. The bibliography is a reference tool designed to provide easy and rapid access to FTA-sponsored project reports. The intent is to keep the transit industry and the general public well-informed of the FTA's planning and research activities.

The FTA plans to continue to provide this type of information by periodically publishing similar bibliographies and disseminating them to the transit community. This technical assistance initiative emanates from the FTA mission to ensure personal mobility and American economic and community vitality by supporting high quality public transportation through leadership, technical assistance and financial resources.

Each report referenced in this document consists of a bibliographic entry accompanied by a report availability statement and a summary description of the project report. The index includes keywords that have been extracted from the full-text reports as well as from the summary descriptions cited in this bibliography. This was done to provide more complete coverage of the reports' contents.

The final section of the bibliography contains a report order form and an evaluation form as well as a request for future editions of the FTA Annotated Bibliography. Your response to these forms is important to ensuring that the FTA continues to meet your technical information needs.

The project reports cited in this document are mainly products of the FTA National Program of Planning & Research. The National Program of Planning & Research is one of the six elements of the Transit Planning & Research Program which was established under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. The National Program of Planning & Research supports activities that have a national focus for:

- Federal mission support for directed research, pilot projects, and special initiatives to advance Federal transit policies and issues of National concern;
- Technology development to optimize the use of capital investments in order to improve efficiency and assist in the introduction of technologies into transit system use;
- Innovative methods and techniques to improve the efficiency and effectiveness of

transit operations through demonstrations, training, and technical assistance; and

Information and evaluation to improve communication among transit operators, suppliers, consultants, and the FTA.

Projects in the FTA National Planning & Research Program represent a mix of research, demonstrations and studies or development and application of new technologies, as well as information dissemination and evaluation.

ADVANCED PUBLIC TRANSPORTATION SYSTEMS

Advanced Public Transportation Systems: The State of the Art Update '92. April 1992, 108pp, Volpe National Transportation Systems Center, Labell LN and Schweiger CP, (FTA-MA-26-007-92-1).

Available from:
National Technical Information Service/ NTIS
Springfield, Virginia 22161.
NTIS Order No. PB PB 92-218304

This report documents one of the components of FTA's Advanced Public Transportation Systems (APTS) Program, a program designed to undertake research and development of innovative applications of advanced navigation, information, and communication technologies that most benefit public transportation. The report updates the April 1991 state of the art document. It presents the results of a limited investigation of the extent of adoption of advanced technology in public transportation service in North America. The study focuses on some innovative implementations, namely: market development, customer interface, vehicle operations and communications, and high occupancy vehicle facility operations. concepts of smart traveler and smart vehicle are discussed in detail. This study was designed to increase the industry's knowledge of successful applications of advanced technologies with the expectation of widespread industry adoption.

Advanced Public Transportation Systems: A Bibliography with Abstracts, 1985-1991. April 1992, 64pp, Transportation Research Board and Federal Transit Administration, Drancsak M and Maddock J, (FTA-TTS-30-92-1).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-92-16 .

This report is a compendium of bibliographic references retrieved from the Urban Mass Transportation Research Information Service (UMTRIS) which references the application of smart car and fleet management technologies to bus systems. The document includes sections both on projects sponsored by the FTA and by other agencies and the private sector. Abstracts of both completed projects and ongoing research are included. A list of regional repositories from which reports are available on an interlibrary loan basis is included.

Advanced Vehicle Monitoring and Communication Systems for Bus Transit: Benefits and Economic Feasibility.

Revised March 1993, University of Pennsylvania, Morlok EK, Bruun EC and Blackmon KJ, (FTA-PA-11-0035-93-1).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-94-01

This revised edition (July 1991 report) addresses one of the most important and potentially effective ways to improve the attractiveness of bus transit services--the use of advanced information technology to monitor and control bus operations.

Specifically, it focuses on the use of advanced vehicle monitoring and communication (AVM/C) systems. The report analyzes the feasibility of AVM/C systems for bus transit in the U. S. Such systems are widely used in Europe and Canada to provide more reliable and efficient bus services, but have seen little deployment in the U.S. Many systems are now available from both American and foreign vendors, and thus the question of whether or not to deploy such a system is at the forefront of many transit agencies. In this report, the potential benefits of such a system are discussed, including benefits to riders in the form of better service, to the agency in the form of increased revenues and reduced costs, and to communities in a variety of ways. A method for evaluating the feasibility of leasing and purchasing AVM/C systems is presented. Calculations for typical U.S. conditions suggest that these systems should be quite cost-effective, improving both agency finances and passenger satisfaction..

Assessment of Advanced Technologies for Transit and Rideshare Applications. July 1991, 138pp, Transportation Research Board, Davies P and Hill C, (FTA-DC-06-0651-91-1).

Available from:
National Technical Information Service/ NTIS
Springfield, VA 22161
NTIS Order No. PB 92-101641

This report examines advanced technologies and systems that can be applied to high occupancy vehicles, ridesharing and transit needs. It includes assessments of advanced technology options from benefit and cost perspectives. Separate chapters review innovations in the following systems: Advanced Traveler Information, Advanced Traffic Management, Fleet Management and Control, and Automatic Vehicle Control

Systems. Each review examines technologies that have already been widely implemented, non-implemented technologies that can be immediately applied, technologies that have potential for implementation in the next five years, and technologies that might possibly be developed for longer term future applications. This report should be of interest to highway, transit and planning professionals.

Assessment of Computer Dispatch Technology in the Paratransit Industry. March 1992, 57pp, University of North Carolina, Stone JR and Gilbert G, (FTA-NC-08-7001-92-1).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-92-23.

This report documents the results of an investigation into one area of technological advancement--computer dispatching and scheduling technology. The study examines current computerized dispatching capabilities of taxicab companies and computerized scheduling capabilities of paratransit operations. The central research question is whether computer dispatch technology is, or will be capable of, effectively improving the efficiency of dispatching shared-ride vehicles on a real-time basis.

Bellevue Smart Traveler and Cellular Telecommunications. May 1993, 72pp, Bellevue Transportation Management Association, Pieratti D and Haselkorn M, (FTA-WA-06-0039-93-1).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590

Order No. DOT-T-93-36.

This Phase 1 report documents project planning and activities during the 11 months of project operations. Phase 1 was initiated as an operational test of innovative technology to enhance ridesharing using cellular telecommunications, voice mail and computerized real-time information in carpools and vanpools. The goal was to see if these advanced technologies could be engineered and integrated into a new kind of information infrastructure which could make carpools and vanpools a more effective and attractive mode of mass transportation. Findings indicate a potential for these and other communication technology.

California Smart Traveler System.
February 1992, 90pp, Aegis Transportation Information Systems, Inc., Behnke RW, (FTA-CA-06-0240-92-1).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-92-16.

This 90 page report describes how information can be presented to passengers via audiotex and videotex information systems, and how these systems can be used to develop new modes of public transportation like parataxis (single-trip carpools). It also describes how these new modes can be integrated with conventional transit, paratransit and ridesharing modes to reduce traffic congestion, and reduce air pollution.

Cost Estimates for Selected California Smart Traveler Operational Tests. Volume 1, Technical Report.
March 1993, 52pp, Aegis Transportation Information Systems, Inc., Benke RW,

(FTA-CA-26-0007-93-1).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-93-31.

This report examines the costs of telephone-based information systems which can be used to develop new types of public transportation services, and integrate these services with conventional transit. The cost estimates focus on three areas in California and were based on data from Germany and an operational test of a smart bus system in Shellharbour, New South Wales, Australia. The report also compares the costs of using smart traveler approaches with the costs of expanding conventional transit services.

Cost Estimates for Selected California Smart Traveler Operational Tests. Volume 2 - Appendices.
March 1993, 52pp, Aegis Transportation Information Systems, Inc., Behnke RW, (FTA-CA-26-0007-93-2).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-93-32

This is a companion report to the Volume 1, Technical Report which explores the costs of telephone-based information systems that can be used to develop new types of public transportation services, and integrate these services with conventional transit. This report contains the following 7 appendices: Change in Means of Transportation to Work; Cost-Benefit Analysis of RUF-BUS and FOCCS; Shellharbour Test of a Computer-aided Responsive Bus; Shellharbour

Operational Test Cost Estimates; San Ramon/Pleasanton CA, Operational Test Cost Estimates; UCLA/Westwood CA, Operational Test Cost Estimates; and San Diego/North City CA, Operational Test Cost Estimates.

Feasibility Study of Advanced Technology HOV Systems. Volume 1: Phased Implementation of Longitudinal Control Systems.

December 1992, 112pp, University of California, Berkeley, Chira-Chavala T and Yoo SM,
Report No. FTA-CA-14-0001-92-1.

Interlibrary loan available from:
Transportation Library
Northwestern University Library
Evanston, IL 60201
telephone (708) 491-5273
FAX (708) 491-8601

or
Institute of Transportation Studies Library
University of California-Berkeley
Berkeley, CA 94720
telephone (510) 642-3604
FAX (510) 642-9180

This research project consists of 5 separate volumes. The ultimate goal is to eventually implement fully-automated systems on all roadways, and to maximize the safety and capacity benefit of these advanced technologies. Volume 1 study objectives are to identify strategies for early deployment of longitudinal control (LC) technologies on the highway and to evaluate potential impacts of these strategies on traffic operations, highway capacity, and traffic conditions. LC technologies range from driver-assisted intelligent cruise control systems (ICCs) to automated systems with close-formation platooning. This volume consists of two chapters preceded by a description of a

two-phased implementation plan of LC technologies. Chapter 1 focuses on the evaluation of ICCs. Chapter 2 evaluates LC systems with close-formation platooning in one-lane transitways. Included is a List of References.

Feasibility Study of Advanced Technology HOV Systems. Volume 2A: Feasibility of Implementing Roadway-Powered Electric Vehicle Technology in El Monte Busway. Case Study.

December 1992, 115pp, University of California, Berkeley, Chira-Chavala T and Lechner, EH,
Report No. FTA-CA-14-0001-92-2.

Interlibrary loan available from:
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Evanston, IL 60201
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This project report assesses the feasibility of early deployment of the roadway-powered electric vehicle (RPEV) technology in existing high-occupancy-vehicle facilities in California. The report is organized into 7 sections, one for each of the following tasks: current status of technology development of RPEV; site selection and data collection; scale of electrification for the El Monte busway; design of RPEV system for El Monte busway; utility load for El Monte system; plan for technology demonstration; and cost estimation. A List of References included.

Feasibility Study of Advanced Technology HOV Systems. Volume 2B: Emissions Impact of Roadway-Powered Electric Buses, Light-Duty Vehicles and Automobiles.

December 1992, 113pp, University of California, Berkeley, Madato V, Report No. FTA-CA-11-0035-92-3.

Interlibrary loan available from:

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Volume 2B investigates potential near-term (1995) air quality benefits due to roadway-powered electric vehicles (RPEV) vis-a-vis conventional internal combustion engine vehicles (ICEV). This report describes the changes in pollutant emissions as a result of adopting roadway-powered electric buses, light duty vehicles, and automobiles in California. The analysis involves comparing emissions of hydrocarbons, carbon monoxide, oxides of nitrogen, oxides of sulfur, and particulate matter, in grams per vehicle-mile of travel between RPEVs and existing ICEVs. Findings indicate that significant reductions in emissions of hydrocarbons and carbon monoxide can be expected from the adoption of RPEVs, while fluctuations between emission increases and reductions are likely for nitrogen, oxides of sulfur, and particulate matter.

Feasibility Study of Advanced Technology HOV Systems. Volume 3: Benefit Implications of Alternative Policies for Including HOV Lanes in Route Guidance Networks.

December 1992, 58pp, University of California, Berkeley, Chira-Chavala T and Lin WH, Report No. FTA-CA-14-0001-92-4.

Interlibrary loan available from:

Transportation Library
Northwestern University Library
Evanston, IL 60201
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This study investigates the statement of whether it would be beneficial to include high occupancy vehicle (HOV) lanes in route guidance networks when HOV lanes exist on the corridors. The research tasks are to identify policy options for incorporating HOV lanes in route guidance networks so that route guidance information can be provided to both HOVs and single occupancy vehicles (SOVs); and to assess travel-time impacts of these policy options relative to a commonly planned route guidance scenario. The report is organized into 6 sections and discusses the following topic areas: a hypothetical corridor and 2 policy scenarios for including HOV lanes in route guidance networks; the methodology; analysis results and implications for freeway congestion levels; and conclusions. A List of References is included.

Feasibility Study of Advanced Technology HOV Systems. Volume 4: Implementation of Lateral Control Systems in Transitways. December 1992, University of California, Berkeley, Chira-Chavala T and Zhang WB, Report No. FTA-CA-14-0001-92-5.

Interlibrary loan available from:
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Berkeley, CA 94720
telephone (510) 642-3604
FAX (510) 642-9180

The ultimate goal of this project is to eventually implement fully-automated systems on all roadways, and to maximize the safety and capacity benefit of lateral control technologies. Progress toward this goal requires an incremental implementation plan. The objectives of this final volume are: to identify lateral guidance/control systems that use discrete magnetic markers as a roadway reference for incremental implementation in existing transitways; to assess the safety and traffic impacts of these incremental systems; and to identify human factor issues related to system implementation. The two sections of this final report address the strategy and impacts of phased implementation of lateral guidance/control systems in HOV facilities, and human factor issues.

German Smart-Bus Systems: Potential for Application in Portland, Oregon. Volume 1: Technical Report. January 1993, 104pp, Aegis Transportation Information Systems, Inc., Behnke RW, (FTA-OR-06-0013-93-1).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-93-25.

This document describes the potential of advanced computer telecommunications smart bus technologies now operating in Germany to serve fast-growing American suburban areas. It describes the history of the Flexible Operations Command and Control System (FOCCS) and how it is being used in Germany to integrate flexible-route bus, minibus and taxi services with fixed-route bus, rail and ferry services. The report also describes how new telephone-based information services can be used to enhance the cost-effectiveness of FOCCS and other German smart bus concepts for use in the United States.

German Smart-Bus Systems. Volume 2: Appendices

January 1993, 64pp, Aegis Transportation Information Systems, Inc., Behnke RW, (FTA-OR-06-0013-93-2).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590.
Order No. DOT-T-93-26, .

The purpose of this 13-month project was to have Tri-Met of Portland, Oregon, critically review the West German automated command and control system that integrates fixed-route transit, dial-a-ride minibus and contract taxi services for possible application in the United States. This Appendix describes the capabilities and enhancements of the West German FOCCS, such as the videotex interface and the VIdetex-ENhanced (VIXEN) systems. It contains sections on Advanced Rider Information Subsystem,

Advanced Driver Information Subsystem, Comments on the Design of VIXEN, FOCC Cost Estimates, and the Tri-Met Strategic Plan Pursuing a Shared Vision.

Intelligent Vehicle Highway Systems (IVHS). Department of Transportation. February 1993, 213pp, Federal Highway Administration,

Available from:
Federal Highway Administration
Office of Traffic Management & IVHS
Room 3123, HTV-10
Washington, DC 20590
Order No. FHWA/DOT-HTV-10-93-1

The IVHS National Program consists of a range of advanced technologies and concepts which, in combination, can improve mobility and transportation productivity, enhance safety, maximize use of existing facilities, conserve energy, and reduce adverse environmental effects. This report describes the IVHS projects funded by the Department of Transportation modal administrations, namely--the FHWA, FTA, and NHTSA; and provides those persons interested in the IVHS program with a progress status report.

National Conference on Advanced Technologies in Public Transportation, San Francisco, California, August 16-19, 1992. July 1993, 124pp, TRB Circular 410, Transportation Research Board, National Research Council, (TRB Circular 410).

Available from:
National Technical Information Service/NTIS
Springfield, VA 22161..
NTIS Order No. PB 93-228005

The need for a better understanding of the state-of-the-art practices and the potential uses

of advanced and emerging technologies generated this National Conference on Advanced Technologies in Public Transportation, held at Westin St. Francis Hotel in San Francisco, California. The purpose of this conference was to bring together individuals from diverse backgrounds who shared a common interest in the application of advanced technologies in public transportation. The conference provided a benchmark on the current use of a wide range of advanced technologies with all types of public transit systems, as well as, a starting point for the continued examination of transit-related applications of evolving technologies. Workshop sessions were held on Customer Service Technologies, Transit and Traffic Operations Technologies, and Facility Operations and Vehicle Technologies. These proceedings are intended to be a useful resource for transportation and transit professionals, policymakers, and others interested in the application of advanced technologies in public transportation.

Advanced Public Transportation Systems: APTS Project Summaries.

July 1993, 25pp, Federal Transit Administration, Office of Technical Assistance & Safety.
Report No. FTA-TTS-30-93.

Available from:
Federal Transit Administration
Office of Technical Assistance & Safety
Washington, Dc 20590

This 25 page status report provides a listing and description of the ongoing research projects in the FTA Advanced Public Transportation Systems (APTS) program. The report is updated periodically and is designed to keep the transportation community informed of the most recent project activities.

CLEAN AIR PROGRAM

Alternative Fuel Price Summary. Clean Air Program.

March 1993, 20pp, Battelle, Sheppard WJ, Report No. FTA-OH-0060-93-1.

Available from:

Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590

This document is a compilation of alternative fuel costs that provides both current and historical fuel cost information. By using representative or averaged values, an attempt is made to place the costs of transit fuel alternatives in perspective. This report consists of a glossary, list of references and numerous charts displaying alternative fuel data, and price per unit volume information for methanol, ethanol, natural gas, LPG-propane, unleaded gasoline, diesel fuel and price to large users.

Compressed Natural Gas Fuel Use Training Manual. Clean Air Program.

September 1992, 31pp, Battelle and Pine & Associates, Report No. FTA-OH-06-0060-92-3.

Available from:

Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590.

This training manual focuses on compressed natural gas (CNG) fuel use in transit. It defines CNG in terms of physical properties, flammability and effects on health. The Safety Precautions and Procedures section provides training in the three potential danger areas of natural gas--fire, high pressures, and health

hazards. The last section focuses on operating vehicles with CNG, including repairing and fueling, and answering some common questions associated with operating CNG vehicles.

Properties of Alternative Fuels. Clean Air Program.

August 1992, 24pp, Battelle, Murphy MJ, Report No. FTA-OH-0060-92-5

Available from:

Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590., .

This report on alternative fuel properties is intended to provide a convenient reference to a number of alternative fuel properties. The report provides literature references to all data in the tables. The reader is urged to consult these references and the accompanying glossary for additional information on the origin, derivation, and meaning of the data presented in the tables.

Status of Particulate Trap Development Related to the Transit Industry. Clean Air Program.

May 1991, 28pp, Batelle, Giuliani C, Report No. FTA-OH-06-0056-91-1.

Available from:

Federal Transit Administration
Office of Technical Assistance & Safety
Washington, Dc 20590

This report reviews the status of particulate trap developments related to diesel transit buses. Past, current and future system installations are tabulated and discussed.

FINANCE

Introduction to Public Finance and Public Transit.

January 1993, 160pp, Public Financial Management, Inc., Stallsmith ES, Editor, (FTA-VA-26-0002-93-1).

Available from:

National Technical Information Service /NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-208171.

This report examines the fundamentals underlying the tax-exempt finance market and focuses on the issues related to the use of lease obligation financing in conjunction with FTA grants. The report provides an overview of the public finance market, the economics of the municipal market, how the market is regulated, who buys and sells tax-exempt debt and general historical market perspectives. The report also explores the mechanics of debt financing, lease financing and the FTA role. In addition, it describes cost reduction techniques for transit financing such as international vendor financing, cross border leasing, turnkey procurement opportunities and joint development.

Report on Funding Levels and Allocation of Funds. Report of the Secretary of Transportation to the United States Congress, Pursuant to Section 3(j) of the Federal Transit Act, as amended.

May 1993, 250pp, Federal Transit Administration, Office of Budget & Policy, Report No. FTA-TBP-10-93-3.

Available from:

Federal Transit Administration
Office of Budget & Policy, TBP-10
Washington, DC 20590 .

This annual report presents the Department of Transportation's recommendations to Congress for allocating the funds for the

Section 3 New Starts Funding Program , i.e., new fixed guideway systems and extensions such as light rail, subway line or a busway/high-occupancy vehicle (HOV) facility. The report provides a summary of the projects now in the New Starts "pipeline" and a summary evaluation in terms of project justification and local financial commitment. Appendix B presents New Start profiles of projects in various stages, such as projects under construction, in final design, in preliminary engineering, in alternative analysis, and in system planning.

Region IV Technical Training Workshops in Transportation. Financing the 1990s: Selected Presentations.

May 1993, 120pp, Walther Consultancy, Walther ES and Alexander L. (FTA-TGM-20-93-3).

Available from:

Technology Sharing Program
Department of Transportation
Washington, DC 20590.
Order No. DOT-T-93-28

This report documents 12 presentations from a regional conference on transportation financing held in Nashville, Tennessee, June 21-24, 1993. Topics covered include state-level tax financing, working with the private sector, creative local non-tax financing, use of benefit assessment districts, and the potential of system coordination. Short overviews of Federal programs that fund transit services are also included.

Turnkey Procurement Opportunities and Issues. Final Report.

June 1992, 104pp, EG&G Dynatrend Inc.,
Luglio TJ and Parker J,
Report No. FTA-MA-08-7001-92-1

Available from:

Federal Transit Administration
Office of Mobility Enhancement, TTS-10
Washington, DC 20590

This report discusses several innovative procurement methods that involve greater private sector participation in the planning,

engineering, construction, operation and financing of mass transit fixed guideway systems. These methods are designed to contain the cost and risk factors of such projects by sharing the responsibilities for these factors between public and private interests. The report covers the following innovative procurement methods: turnkey, super turnkey, build-operate-transfer, build-transfer-operate, franchises and others. It also identifies experiences and issues in the application of these innovative procurement methods.

INFORMATION PROGRAM

Bus Support Facilities: Conditions and Needs.

January 1993, 184pp, ATE Management & Service Company, Inc. and FTA Office of Policy,
Report No. FTA-VA-08-6001-93-1.

Available from:
Federal Transit Administration
Office of Budget & Policy, TBP-10
Washington, DC 20590

This 3-chapter report focuses on the current conditions and five-year capital needs of the Nation's bus support facility infrastructure. The purpose of the study was to develop estimates of the current condition of the Nation's transit bus maintenance facilities and the capital investments needed to assure that these facilities remain in good condition. Transit bus systems (213), operating 25 or more vehicles in maximum revenue service, formed the basis for this review of capital facility conditions and needs. Separate chapters summarize the operators' survey results, and the lessons to be learned from the nine case studies.

Celebrating Excellence in Public Transit .
April 1993, 229pp, Utah Transit Authority,
(FTA-UT-06-0005-93-1).

Available from:
National Technical Information Service/NTIS
Springfield, Virginia 22161
NTIS Order No. PB93-208205.

The purpose of this project was to study excellence in the transit industry. The tasks included identifying and showcasing pockets of excellence, producing a video celebrating industry excellence, and disseminating a final project report to the transit community. A steering committee of transit executives, from New York to California, was established to define and identify industry excellence. This directory contains a full listing of projects, programs and practices submitted for review under the Utah Transit Authority's search for transit industry excellence. Twelve of the thirty-six projects were featured in the "Destination Excellence" video. Twenty-five projects were selected for special focus as "Transit Great Ideas." All project entries are listed alphabetically by transit agency name, and by topic.

Compendium of FTA Abstracts 1991-1992.
January 1993, 200pp, Federal Transit Administration, D'Antignac P,
Report No. FTA-TTS-31-93-1

Available from:
Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590

The 1991/1992 Compendium is a compilation of Technical Report Documentation pages that provide bibliographic information and abstracts for recently available FTA-sponsored project reports.

Data Tables for the 1991 Section 15 Report Year.

December 1992, 350pp, COMSIS Corporation, Futrell M and Black TN, (FTA-MD-08-9009-92-5).

Available from:
National Technical Information Service /NTIS
Springfield, Virginia 22161
NTIS Order No. PB93-208239.

This report summarizes the financial and operating data submitted to the FTA by the Nation's public transit operators, pursuant to Section 15 of the Federal Transit Act, as amended. These data represent a portion of the 1991 Annual Report. This report consists of an introduction, and financial and operating data of the individual transit systems that submitted complete Section 15 reports. All data in this report are for fiscal years ending on or between January 1 and December 31, 1991.

Federal Transit Administration Six Year Plan for a National Program of Transit Planning & Research.

December 1992, 155pp, Federal Transit Administration.
Report No. FTA-TTS-05-92-1.

Available from:
Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590

This report discusses the 10 topics that form the Federal Transit Administration's six year plan for a National Program of Transit Planning and Research. The topics are: Advanced Public Transportation Systems; Clean Air; Finance; Human Resources; Information; Regional Mobility; Safety and Security; Technology Development; Transit

Accessibility; and Planning and Project Development.

FY 1992 Statistical Summaries - Grant Assistance Programs.

March 1993, 132pp, Federal Transit Administration (TGM-10), Tucci J, Report No. FTA-TGM-10-93-1.

Available from:
Federal Transit Administration
Office of Grants Management, TGM-10
Washington, DC 20590.

This report is the annual update in a series of documents which present selected analyzed data on the distribution and use of various formula and discretionary program funds for transit. The programs discussed in this report are the principal source of Federal financial aid to urban and non-urban areas for transit. Data is compiled from the capital, operating and the planning assistance grants awarded to transit agencies, states, metropolitan planning organizations and other units of local governments. The data is presented in various tables, charts, and graphs.

Glossary of Transit Terms Used for Section 15 Report.

November 1992, 23pp, COMSIS Corporation, (FTA-MD-08-9009-92-6).

Available from:
National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-207231

This report provides a comprehensive glossary of terms used for the FTA Section 15 program. Section 15 of the Federal Transit Act, as amended, provides for the establishment of a uniform system of transit accounts and records plus a reporting system for the collection and dissemination of public

mass transportation financial and operating data by uniform categories.

Introduction to the Section 15 Program, the National Transit Database. Brochure July 1993, 12pp, Federal Transit Administration, Report No. FTA-MD-08-9009-93-1.

Available from:
Federal Transit Administration
Section 15 Program, Room 9311
Washington, DC 20590.

This brochure is an introduction to the FTA Section 15 program. The Section 15 program is the FTA's National database of statistics for the transit industry; it is officially called *The Uniform System of Accounts and Records and Reporting System* and is authorized under Section 15 of the Federal Transit Act. The FTA has established both a system to record standardized public mass transportation financial and operating data, and a national reporting system for these statistics. In addition, FTA has developed an extensive database of transit information that is available to the public. Basically, Section 15 provides a unique National source of standardized and comprehensive data for use by all transit industry constituencies.

Public Transportation Decisionmaker. Winter 1993, Volume 1, Number 1, 28pp, The United States Conference of Mayors, (FTA-TBP-30-93-1).

Available from:
The United States Conference of Mayors
1620 Eye Street, NW, Suite 600
Washington, DC 20006
Phone: (202) 293-7330
FAX: (202) 293-2352

This Winter issue focuses on the complexities of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and the changing effect on the Nation's surface transportation policy. Three articles in the Forum section of the journal discuss the issue of dedicated taxes--one case for, one against, and one article examines the track record of sales tax elections. The other eight articles feature ISTEA in terms of a new vision, the Federal corner, a revolution, the great compromise, implementation, an MPO battle for change, advantages of flexibility, and a consensus building mechanism.

Public Transportation Decisionmaker. A Journal for Local and State Policymakers. Spring/Summer 1993, Volume 1, Number 2, 33pp, The U.S. Conference of Mayors, (FTA-TBP-30-93-2).

Available from:
The United States Conference of Mayors
1620 Eye Street, NW, Suite 600
Washington, DC 20006
Phone: (202) 293-7330
FAX: (202) 293-2352

This is the second issue of *Transportation Decisionmaker*. The journal is designed to meet the needs of mayors, county officials, state legislators, state secretaries of transportation and all other decisionmakers involved in transportation issues. This issue includes an article by the Secretary of Transportation, Federico Peña. It includes, what will become a regular feature of the journal, an article from a member of the Advisory Board organization; in this issue, Jack Gilstrap, Executive Vice President of the American Public Transit Association. Other topics covered include an assessment of the interstate highway system relative to public transportation and a counterpoint article; a discussion of pros and cons of competitive

contracting for transit service; an article on the implications of the Clean Air Act; information on the proposed new planning rules; and, a case study on commuter rail in the Seattle region.

Public Transportation in the United States: Performance and Condition.

Report to Congress.

May 1992, 127pp, Federal Transit Administration,
Report No. FTA-TBP-10-92-3.

Available from:
Federal Transit Administration
Office of Budget & Policy, TBP-10
Washington, DC 20590.

This is the fifth biennial report on the performance and condition of public mass transportation systems in the United States. It has been prepared in accordance with the requirements of 49 U.S.C. 308. The report consists of the following three chapters: Profile of Public Transportation in the U.S.; Transit Performance and Condition; and Transit Needs.

The Status of the Nation's Highways, Bridges, and Transit Conditions and Performance. Report of the Secretary of Transportation to the United States Congress, Pursuant to Section 307(h) of Title 23, United States Code, and Section 308(e) of Title 49, United States Code. January 1993, 250pp, Federal Highway Administration/Federal Transit Administration, (FTA-TBP-10-93-1).

Available from:
Federal Highway Administration
Office of Policy Development, HPP-22
Washington, DC 20590

This report is submitted by the Secretary of Transportation to the Congress pursuant to Sections 307(h) of Title 23, United States Code and Section 308(e) of Title 49, United States Code. The report contains detailed information on system characteristics, finance, and trends in condition and performance. It also includes capital investment requirements from all sources. This 1993 version merges highway and bridge investment analysis and presentation with similar transit analysis to present a more complete assessment of surface transportation systems. The report includes a section on environmental conditions and performance.

Technical Assistance and Safety Programs: FY 1992 Project Directory

February 1993, 113pp, Federal Transit Administration, Rodano E,
Report No. FTA-TTS-5-93-1.

Available from:
Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590

This Directory contains brief descriptions of Technical Assistance & Safety projects initiated during Fiscal Year 1992 by the Office of Technical Assistance & Safety. The directory is designed to inform the public and the transit industry of the nature and scope of work underway to assist State and local agencies in improving services and reducing the cost of public transit.

Technical Assistance Briefs of the FTA Office of Technical Assistance & Safety National Planning and Research Program. Spring and Summer 1993, Federal Transit Administration.

Briefs Available from:
Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590

FTA Technical Assistance Briefs are published periodically and are a good reference tool for transit professionals and others interested in transit research and planning programs. The purpose of the briefs is to provide the transit community and the general public with information on the current activities of the program areas of the FTA National Planning and Research Program.

Advanced Public Transportation Systems (APTS).

Program, Brief 1, Spring 1993.
Evaluation Guidelines, Brief 2, Summer 1993.

Bus Testing Program.

Brief 2, Spring 1993.

Clean Air.

Program, Brief 5, Spring 1993.
Alternative Fuels, Brief 6, Summer 1993.

Finance.

Program, Brief 1, Spring 1993.

Human Resources.

Program, Brief 1, Spring 1993.

Regional Mobility.

Program, Brief 2, Spring 1993.

Safety & Security.

Drug & Alcohol Testing, Brief 1, Spring 1993.
Transportation Safety Institute, Brief 2, Spring 1993.

Technology Development.

Program, Brief 1, Spring 1993.

Transit Profiles: Agencies in Urbanized Areas Exceeding 200,000 Population for the 1991 Section 15 Report Year.

December 1992, 310pp,
COMSIS Corporation,
Report No. FTA-MD-06-0194-92-2.

Available from:
Federal Transit Administration
Section 15 Program, Room 9311
Washington DC 20590.

This report summarizes the financial and operating data submitted to the FTA by the Nation's public transit operators, pursuant to Section 15 of the Federal Transit Act, as amended. The publication consists of individual profiles for each transit reporting agency located in an urbanized area with a population exceeding 200,000. The data contained in each profile consists of general and summary reports, as well as modal, performance and trend indicators for the 1991 report year.

Transit Profiles: Agencies in Urbanized Areas with a Population of Less Than 200,000 for the 1991 Section 15 Report Year.

December 1992, 240pp, COMSIS Corporation,
Report No. FTA-MD-06-0194-92-3.

Available from:
Federal Transit Administration
Section 15 Program, Room 9311
Washington, DC 20590.

This report summarizes the financial and operating data submitted to the FTA by the Nation's public transit operators, pursuant to Section 15 of the Federal Transit Act, as amended. The report consists of individual profiles for each transit reporting agency located in an urbanized area with a population

of less than 200,000. The data contained in each profile consists of general and summary reports, as well as modal, performance, and trend indicators for the 1991 report year. The 1991 Report Year is defined as a transit reporting agency with a fiscal year ending on or between January 1 and December 31.

Transit Profiles of the Thirty Largest Agencies for the 1991 Section 15 Report Year.

October 1992, 83pp, COMSIS Corporation, Report No. FTA-MD-06-0194-92-4.

Available from:

Federal Transit Administration
Section 15 Program, Room 9311
Washington, DC 20590.

This Section 15 publication consists of consolidated profiles for the 30 largest transit agencies in the United States. The criteria used to determine the 30 largest transit agencies is operating expense reported for the 1991 report year. Data contained in each profile consists of general and summary reports, as well as modal, performance, and trend indicators for the 1991 report year. The 1991 report year is defined as a transit reporting agency with a fiscal year ending on or between January 1 and December 31.

Vehicle Ownership. A Competitive Service Board Report.

1993, 30pp, Competitive Services Board, (FTA-TBP-30-93-2).

Available from:

The Publications Sales Office
The Urban Institute
2100 M Street, NW
Washington, DC 20037

Order: \$5.00 for the first copy, 25 cents for each additional copy.

Vehicle ownership is a major decision when private contracting is being considered. The purpose of this report is to help managers arrive at a decision on vehicle ownership. The report focuses on the issue of public or private vehicle ownership from both the contracting agency's and the potential contractor's viewpoint. It discusses conditions favoring public and private ownership, reviews existing examples and conditions of both public and private ownership, and provides some "do's and don'ts" guidelines when contracting for service. Clearly, the key factors identified as influencing the ownership decision should be reviewed by any public agency before any final decision is made. In addition, the agencies should consult with other transit systems to obtain current and recent experiences with both forms of ownership. Examples of how two agencies have dealt with vehicle ownership are provided in Appendix B.

PLANNING & PROJECT DEVELOPMENT

Characteristics of Urban Transportation Systems. Revised Edition.

September 1992, 152pp, Cambridge Systematics, Inc., Levinson HS, (FTA-TGM-20-92-3).

Available from:

Technology Sharing Program
Department of Transportation
Washington, DC 20590 .

Order No. DOT-T-93-07

This report is designed to provide a single source of sketch planning data on the most important performance characteristics of contemporary urban transportation systems in a format that lends itself to easy reference. This seventh update of the handbook does not deal explicitly with passenger demand, but assesses only the supply or performance characteristics of selected systems. Separate chapters deal with rail transit; bus transit; automobiles, trucks, and the highway system; high occupancy vehicle lanes; and automated guideway transit.

Commuter Intercity Rail Improvement Study: Boston-New York.

May 1993, 226pp, Volpe National Transportation Systems Center, Northeast Corridor Improvement Study Team, (FTA-MA-06-0196-93-1).

Available from:

National Technical Information Service/NTIS
Springfield, Virginia 22161
NTIS Order No. PB93-217602

This study identifies and characterizes the costs and benefits of improvements that

could be achieved in commuter and intercity rail passenger service on the Boston-New York portion of the Northeast Corridor (the 456-mile system of railroad passenger service infrastructure extending from Boston to Washington DC with New York City at its midpoint). The study clarifies the nature, costs and benefits of major investments in the rail infrastructure and brings together the results of studies, analyses and estimates by the participating public agencies, operating railroads and others, as well as independent assessments by the study team. In this report, major infrastructure rehabilitation and improvement projects are identified; and potential savings and ridership gains are discussed. The report presents a series of alternative plans to achieve the goal of 3-hour trip time between Boston and New York City.

Commuter Rail State-of-the-Art: Study of Current Systems.

December 1992, 108pp, Florida International University, Shen DL, (FTA-FL-11-0018-92-1).

Available from:

National Technical Information Service/NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-145753.

This is a state-of-the-art study of current commuter rail systems in the United States. The report profiles 12 existing commuter rail systems in the United States. It reviews each system's characteristics, and provides detailed information on operations, fare collection, stations, maintenance facilities, patronage, railcars and feeder systems. It provides more

general information on several new or planned commuter rail systems nationwide. The study identifies trends in commuter rail operations and development, including bi-level cars, circumferential routes, as well as new approaches to funding and system support. A bibliography is included.

Construction Costs and Operating Characteristics of Vintage Trolleys. March 1992, 210pp, KPMG Peat Marwick, Jewell M, (FTA-TGM-20-92-2).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-92020

The purpose of this study was to research the institutional arrangements, service characteristics and costs associated with vintage trolley systems currently being operated in order to provide a base of information for making informed funding decisions for future projects. The following systems were examined: McKinney Avenue Line in Dallas TX; Platte River Trolley in Denver CO; Detroit Citizens' Railway in Detroit MI; Fort Collins Municipal Railway Society's Line in Fort Collins CO; Trolley in Galveston TX; St. Charles and Riverfront Streetcar Lines in New Orleans; Vintage Trolley in Portland OR; Transit Mall Loop in San Jose CA; and Waterfront line in Seattle WA.

Estimation of Operating and Maintenance Costs for Transit Systems. Final Report. December 1992, 221pp, KPMG Peat Marwick, (FTA-DC-08-9099-93-1).

Available from:

Technology Sharing Program
Department of Transportation
Washington, DC 20590, .
Order No. DOT-T-93-21

This report provides guidance for the development and application of operating and maintenance (O&M) cost models. It supplements the FTA report titled *Procedures and Technical Methods for Transit Project Planning*. An O&M cost database containing representative information for motor bus, rapid rail, light rail and commuter rail modes is presented. The data provides 1) labor productivity and unit cost information that can be directly applied in structuring O&M cost models, and 2) aggregate costs per unit of service for major functional areas at peer transit properties. Ten principles of O&M cost modeling for use in alternative analysis and preliminary engineering are presented along with descriptions of O&M cost database, and guidelines for documentation of O&M cost models..

Improving the Efficiency of Bus Priority Lane Treatments in New York City. October 1992, 170 pp, New York City Department of Transportation, Division of Surface Transit Operations, (FTA-NY-08-0185-93-1).

Available from:
National Technical Information Service /NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-143667

Successful priority bus lane treatment result in reduced travel time, improved schedule reliability, and increased ridership for buses. New York City has implemented 22 priority bus lanes in the past decade throughout the 5 boroughs. Some of these have been successful; however, excessive violations can degrade the efficiency of operation. The most

common strategy is to put an enforcement agent right in the middle of the action, which is expensive. The purpose of this study is to examine the operation of existing bus lanes in New York City and to identify techniques to attain low violation rates with fewer agents.

Increasing the Productivity of the Nation's Urban Transportation Infrastructure. Measures to Increase Transit Use and Carpooling.

January 1992, 300pp, Harvard University, Kain JF.
(FTA-MA-11-0045-92-1).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-92-17

This report surveys the growing use of bus and carpool priority measures to increase the productivity of the Nation's transportation structure. Although the report identifies a wide variety of priority measures, the main focus is on the planning and operation of exclusive and shared busways and high occupancy vehicle (HOV) facilities.

ISTEA and Intermodal Planning: The Concept, The Practice and The Vision. Proceedings of a Conference. Special Report 240.

December 1992, 181pp, Transportation Research Board, (Special Report 240).

Order from:
Transportation Research Board
National Academy Press
Washington, DC 20418
Order No. Special Report 240

This report documents the proceedings of a *National Conference on the Intermodal*

Surface Transportation Efficiency Act of 1991 (ISTEA) and Intermodal Planning Issues: The Concept, The Practice, The Vision, held December 2-4, 1992, in Irvine, California. It was the first TRB conference to be cosponsored by all five modal administrations of the U.S. Department of Transportation. Participants represented every mode of transportation. The objectives of the conference were to: review the evolution of the planning and funding of the U.S. transportation systems; identify new planning mechanisms developed in ISTEA; identify issues to be addressed in order to achieve more economically and environmentally efficient systems; and assess how these issues should be integrated in the planning process. This Proceedings report consists of the chairman summary, conference findings, workshop reports (6), resource papers (12), conference perspectives, steering committee biographical information, and a list of participants.

Manual on Contracting for Vehicle Maintenance Services.

October 1992, 248pp, Iowa State University, Maze TH and Waggoner KM,
(FTA-IA-11-0008-92-1).

Available from:
National Technical Information Service/NTIS
Springfield, VA 22161
NTIS Order No. PB 93-144251

The purpose of this manual is to assist transit agency managers and supervisors who are considering the procurement of vehicle maintenance services from private, independent contractors. Although the manual focuses on rural, small urban and specialized transit operations, it contains useful information for all public agencies intending to purchase vehicle maintenance services through competitively awarded

contracts. Covered in separate chapters are guidelines for contracting, competitive bidding, competitive negotiation, and contract controlling, as well as the implications of drug testing requirements. It has been found that when a transit agency purchases vehicle maintenance services using third party providers, the use of competitive bidding/negotiations (as opposed to small purchase agreements) almost always reduces the cost of vehicle maintenance and improves the quality of maintenance services.

Measurement of Transit Benefits.

June 1993, 162pp, University of Wisconsin-Milwaukee, Beimborn E and Horowitz A, (FTA-WI-11-0013-93-1).

Available from:

National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-208122.

The objective of this research is to view public transit benefits from a broad perspective in order to gain a better understanding of how their measurement can be used to assist in decisionmaking. This report provides a comprehensive view of the range of transit services and indicates various methods that can be used to assess their benefits. The framework proposed for compiling and assessing these impacts is a five branched benefit tree, which is explained in detail in the document. The document provides an overview of benefits and how they are defined, including economic versus non-economic, national versus regional, local versus areawide, and perceived versus measured. Techniques for air pollution assessment and for employment impacts are discussed in detail. This report provides a list of major findings and recommended procedures that

can serve as a set of guidelines for any benefits analysis.

Modernization of the Nation's Rail Transit Systems: A Status Report.

August 1992, 94pp, Gannett Fleming, Engineers and Planners, (FTA-PA-08-6005-92-1).

Available from:

National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-145977.

This report is a review and update of the progress made by the major urban transit authorities in rail modernization since 1984. The first Rail Modernization Study (1987) projected a cost of \$17.8 billion (in 1983 dollars) to upgrade the Nation's rail system to a "good" condition over the ten year period from 1984 through 1993. This report projects the need to spend another \$15.5 billion to \$17.2 billion (in 1991 dollars) on rail modernization over the ten year period 1992 through 2001 to bring rail systems to a "good" condition. The report indicates that complying with the Americans With Disabilities Act will add \$565 million to this need. In this report recent trends in spending on rail modernization by Federal, state, and local governments are examined. A list of rail systems evaluated in this study is provided.

North Bethesda Transitway Feasibility Study.

December 1992, Douglas & Douglas, Inc., et al, prepared for Montgomery County Department of Transportation, (FTA-MD-03-4500-93-1).

Available from:

National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB93-144244

This study focused on private sector financing of transit improvements between North Bethesda business and commercial areas and the Grosvenor Metrorail Station. As part of this study, an investigation was made of the feasibility of using advanced vehicle and guideway technologies in the transit corridor, namely, People Movers. The purpose of the study was to determine the feasibility of implementing a People Mover line to connect Rock Spring Park and Montgomery Mall with the Grosvenor-Metrorail Station. The three People Mover concepts selected are discussed in this report (Monorail Shuttle, Monorail Loop, and Automated Light Rail Transit alternative) along with the alignments, costs, ridership estimates, financing, and environmental impact.

Planning and Project Development Program. Information Packet.

1993, Federal Transit Administration, Office of Mobility Enhancement, (FTA-TTS-10-93).

Available from:
Federal Transit Administration
Office of Mobility Enhancement, TTS-10
Washington, DC 20590

The FTA has developed a Technical Assistance Program to improve the state-of-the art in planning, engineering, management, and procurement methods and, thereby, improve government investments in transit services, equipment, and facilities. This *Planning and Project Development Program*

information packet consists of four focus areas: Operations Planning and Analysis, Capital Planning and Development, Procurement and Engineering Methods, and Multimodal Planning. These focus areas are supported by other FTA activities such as technical assistance provided through *PPTN "The Transit Information Exchange,"* dissemination of research reports, and other outreach activities such as conferences, seminars, and courses. Details on each focus area are provided in the contents of this Information Packet.

Procedures and Technical Methods for Transit Project Planning. February 1993 Supplement.

February 1993, Federal Transit Administration,
Report No. FTA-TGM-20-93-1

Available from:
Federal Transit Administration
Office of Grants Management, TGM-20
Washington, DC 20590

This report presents a comprehensive, integrated planning process for developing and evaluating major transit capital projects. The process applies to fixed guideway projects (new rail lines, busways, peplemovers) and guideway extensions. The report is organized into three sections--Major Capital Investment Planning Process, Conduct of Technical Analysis, Decisionmaking Process.

POLICY ANALYSIS AND EVALUATION

To Classify Transit Services: Eight Case Studies. An FTA Policy Report.
June 1992, 220pp, Mac Dorman & Associates, Inc.,
Report No. FTA-VA-06-0143-92-1

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telephone (708) 491-5273
FAX (708) 491-8601

or

Institute of Transportation Studies Library
University of California-Berkeley
Berkeley, CA 94720

telephone (510) 642-3604
FAX (510) 642-9180

This report presents the results of an analysis of the change in the mix of fixed-route transit service in eight metropolitan areas. These case studies were conducted for the FTA to support its 1992 report to Congress concerning transit performance. The case studies illustrate the changes in transit performance along with the different functions served by transit. The analysis examined the functions, characteristics, and clientele of six different types of bus service. The cases studies examined the change in the mix of service in the following metropolitan areas: Albany NY, Miami FL, Los Angeles County CA, Minneapolis/St. Paul MN, St. Louis MO, San Antonio TX, San Diego CA, and Washington DC.

National Bus Spare Ratio Study.
March 1993, 45pp, Federal Transit Administration, Branch PR.
Report No. FTA-TGM-10-93-3.

Available from:
Federal Transit Administration
Office of Grants Management, TGM-10
Washington, Dc 20590

This National Bus Spare Ratio Study is updated annually by the FTA Office of Capital and Formula Assistance to monitor the bus spare ratios of the Nation's transit industry. The study provides a summary of the bus spare ratios for the national transit industry in all fleet sizes except those grantees operating under 50 vehicles in maximum service. The study examined the current condition of the industry using trends, statistical analysis, and exhibits. All actual spare ratio percentages are appended in Tables 2, 3, and 4 of this report. This report contains graphical information for transit systems with 50-90 VOMS (vehicles operated in maximum service); 100-249 VOMS; 250-499 VOMS; 500-999 VOMS; and systems with over 1000 VOMS. Basically, the number of spare buses in the active fleet for grantees operating 50 or more revenue buses should normally not exceed 20 percent of the VOMS. However, this study indicated that in 1990, 18 transit agencies operated at spare ratios in excess of 30 percent. Contact Mr. Paul Branch, TGM-10, (202) 366-6694 for a copy of this report.

Review of the Transportation Planning Process in the Chicago Metropolitan Area. March 1993, 60pp, Volpe National Transportation Systems Center, Lyons W and Deysher B.

Available from:
Volpe National Transportation Systems Center, Kendall Square
Cambridge, MA 02142.
Order No. FTA-MA-08-9030-93-2

This report is the second of a series produced for the FTA and the FHWA by the Volpe National Transportation Systems Center. The purpose of the review was to allow the FHWA and the FTA determine how successfully the Urban Transportation Planning Process (UTPP) addresses broadly defined regional transportation needs, and whether the planning process meets the requirements of the joint planning regulations. The review focused on the transportation and air quality planning activities of Chicago Area Transportation Study, Illinois DOT and the Regional Transportation Authority and its three divisions.

Review of the Transportation Planning Process in the Kansas City Metropolitan Area.

February 1992, 44pp, Volpe National Transportation Systems Center, Spiller D. and Deysher B.

Available from:
Volpe National Transportation Systems Center, Kendall Square
Cambridge, MA 02142
Order No. FTA-MA-08-9030-93-1

This report is the first in a series produced for FTA by the VNTSC. The purpose of this planning review is to allow FHWA and FTA to determine how successfully the Urban

Transportation Planning Process (UTPP) addresses regional transportation needs, and whether the process meets the requirements of the joint planning regulations. Another purpose is to assess the ability of the existing planning process to address the broader responsibilities that are being added to the process under the Clean Air Act and the reauthorization legislation, pending at the time of this review. Appendix 3 includes the support documentation reviewed.

Review of the Transportation Planning Process in the Pittsburgh Metropolitan Area.

March 1993, 51pp, Volpe National Transportation Systems Center, Lyons W (FHWA) and Jensen-Fisher R (FTA).

Available from:
Volpe National Transportation Systems Center, Kendall Square
Cambridge, MA 02142.
Order No. FTA-MA-08-9030-93-4

This is a comprehensive review of the planning process in the Pittsburgh metropolitan area, conducted by the FHWA and FTA headquarters and regional staffs with input from state, regional and local transportation agencies. The purpose of this review was to determine how successfully the urban transportation planning process (UTPP) addresses the regional transportation needs, and whether the planning process meets the requirements of the joint planning regulations. The review focused on the transportation and air quality planning activities for the Pittsburgh region. The Federal team reviewed supporting documentation that included the State Implementation Plan for air quality planning; the UPWP; the 1984 long range Regional Transportation Plan; the Transportation Improvement Program, and other technical materials related to the UTPP.

REGIONAL MOBILITY

Assessment of High-Occupancy Vehicle Facilities in North America. Executive Report. Technical Report 925-5F.
August 1992, 95pp, Texas Transportation Institute, The Texas A&M University System, Turnbull KF,
Report No. FTA/TX-89/1-925-5F.

Available from:
Federal Transit Administration
Office of Planning, TGM-20
Washington, DC 20590

This report is the final report of a 3-year assessment study of high-occupancy vehicle (HOV) lane projects located either on freeways or in separate rights-of-way in North America. The report includes a discussion of the purpose of the assessment, an overview of the status of HOV facilities in North America, suggested procedures for evaluating HOV projects, detailed information on selected HOV case studies, proposed future HOV projects, and areas for further research. A procedure for evaluating freeway HOV lanes was also developed to provide a national model for areas interested in conducting before-and-after evaluations and ongoing monitoring activities. This report should be of benefit to transportation professionals and others in ensuring that HOV projects are planned, designed, implemented, and operated to maximize the potential benefits from the use of these facilities.

Cashing Out Employer Paid Parking. Final Report.
December 1992, 155pp, University of California, Los Angeles, Shoup DC,
(FTA-CA-11-0035-92-1).

Available from:
National Technical Information Service, NTIS
Springfield, Virginia 22161.
NTIS Order No. PB 93-208189

This report identifies employer-paid parking as an invitation to drive to work alone, and at cross purposes with costly public policies designed to reduce traffic congestion, energy consumption, and air pollution. The purpose of this study is to explore the problems created by employer-paid parking, to propose a solution to these problems and to predict the consequences of the proposal. To deal with the problems created by tax-exempt employer-paid parking, the study proposes a minor technical change in the Internal Revenue Code, namely, that employers who subsidize employee parking should be required to offer employees the option to take a taxable cash travel allowance in lieu of the tax-exempt parking subsidy. Case studies and a statistical model suggest that offering employees the option to take their parking subsidies as in-lieu cash could reduce solo driving to work by 20 percent, reduce automobile travel to work by 76 billion VMT per year, save 4.5 billion gallons of gasoline per year, eliminate 40 million metric tons of CO₂ emissions per year, and increase tax revenues by \$1.2 billion per year.

**Examining Congestion Pricing
Implementation Issues: Summary of
Proceedings. Searching for Solutions,
Policy Discussion Series No. 6.**
December 1992, 60pp, Federal
Highway/Federal Transit Administration.

Available from:
Federal Highway Administration
Office of Policy Development, HPP-13
Washington, DC 20590
Order No. FHWA-PL-93-008

One of the proposed methods of reducing congestion is congestion pricing. The FHWA and FTA designed this symposium in anticipation of the solicitation for pilot project proposals. The symposium brought together more than 160 transportation officials, economists, and environmentalists from the public and private sectors to identify and discuss key issues that must be considered in the implementation of congestion pricing pilot projects. This proceedings report summarizes the plenary and breakout sessions of the Congestion Pricing Symposium held at the Key Bridge Marriott Hotel in Arlington, Virginia, June 10-12, 1992. Copies of papers presented at the plenary sessions are available under separate cover upon request to the FHWA's Transportation Division, Attention: Jean Stock, HPP-13.

Exploring the Role of Pricing as a Congestion Management Tool. Searching for Solutions: A Policy Discussion Series. March 1992, 31pp, Federal Highway Administration/Federal Transit Administration.

Available from:
Federal Highway Administration
Office of Policy Development, HPP-13
Washington, DC 20590
Order No. FHWA-PL-92-012

This report summarizes a Federal Highway/Federal Transit Administration seminar on the application of pricing principles to congestion management, held in Washington, DC, on July 23, 1991. The seminar provided an opportunity for

participants to discuss congestion pricing issues. This document consists of the five presentations and the discussions which followed each presentation. A complete transcript of the proceedings can be obtained by writing to the Federal Highway Administration, HPP-23, Room 3324.

High-Occupancy Vehicle Project Case Studies: Historical Trends and Project Experiences. Research Report 925-4. August 1992, 68pp, Texas Transportation Institute, The Texas A&M University System, Turnbull KF, Report No. FTA/TX-89/1-025-4.

Available from:
Federal Transit Administration
Office of Planning, TGM-20
Washington, DC 20590

This document is the fourth report prepared as part of a 3-year assessment of HOV lanes located either on freeways or in separate rights-of-way in North America. It presents an examination of historical trends, experiences, and impacts of 6 HOV project case study sites, namely: Houston TX, Minneapolis MN, Orange County CA, Pittsburgh PA, Seattle WA, and Washington DC/Northern Virginia. Other HOV facilities are analyzed using the 9 evaluation measures developed and discussed in this report. Results of this study indicate that the HOV case studies and the other HOV facility studies do provide significant benefits and are effective transportation improvements. Information in this report should be useful to transportation professionals interested in ensuring that existing and planned HOV projects are developed and operated in a cost-effective and efficient manner.

Impact of Various Land Use Strategies on Suburban Mobility.

December 1992, 220pp, Middlesex Somerset Mercer Regional Council, Stallsmith E, (FTA-NJ-08-7001-93-1).

Available from:

National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB93-208163.

This report documents the Middlesex Somerset Mercer (MSM) Regional Council and its team of technical consultants study on the interaction between suburban land use trends and regional traffic conditions. It tested the concept of higher density, mixed-use centers in a suburban setting in order to assess the type and level of transportation benefits that might occur. Results verify what had previously been theory, i.e., that concentrating new suburban development into higher density, mixed-use centers will slow the growth of regional vehicular use. The study tested the traffic impact of locating the region's new employees in Trenton and New Brunswick, and in tightly clustered suburban employment centers. Under scenarios proposed in the study, new residents would work and shop closer to their homes. Commuters would have transit and ridesharing opportunities available, and a significant number would take advantage of these choices because of incentives provided by regional demand management policies. The study demonstrated that this approach to land use would create a significant reduction in the growth in traffic.

The Miami Jitney.

September 1992, 73pp, Urban Mobility Corporation, in association with KPMG Peat Marwick Mundle & Associates, Inc., (FTA-DC-06-0656-92-1).

Available from:

National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-146256

Although private jitneys have been a part of Miami's transportation scene for many years, the current and rapid proliferation of unlicensed jitney operations has created heated debates and conflicting views as to the role and impact of jitney operations in Miami. This report presents the findings and conclusions of the Miami jitneys study. The study intent was to determine whether and how the private minibus/jitney service might be most productively integrated into Dade County's public transportation system without jeopardizing private enterprise and public mobility and safety. This report provides a historical overview of jitney services, the jitney market, and the impact of jitney operations on the Metrobus system.

Reverse Commute Transportation Emerging Provider Roles.

March 1992, 130pp, University of Arizona, Rosenbloom S, (FTA-TX-11-0021-92-1).

Available from:

National Technical Information Service/NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-120111

This study reports the findings of a research project designed to identify and evaluate both historical and contemporary reverse commute (RC) experiments and projects. It identifies the socio-economic and geographic conditions which create markets for RC services in local communities. The report describes and compares methods of providing home-to-work services for inner city residents employed or

seeking employment in suburban areas, with special emphasis on new roles for private sector operators. The study evaluates the conditions under which various models of RC services, and alternative providers, do or could have long term viability or be integrated into an existing transit system. The study notes that there is an important role for private entrepreneurs in reverse commuting, largely as contractors to public agencies and transit operators.

Sixth National Conference on High Occupancy Vehicle Systems. Moving into the 21st Century .

June 1993, TRB Circular No. 409, Transportation Research Board.

Available from:

Transportation Research Board
2101 Pennsylvania Avenue, NW
Washington, DC 20418
Order No. TRB Circular 409

These proceedings summarize the highlights from the Sixth National Conference on High-Occupancy Vehicle Systems, which was held in the fall of 1992 in Ottawa, Ontario. The conference brought together transportation professionals from both the United States and Canada. The Conference theme--*Moving into the 21st Century*--provided the overall focus for the keynote speeches, general sessions and workshops. A wealth of information was presented and discussed on new HOV projects.

Suburban Parking Economics and Policy: Case Studies of Office Worksites in Southern California.

September 1992, 144p, California State Polytechnic University, Pomona, Wilson RW, (FTA-CA-11-0036-92-1).

Available from:

National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-14428

This research study explores issues of parking supply and demand, parking pricing, and parking policy in the suburbs. Ten case studies are included, representing three overall types of developments: small single-purpose projects under 50,000 square feet, medium-sized projects between 50,000 and 200,000 square feet, and large-scale projects over 200,000 square feet. The study concludes that parking is substantially oversupplied at suburban office worksites, and that employers rarely receive appropriate price signals about the cost of providing parking.

Transportation Management Associations in the United States.

May 1992, 176pp, Georgia Institute of Technology, Meyers M. and Ferguson E, (FTA-GA-11-0022-92-1).

Available from:

Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-92-22 .

This report examines the use of transportation management associations (TMAs) as institutional arrangements for implementing transportation demand management strategies at large urban and suburban employment activity centers. Over 110 TMAs were identified. The issues investigated included TMA initiation, leadership, corporate membership, budgeting and finance, including membership dues revenue, goals and objectives, products and services, performance monitoring and evaluation, and short term

over 200,000 square feet. The study concludes that parking is substantially oversupplied at suburban office worksites, and that employers rarely receive appropriate price signals about the cost of providing parking.

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Rural & Specialized Transit

Final Report on the DOT/DHHS Coordination Roundtable.
August 1992, 29pp, Joint DOT/DHHS Coordinating Council on Human Services.

Available from:
Technology Sharing Program
Department of Transportation

Washington, DC 20590
Order No. DOT-T-93-06

This report summarizes the major findings of the Coordination Roundtable meeting that was held on August 12, 1992, at the Ritz Carlton Hotel in Arlington, Virginia. The meeting was sponsored by the Joint DOT/DHHS Coordinating Council on Human Services Transportation. The purpose of the meeting was to identify key issues related to the development and provision of coordinated transit services, and to recommend specific actions to further encourage and facilitate coordinated transportation.

RTAP National Program, Technical Assistance Series. Intercity Bus Transportation: New Opportunities for Rural America.

1993, Brief Number 11, Federal Transit Administration and Community Transportation Association of America, (FTA-TTS-31-93).

Available from:
Community Transportation Association of America (CTAA)
1440 New York Avenue, NW, Suite 440
Washington, DC 20590

Because of the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, the FTA's Section 18 rural transit program now has funds set aside for intercity transportation in rural areas. This brief describes intercity transportation and the new opportunities it offers rural transit agencies. The purpose of the series is to extend the reach of the FTA/RTAP National Peer-to-Peer Technical Assistance Network.

Ruralization of Risk Management: A Handbook for Small Transit Operators. December 1992, 160pp, North Carolina A&T State University, Walther ES, (FTA-NC-11-0018-92-1).

Available from
Technology Sharing Program
Department of Transportation
Washington DC 20590
Order No. DOT-T-93-14

This report is an attempt to tell the story of risk management in an easy-to-read, to the point and helpful way. The report provides an overview of risk management concepts in a non-technical fashion for the operators of rural transit systems. The document begins with a general introduction to risk management, including the five key parts of a risk management program. It discusses liability exposures, and covers the characteristics of effective risk reduction and loss control programs. The document also reviews typical components of insurance contracts (policies). As a tool to facilitate risk assessment, the

report proposes a risk exposure questionnaire for rural public transit systems, and describes its use. Appendices include a literature review and bibliography on the topic.

The Tenth National Conference on Rural Public Transportation: Proceedings, Asheville, North Carolina, October 13-16. May 1992, 93pp, University of North Carolina.

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-93-29

The theme, "Yesterday, Today and Tomorrow," provided the foundation for exploring important issues, namely--accessible, affordable transportation. This proceedings report contains overviews of more than half of the conference sessions conducted. The speakers' papers and/or presentation outlines are also included in this report.

SAFETY AND SECURITY

Development of Analytical Techniques for Risk Management Training.

November 1992, 66pp, Worcester Polytechnic Institute, Barnett JR, (FTA-MA-11-0050-92-1).

Available from:

National Technical Information Service/ NTIS
Springfield, VA 22161
NTIS Order No. PB 93-146066.

This project developed an orderly, systematic framework for rail transit system fire safety analysis. The engineering method is a new risk management tool that provides a cost effective means to evaluate fire safety systems.

Fire Safety Countermeasures for Urban Rail Vehicles.

July 1992, 76pp, Volpe National Transportation Systems Center, Hathaway WT and Baker J, Report No. FTA-MA-06-0200-92-1.

Available from:

Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590

This report identifies fire safety countermeasures that may be implemented to prevent ignition, slow down or contain the fire when ignition occurs, and facilitate passenger evacuation in existing and new rail transit vehicles. These countermeasures can be implemented in the following areas: vehicles, equipment, procedures, human factors, training, information management and data analysis.

Recommended Emergency Preparedness Guidelines for Urban, Rural and Specialized Transit Systems. Final Report.

January 1991, 134pp, Volpe National Transportation Systems Center, Hathaway WT,

Report No: FTA-MA-06-0196-91-1.

Available from:

Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590

This report explores techniques to deal with emergencies in small transit agencies, namely: passenger falls; vehicle breakdown, collision, fire or rollover; driver incapacitation; severe weather; and others. It contains recommendations to help transit properties and emergency response organizations evaluate and modify or supplement their emergency response plans, procedures, training, and vehicle features. The report should be useful to managers of small transit systems.

Recommended Emergency Preparedness Guidelines for Elderly and Disabled Rail Transit Passengers.

February 1992, 80pp, Volpe National Transportation Systems Center, Hathaway WT,

Report No. FTA-MA-06-0186-89-1.

Available from:

Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590.

This document contains recommendations designed to assist rail transit system and emergency response organization personnel in evaluating and modifying or supplementing their emergency response plans to address the needs of elderly and disabled passengers. The report is a supplement to the FTA report titled *Recommended Emergency Preparedness Guidelines for Rail Transit Systems*.

Safety Management Information Statistics (SAMIS): 1991 Annual Report.

February 1993, 28pp, Volpe National Transportation Systems Center, Rudich R, Report No. FTA-MA-26-0009-93-1.

Available from:
Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590

This annual report is a compilation and analysis of mass transit accident and casualty statistics reported by transit systems in the United States during 1991 under the FTA Section 15 reporting system. The report compiles uniformly collected comprehensive safety reports from nearly 600 agencies and provides a wealth of detail unmatched by any other mode of transportation. Transit modes covered in this report include: Automated Guideway, Commuter Rail, Demand Response, Motor Bus, Rapid Rail, Light Rail, and Vanpool.

Standardization of Availability, Locality, and Use of Safety Equipment on Urban Transit Buses. Final Report

December 1992, KETRON Division of the Bionetics Corporation, Balog JN and Gribbon RB, Report No. FTA-TTS-3-92-1.

Available from:
Federal Transit Administration
Office of Technical Assistance & Safety
Washington, DC 20590

This document concludes a project undertaken to identify guidelines that will correct the problems encountered by rescue forces while attempting to gain entry to shut down and evacuate urban transit buses involved in an emergency or accident. This final report presents: the availability, location, and use of eleven key safety components on six urban transit bus models; the process used in the development of standardization guidelines; and proposed guidelines for the potential standardization of ten key safety components on urban transit buses. The guidelines presented in this report are the result of original research and development efforts by KETRON in concert with input from an inter-industry Guidelines Development Committee, representing vehicle manufacturers, engine suppliers, the American Public Transit Association, FTA, the VNTSC, maintenance managers, transit authorities, emergency response forces, bus window suppliers, and other vendors.

TECHNOLOGY DEVELOPMENT

Alternative Electric Energy Sources for Rail Transit. Final Report, Phase 1. January 1993, 273 pp, Carnegie Mellon Research Institute, Rail Systems Center, Uher RA and Howard J, (FTA-PA-06-0120-93-1).

Available from:
National Technical Information Service/NTIS
Springfield, Virginia 22161
Contact NTIS at (703) 487-4650.

Electrical energy costs for rail transit systems in North America constitute the second largest item in annual operating budgets. The purpose of this project was to investigate the feasibility of electrically operated rail transit systems using alternative sources of power, i.e., energy storage, non-native (local) utility generation, non-utility generation, and self generation, as an energy cost reduction strategy. This report discusses energy storage and bypass and the conditions required for a rail transit system seriously considering an alternative energy source. The work included reviewing current rail transit energy costs, use patterns, rate structures, and forecasting future electric energy needs. Results of energy cost reduction strategies used by the four participating rail transit systems are analyzed in separate sections. Technical, institutional, and regulatory issues are discussed along with opportunities for alternative energy sources (energy storage and bypass) and steps to alternative power purchases. A description of a group of computer programs known as the Rail Transit Energy Management Model is included in Appendix A. Appendix B contains information on the electric utility industry.

Cold Weather Transit Technology Program. Volume 1: Executive Summary. December 1992, 46pp, University of Notre Dame, Berry WB and Kahle KH, (FTA-IN-06-0018-92-1).

Available from:
National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB93-207421.

This volume focuses on issues surrounding the development of the radio frequency (RF) third rail deicing system. Three prototype systems were developed and tested. This report presents a summary of the research effort aimed to develop a radio frequency deicing system for rail transit. The summary includes comparative cost analysis with heated rail, RF coil design, prototype RF system design, and testing of the prototype on the Massachusetts Bay Transportation Authority test track. A review of the development of the weather station precursor/icing prediction system is included in this volume.

Cold Weather Transit Technology Program. Volume 2: Coil Design for the Radio Frequency Third Rail Deicer. Final Report. September 1992, 90pp, University of Notre Dame, McFadden CD and Strieter WE, (FTA-IN-06-0018-92-2)

Available from:
National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB93-207439

This report documents the basic background theory used in the design decisions for the radio frequency (RF) coil and RF generator which made up the RF Third Rail Deicer Prototype Test System. Section 1 reviews two coil designs and the C-coil and Z-coil. These coils are best adapted to solid state and vacuum technologies. Section 2 presents an approach to the nonlinear thermal problem associated with melting and refreeze of the ice layer adjacent to the third rail steel surface.

Cold Weather Transit Technology Program. Volume 3: Development and Test of the Radio Frequency Third Rail Deicer System. Final Report.

September 1992, 94pp, University of Notre Dame, Kleinman RL and Bernard PE, (FTA-IN-06-0018-92-3).

Available from:

National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB93-206712.

This report describes the activities, accomplishments, and results of the actual field tests of a special test car equipped with radio frequency (RF) third rail deicing equipment on the Massachusetts Bay Transportation Authority system.

Cold Weather Transit Technology Program: Volume 4: Heated Rail vs RF Third Rail Deicing. Final Report.

September, 128pp, University of Notre Dame, Berry WB and Kleinman RL, (FTA-IN-06-0018-92-4)

Available from:

National Technical Information Service/ NTIS

Springfield, Virginia 22161
NTIS Order No. PB 93-206738.

This report presents an analysis of the heat required to maintain the temperature of third rail above freezing during weather conditions that could result in icing. The purpose is to compare heated rail to radio frequency (RF) deicing. Volume 4 discusses a cost analysis that compares costs for a single event, annual costs based on weather history, maintenance costs and initial installation costs. The results show the RF third rail deicer system to be the cost effective application for a future design (marketable) model.

Cold Weather Transit Technology Program. Volume 5: Icing Precursor Measurement - The Automated Weather Station. Final Report.

September 1992, 150pp, University of Notre Dame, Berry WB and Kleinman RL, Report No. FTA-IN-06-0018-92-5.

Available from:

Federal Transit Administration
Office of Technical Assistance
Washington, DC 20590

The research effort described in this report is focused on the development of an automated local weather station. Works in progress by highway departments and airfields around the Nation and abroad are referenced in this report. A gas-electronic thermometer for third rail temperature measurement was designed and tested. The basic measurements required for testing are described in this report, and approaches to definition of a prediction algorithm are discussed.

Cold Weather Transit Technology Program. Volume 6: Projected Radio Frequency Third Rail Deicer System Implementation. Final Report.

September 1992, 56pp, University of Notre Dame, Berry WB and Kleinman RL, Report No. FTA-IN-06-0018-92-6.

Available from:

Federal Transit Administration
Office of Technical Assistance
Washington, DC 20590

This report sets forth a practical combination of equipment that would allow a deicer system to be used on rail transit systems. It anticipates the new construction of a complete car and equipment specifically for that purpose. This report incorporates the basic components already demonstrated, and does not attempt to modify the concept or equipment selections previously made. Overall, the report reviews the basic design criteria for implementation of the radio frequency (RF) Third Rail Deicer System which is patterned after the prototype successfully tested on the Massachusetts Bay Transportation Authority Test Track during the Winters of 1990-91 and 1991-92.

Conducting Pre-Award and Post-Delivery Bus Audit Reviews.

September 1993, 78pp, Booz, Allen & Hamilton, Inc.
Report No. FTA-DC-90-7713-93-1

Available from:

Federal Transit Administration
Office of Grants Management, TGM-12
Washington, DC 20590

This report discusses the Federal regulations pertaining to the procurement of transit buses by recipients of Federal funds, namely, the *Pre-Award and Post-Delivery Audits of Rolling Stock Purchases, Title 49 of the Code of Federal Regulations*. This manual provides guidance to recipients of Federal funds to help them comply with the two parts of the rule: (1) the pre-award requirements **before** entering into a contract with a manufacturer for the procurement of buses, and (2) the post-delivery review requirements **before** the title of the vehicles is transferred to the recipient, or **before** the buses are placed into transit service. For additional information on bus audit reviews, contact Mr. George Izumi, Federal Transit Administration, Grants Management Office, (202) 366-6475.

Development of Track Maintenance Training and Maintenance Management Information System Programs.

June 1993, 57pp, Washington Metropolitan Area Transit Authority, Bassily FP, (FTA-DC-06-0333-92-1)

Available from:

National Technical Information Service/ NTIS
Springfield, VA 22161
NTIS Order No. PB 93-118040.

This report documents the development of a Track Maintenance Training program and a Track Maintenance Information System as part of an overall Rail Maintenance Management Information System. The training program consists of a curriculum of courses, a core training program and an ongoing program of supervisory training courses.

Photogrammetry Assessment: New York City Subway. Final Report.

July 1993, 148pp, NPS Engineering & Technical Services,
Report No. FTA-NY-06-0078-93-1.

Available from:

National Technical Information Service/NTIS
Springfield, Virginia 22161
Contact NTIS at (703) 487-4650

This report summarizes the assessment of three photogrammetric techniques tested in subway tunnels of the New York City Transit Authority: (1) METADAT, close range terrestrial photogrammetry using stereo photographs; (2) SACT, system for continuous measuring of tunnel that provides sectional photographs from metric cameras; and (3) Videography, a technique that uses a video camera to record continuous planar pictures from which dimensional data can be obtained. These techniques measure tunnel movement over time, and have been used in documenting tunnels in Europe. The study was conducted in 2 phases. In Phase 1, the three techniques were tested on the unused tracks at the Transit Museum to provide an assessment of the methodology, productivity, and dimensional accuracy of each technique. Phase 2 was performed in the Joralemon Street tunnel and included more extensive testing of the three techniques, as well as development of applications that complimented the methodology and results of each technique.

Status of Low-Floor Transit Bus Development. Final Report.

May 1992, 37pp, Battelle, Giuliani CI and Francis GA,
Report No. FTA-OH-06-0060-92-1.

Interlibrary loan available from:

Transportation Library
Northwestern University Library
Evanston, IL 60201
telephone (708) 491-5273
FAX (708) 491-8601

or

Institute of Transportation Studies Library
University of California-Berkeley
Berkeley, CA 94720
telephone (510) 642-3604
FAX (510) 642-9180

The Americans With Disabilities Act (ADA) requires that transit buses be accessible to virtually all disabled persons. For transit this means that accessibility approaches other than lifts may be required--such as low-floor buses. This report describes the status of low-floor bus developments in North America and Europe and the current availability from both European and North American bus manufacturers. These current developments are analyzed to determine whether they are meaningful contributions to the ultimate goal of complying with the new accessible vehicle guidelines. The report discusses the differences between U.S. and European bus design objectives, passenger seating, multi-level floor interior, as well as specific legislation and requirements for accommodating disabled persons on transit buses.

TRANSIT ACCESSIBILITY

Accessibility Handbook for Transit Facilities.

July 1993, 242pp, KETRON Division of Bionetics Corporation, Balog JN, (FTA-MA-06-0200-92-1).

Available from:

National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-112498.

This document provides detailed information to help transit designers and planners to construct and renovate transit facilities so that they are accessible to individuals with disabilities of all types, including mobility impairments requiring the use of a wheelchair. Approaches are developed to assure compliance with the September 1991 regulations implementing the Americans With Disabilities Act (ADA) for transit and paratransit services.

Accessible Transportation and Mobility. Planning and Administration. Transportation Record No. 1378.

January 1993, 80pp, TRB Record No. 1378, Transportation Research Board.

Available from:

Transportation Research Board
National Academy Press
Washington D.C. 20418
Order No. TRB Record No. 1378

Most of the papers in this Record are from the *13th National Conference on Accessible Transportation and Mobility* held October 23-28, 1992, in Tampa, Florida. Several papers focus on the implications of the

Americans With Disabilities Act of 1990 (ADA). Subject areas discussed in the papers include 1) the service-route concept, which has the potential of satisfying ADA requirements with a small capital investment, and 2) a demonstration project to teach persons with disabilities to train other disabled persons to use fixed-route transit and to train operators. Strategies are presented that help mentally impaired persons with transit handicaps to convert from institutional settings to community-based living, along with the development of transit service options to help persons with disabilities overcome barriers that limit employment opportunities. Three papers address the mechanics of securement and restraint of wheeled mobility aids in public transit vehicles, the engineering appraisal of wheelchair lifts, and procedures for assessing the reliability of wheelchair lifts. Two papers come from the United Kingdom: one focuses on past and current experience in accessible transportation, and the other discusses strategic management in specialized transportation services. Other papers focus on computerized reservations and scheduling in the paratransit industry, the institutional framework for coordination between agencies in the aging and transportation sectors, and technologies for improving independence.

ADA Public Participation Handbook.

1993, KETRON Division of the Bionetics Corporation and Project ACTION, Balog JN, Schwarz A, Rimmer JE and Hood MM, (FTA-DC-26-0002-93-6).

Available from:
Project Action Resource Center
1350 New York Avenue, NW, Suite 711
Washington, DC 20590

Public participation is important to the implementation of the Americans With Disabilities Act (ADA) paratransit requirements. This handbook presents a wealth of information regarding each of the public participation requirements of the ADA. Each requirement is discussed in a separate section and authored to stand alone. Each section contains a step-by-step list to follow to complete a public activity, as well as, numerous samples of public participation materials, documents, practices, schedules and other information that have been used by transit agencies nationwide. Transit agencies across the country contributed their experiences and knowledge to the making of this handbook.

ADA Transportation Technical Assistance Series, 1993. Notebook.
1993, Project ACTION, Simon R.
(FTA-DC-26-0002-93-7).

Available from:
Project ACTION Resource Center
1350 New York Avenue, NW, Suite 711
Washington, DC 20005

This guidebook (notebook) consists of a series of technical assistance guides; each guide is authored to stand alone. The guidebook is designed to inform and to assist the public and private transit agencies and disability organizations in implementing the transportation regulations of the ADA. The following five technical assistance guides are contained in this notebook:

Identifying People with Disabilities in the Community and Their Transportation Needs is one of a series of technical assistance guides designed for transit managers, organizations, and other groups who are planning new programs and services to comply with ADA regulations.

Outreach and Marketing is a compilation of knowledge and experience of transit providers and disability advocates working in partnership at the community level on demonstration programs funded by Project ACTION. Summaries of these outreach and marketing programs are included in this guide.

Training Consumers with Disabilities is a technical assistance guide designed to assist public and private transit agencies and disability organizations involved in planning consumer training programs.

Training Transit Personnel is a technical assistance guide designed to assist public and private transit agencies and disability organizations involved in implementing the transit personnel training requirements of ADA.

Technology Service Planning and Regulations, the fifth guide in this notebook, is a compilation of case studies in accessibility problem-solving. It summarizes programs designed to examine specific accessibility problems, to create design solutions, and to present suggestions and recommendations for replication. Strategies used from these experiences are highlighted. For additional information, contact Project ACTION: Toll Free 800-659-NIAT (Voice/TTY), or call (202) 347-3066.

Americans with Disabilities Act (ADA) Paratransit Eligibility Manual.
September 1993, 380pp, EG&G Dynatrend, under contract to Battele, Volpe National Transportation Systems Center, (FTA-TGM-30-93-1).

Available from:
Technology Sharing Program
Department of Transportation
Washington, DC 20590
Order No. DOT-T-94-01

The regulations issued by the Department of Transportation, which implement Section 223 of the Americans with Disabilities Act of 1990 (ADA), (1) specify to whom and under what circumstances complimentary paratransit service is to be provided, and (2) require public entities to develop and administer a process for determining which individuals meet the regulatory criteria for eligibility. This manual is designed to provide guidance to transit providers in the development and implementation of ADA paratransit eligibility determination processes. Common questions raised about eligibility are addressed. Experience gained in the first one and a half years of implementation of the paratransit provisions is summarized. Public entities, experienced with eligibility determination, were contacted and copies of their forms and procedures were collected. Key issues raised by these transit providers are included in the text and copies of sample forms and policies are provided in the appendices. Chapters 1 and 2 of this manual thoroughly discuss the concept of ADA paratransit eligibility and describe the regulatory requirements which apply. Chapter 3 offers practical advice in designing and administering an eligibility

determination process. The final Chapter 4 focuses on key operational issues. It discusses the use of eligibility information in daily operations. Possible approaches to determining the eligibility of specific trip requests are reviewed and advanced technologies which can assist with trip-by-trip determinations are presented.

Application of the Quality Functional Deployment Method in Mobility Aid Securement System Design. Volume 1.
December 1992, 140pp, Oregon State University, Hunter-Zaworski KM and Ullman DG, (FTA-OR-11-0006-92-1).

Available from:
National Technical Information Service/ NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-207256

This report documents the research effort that successfully developed an automated "universal" securement/restraint system [identified as the independent locking securement system (ILS)]. The system will accommodate most wheeled mobility aids, including three-wheeled scooters, in common use on public transportation systems. The project involved the design, construction and testing of several prototypes, and the documentation of all project activities in 2 separate volumes. Volume 1 presents the application of the Quality Functional Deployment (QFD) method, the development of the final design specifications and the state of the art in securement systems. Volume 2 describes the ILS system concept and documents the results of the human factors testing, static and dynamic testing, and makes recommendations for the final design concept.

Assessment of Detectable Warning Devices for Specification Compliance or Equivalent Facilitation. Final Report.

December 1992, 76pp , Volpe National Transportation Systems Center, Spiller D and Multer J, (FTA-DC-90-7710-92-1).

Available from:

National Technical Information Service /NTIS
Springfield, Virginia 22161, .
NTIS Order No. PB 93-134963

This report evaluates the Americans With Disabilities Act Accessibility Guidelines (ADAAG) specification for detectable warnings and the applicability of equivalent facilitation to the development of detectable warning devices. Ambiguities in the specification are identified and solutions are recommended to address these problems. This report should be useful to transit agencies unable to comply with the ADA detectable warning specification. The guidelines provide an alternative mechanism by which accessibility requirements may be met. Equivalent Facilitation permits the use of alternative designs provided they give equal or better access. The implications of departures from the specification are discussed and several tests are suggested for determining whether an alternative design meets the equivalent facilitation criterion.

Combined Research Results.

May 1993, Project ACTION, Simon R, (FTA-DC-26-0002-93-5).

Available from:

Project ACTION Resource Center
1350 New York Avenue, NW
Washington, DC 20005

This report contains summaries of interviews with Project ACTION's Steering Committee

members, Resource Council members, and other experts on transit issues for people with disabilities. The comments and leads they provided laid the foundation for preparation of Project ACTION's Critical Needs Assessment and Innovation Analysis. The report also contains a Literature Search Review, Critical Needs Assessment, and Innovation Analysis.

Development of an Independent Locking Securement System for Mobility Aids on Public Transportation Vehicles. Volume 2

December 1992, 86pp, Oregon State University, Hunter-Zaworski KM and Zaworski JR, (FTA-OR-11-0006-92-2).

Available from:

National Technical Information Service/NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-207264

This is Volume 2 of a successfully developed automated "universal" securement/restraint system that will accommodate most wheeled mobility aids, including three-wheeled scooters, in common use on public transit systems. This report describes the independent locking securement (ILS) system concept and documents the results of the human factors testing, static and dynamic testing, and makes recommendations for the final design concept.

Improving Bus Accessibility Systems for Persons with Sensory and Cognitive Impairments. Final Report.

August 1993, 136pp, Oregon State University, Hunter-Zaworski KM and Hron M, (FTA-OR-11-0007-93-1).

Available from:

National Technical Information Service/NTIS
Springfield, Virginia 22161
Contact NTIS at (703) 487-4650

This study examines issues concerning persons with sensory and cognitive impairments and their access to fixed-route transit services. The research goals are to specify operating guidelines, suggest technological changes, and offer operating policy and training program modifications that solve problems of transit access for persons with sensory and cognitive impairments. The study examined existing technologies and programs currently in use in North America in order to determine where the access problems exist in fixed-route bus transit. The report begins by defining terms and various disabilities, discussing limitations, and describing the tasks required to ride a bus on a fixed-route system. The literature review considers technologies and exemplary practices to improve bus accessibility and is organized according to the tasks required to complete a transit trip. The study also includes access signage and symbolic encoding of information, as well as results of the survey and interviews with professionals who provide training and transit to persons with cognitive impairments. The study concludes that, for persons with cognitive impairments, technological solutions are not the answer to increase bus accessibility. What is needed is personal interaction, transit personnel and user training, and standardization of visual signage.

Project ACTION (Accessible Community Transportation in Our Nation) Local Demonstration Program: Phase 1 1991-1992 Project Profiles.

December 1992, 85pp, Project ACTION, Simon R, (FTA-DC-26-0002-93-1).

Available from:
Project ACTION Resource Center
1350 New York Avenue, NW
Washington, DC 20005

Project ACTION was established by Congress in 1988 as a National research and

demonstration project to improve access to transportation services for people with disabilities, and to encourage and facilitate cooperation between transportation providers and the disability community. Project ACTION funded the 25 local demonstration projects listed in this annual report in February 1991. The report profiles the goals and accomplishments of each demonstration project listed. Projects are arranged categorically and intended to provide a quick overview of each project. For more information about these demonstration projects and other activities underway, contact Project ACTION at the National headquarters in Washington, DC (202/347-3066, or TDD 202/ 347-7385).

Project ACTION Local Demonstration Program. Phase 1 1991-1992. Training Programs for Transit Personnel.

January 1993, 140pp, Project ACTION, Simon R, (FTA-DC-26-0002-93-2).

Available from:
Project ACTION Resource Center
1350 New York Avenue NW, Suite 711
Washington, DC 20005

This report documents the local training and demonstration projects funded by Project ACTION in February 1991. Twenty-one projects were funded under five Congressionally mandated categories and four under the "other" category. The projects were directed to identify persons with disabilities and their transportation needs; develop outreach and marketing programs; develop training programs for transit personnel and transit users with disabilities; eliminate barriers; and research other accessibility issues. For additional information, contact Project ACTION in Washington, DC at (202) 347-3066, or TDD (202) 347-7385.

Project ACTION Local Demonstration Program. Phase 1 Training Programs for Transit Users With Disabilities. January 1993, 150pp, Project ACTION, Simon R. (FTA-DC-26-0002-93-3).

Available from:
Project ACTION Resource Center
1350 New York Avenue, NW
Washington, DC 20005

Project ACTION (Accessible Community Transportation in Our Nation) is administered by the National Easter Seal Society under a cooperative agreement with the FTA. This report presents the 25 local demonstration projects funded by Project ACTION. Some of the subject areas addressed in this report are: Training Transit Users with Disabilities as Driver Trainers; Training Curriculum for People with Disabilities; Employment and Carpooling Training; Accessing Community Transportation; Outreach, Marketing and Training; and Mobility Training.

Reconnaissance Survey of Selected Transit Agencies.

May 1993, 280pp, Project ACTION, Simon R. (FTA-DC-26-0002-93-4).

Available from:
Project ACTION Resource Center
1350 New York Avenue, NW
Washington, DC 20005

In February 1989, Project ACTION initiated a reconnaissance survey of 112 selected transit systems around the country. The purpose of the survey was to identify general patterns and trends regarding the provision of accessible transit services for people with disabilities. This report provides a discussion of survey objectives and the types of information requested, methodology, verification process and survey limitations, results, and general

patterns or trends with respect to the provision of accessible transit services.

Strategies for Implementing a Standee-on-Lift Program for Fixed-Route Bus Service. Final Report .

April 1993, 44pp, Volpe National Transportation Systems Center, Ryan PH and Boyd MA, (FTA-MA-06-0201-93-1).

Available from:
National Technical Information Service/NTIS
Springfield, Virginia 22161
NTIS Order No. PB 93-227932

The Americans with Disabilities Act (ADA) refers to individuals who use canes or walkers, or who have trouble climbing steps, as standees. The DOT regulations require that transit systems allow standees-on-lifts. The strategies contained in this document are designed to help transit agencies establish and improve their fixed-route bus service to standees. Four major areas of transit administration are addressed in this report: role of management in establishing policy for standees; role of operations in implementing a program for standees-on-lifts; various training programs and personnel policies that can enhance service to standees; and various outreach programs that can increase standee ridership and enhance standee-system relations. The ADA requirements for wheelchair lifts and their use by standees are summarized in the Appendix. This report was developed from input received from six transit systems: Seattle Metro, Portland Tri-Met, Washington Metro, New York City Transit Authority, San Francisco MUNI, and NJ Transit. It presents the common elements of these systems for employing a standee-on-lift program and discusses how other systems might use their ideas.

Transit Half-Fare Policies for the Elderly and Persons with Disabilities. Section 3047 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). July 1993, 12 pp, Federal Transit Administration, Marx P
Report No. FTA-TBP-10-93-1.

Available from:
Federal Transit Administration
Office of Budget & Policy, TBP-10
Washington, DC 20590

Section 3047 of the ISTEA states, in part, "The Secretary shall conduct a study of procedures for determining disability for the purpose of obtaining off-peak reduced fares under Section 5(m) of the Federal Transit Act. The study should review different requirements, degree of uniformity, and

degree of reciprocity between systems." This 12 page report to Congress examines transit systems in terms of whether or not transit half-fare policies for elderly and disabled patrons are uniform, and whether or not eligibility criteria are consistent. Data was collected from a 1991 National Easter Seals Society study that analyzed transit operations nationwide. Information collected included the fare charged, the basis for calculating discounts, and whether the fare was consistent during peak and off-peak hours. Over 330 transit systems were contacted, of which 160 provided extensive data on their levels of fixed-route accessibility, paratransit service provided, and alternative transportation available to the elderly and persons with disabilities in areas where the public transit system was not accessible.

UNIVERSITY TRANSPORTATION CENTERS

UTCP Report - University Transportation Centers Program 1988 - 1992

1993, The Pennsylvania State University,
The Pennsylvania Transportation Institute.

Available from:

University Transportation Centers
Clearinghouse

The Pennsylvania Transportation Institute

The Pennsylvania State University

Research Office Building

University Park, PA 16802-4710

Phone: (814) 863-3614

The University Transportation Centers Program (Program) is now in its fifth year of existence. It was established in 1987 by an act of Congress, and in 1991, The Intermodal Surface Transportation Efficiency Act (ISTEA, 1991) added three new Centers to the Program, bringing the total to thirteen Centers across the country. The Program is sponsored by the Federal Highway Administration and the Federal Transit Administration, each providing half the financial support. Education, research, and dissemination of promising results are the goals of the program. This status report presents each Center region-by-region. How they are accomplishing the program goals

of research, technology transfer, and education, according to their individual mission, is presented in this status report.

The final section of the report lists the research projects, the technology transfer projects, and the project publications for each of the Regions.

University Transportation Centers Project Abstracts for Fiscal Year 1993.

November 1993, 118 pp, Office of University Research, U.S. Department of Transportation,

Available from:

Office of University Research, DUR-1

U.S. Department of Transportation

400 7th Street, SW, Room 10309

Washington, DC 20590-0001

Phone (202) 366-5442

This Abstracts report presents the projects that were sponsored under the FY 1993 University Transportation Centers Program. The report includes projects descriptions of the research in progress as well as a listing of published Program research reports. The Program is funded jointly by the Federal Transit Administration and the Federal Highway Administration, and managed by the Research & Special Programs Administration of the U.S. Department of Transportation.

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