

## National Transportation Library

### Section 508 and Accessibility Compliance

The National Transportation Library (NTL) both links to and collects electronic documents in a variety of formats from a variety of sources. The NTL makes every effort to ensure that the documents it collects are accessible to all persons in accordance with Section 508 of the Rehabilitation Act Amendments of 1998 (29 USC 794d), however, the NTL, as a library and digital repository, collects documents it does not create, and is not responsible for the content or form of documents created by third parties. Since June 21, 2001, all electronic documents developed, procured, maintained or used by the federal government are required to comply with the requirements of Section 508.

If you encounter problems when accessing our collection, please let us know by writing to [librarian@bts.gov](mailto:librarian@bts.gov) or by contacting us at (800) 853-1351. Telephone assistance is available 9AM to 6:30PM Eastern Time, 5 days a week (except Federal holidays). We will attempt to provide the information you need or, if possible, to help you obtain the information in an alternate format. Additionally, the NTL staff can provide assistance by reading documents, facilitate access to specialists with further technical information, and when requested, submit the documents or parts of documents for further conversion.

### Document Transcriptions

In an effort to preserve and provide access to older documents, the NTL has chosen to selectively transcribe printed documents into electronic format. This has been achieved by making an OCR (optical character recognition) scan of a printed copy. Transcriptions have been proofed and compared to the originals, but these are NOT exact copies of the official, final documents. Variations in fonts, line spacing, and other typographical elements will differ from the original. All transcribed documents are noted as "Not a True Copy."

The NTL Web site provides access to a graphical representation of certain documents. Thus, if you have any questions or comments regarding our transcription of a document's text, please contact the NTL at [librarian@bts.gov](mailto:librarian@bts.gov). If you have any comment regarding the content of a document, please contact the author and/or the original publisher.

# PROJECT FARE TASK III REPORT

## URBAN MASS TRANSPORTATION INDUSTRY REPORTING SYSTEM DESIGN



JUNE 1973

INTERIM TASK III REPORT FOR  
NOVEMBER 1972 – JUNE 1973 PERIOD

PART I – TASK SUMMARY

AVAILABILITY IS UNLIMITED. DOCUMENT MAY BE RELEASED TO THE  
CLEARINGHOUSE FOR FEDERAL SCIENTIFIC AND TECHNICAL  
INFORMATION, SPRINGFIELD, VIRGINIA 22151, FOR SALE TO THE PUBLIC.

PREPARED FOR

DEPARTMENT OF TRANSPORTATION  
URBAN MASS TRANSPORTATION ADMINISTRATION  
400 SEVENTH STREET, S.W.  
WASHINGTON, D.C. 20590

ARTHUR ANDERSON & Co.  
WASHINGTON, D.C.

The contents of this report reflect the views of the Project FARE Industry Control Board and Arthur Andersen & Co. which are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policy of the Department of Transportation. This report does not constitute a standard, specification or regulation.

June 29, 1973

The Honorable Frank C. Herringer  
Administrator  
Urban Mass Transportation Administration  
U. S. Department of Transportation  
400 Seventh Street, S.W.  
Washington, D. C. 20590

Dear Mr. Herringer:

This is the third of four major task reports on Project FARE, the definition of uniform Financial Accounting and Reporting Elements for the urban mass transit industry. Part I of this report summarizes the work performed, the system developed and the recommendations identified in this task -- development of the candidate reporting system. Parts II and III, which are bound separately, present the detailed documentation of the reporting requirements for transit systems other than commuter rail systems. The system described in these volumes is to be tested at selected operating transit systems during the next major task. Part IV, which is also bound separately, covers the reporting requirements for commuter rail systems. The commuter rail reporting will be a modification of ICC Form A reporting rather than the totally new structure recommended for other transit systems.

Our work during Task III continued to provide direct contact with a broad cross section of the transit industry. Throughout this task, we have worked closely with the Industry Control Board and the Project FARE Technical Director for the Urban Mass Transportation Administration. To gain broader coverage, we invited a number of guests from local transit systems to participate in our meetings with the Industry Control Board. We also continued to participate in presentations on the current status of Project FARE at various conferences and seminars of the American Transit Association and the Institute for Rapid Transit. Through these activities, we have observed a high level of interest and industry cooperation in Project FARE. This type of industry support during the system design ensures that the reporting system will significantly benefit the transit industry and other potential system users. Moreover, this strong industry support has created the climate necessary for proceeding with the testing and implementation of the system.

In Task IV, the Project Team and the Industry Control Board will be testing the reporting system that has been designed. It is expected that the testing will reveal the need to make some modifications in the reporting system design. The report to be submitted upon conclusion of Task IV will include complete documentation of the reporting system after these modifications have been made.

For continuity purposes, and to allow this report to stand alone from the earlier task reports, we have included background information from the Task I and Task II reports in the Preface and Introduction of this report.

Very truly yours,

*Arthur Andersen & Co.*

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. UMTA-IT-06-0034		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Project FARE Task II Report Urban Mass Transportation Industry Reporting System Design				5. Report Date June, 1973	
				6. Performing Organization Code	
7. Author(s) David L. Harvey John W. Nagel William T. Van Lieshout				8. Performing Organization Report No.	
9. Performing Organization Name and Address Arthur Anderson & Co. 815 Connecticut Avenue, N.W. Washington, D. C. 20006				10. Work Unit No.	
				11. Contract or Grant No. DOT-UT-20008	
12. Sponsoring Agency Name and Address Urban Mass Transportation Administration 400 Seventh Street, S.W. Washington, D. C. 20590				13. Type of Report and Period Covered Interim Report For Task III, December, 1972 through June, 1973.	
				14. Sponsoring Agency Code	
15. Supplementary Notes Prepared in cooperation with Project FARE Industry Control Board and Wells Research Co.					
16. Abstract The report contains a description of the proposed uniform reporting system for the urban mass transit industry. It is presented in four volumes: Part I - Task Summary contains a description of how Task III was accomplished and the conclusions and recommendations reached at the end of the task. Part II - Reporting System Instructions contains general system instructions, prescribed accounting standards to be employed for this reporting and detailed definitions of all reporting categories in the system for transit operations other than commuter rail. Part III - Reporting System Forms contains copies of all of the forms used in the system with a cross reference to the appropriate sections of Part II. Part IV - Commuter Rail Reporting covers a description of proposed amendments to ICC Form A reporting for commuter rail systems.					
17. Key Words Urban Mass Transit Industry Financial Reporting Nonfinancial Operating Statistics Uniform Reporting System			18. Distribution Statement Availability is unlimited. Document may be released to the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151, for sale to the public.		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages	22. Price

Form DOT F 1700.7 (8-69)

## **PREFACE**

## PREFACE

Prior to 1971, the Accounting Committee of the American Transit Association had recognized an urgent need for comparative operating and financial data for the urban mass transit industry. The need for reliable, comparative financial and operating data was also recognized and expressed by researchers involved in industry analysis and planning activities.

In the spring of 1971, the American Transit Association (ATA) and the Institute for Rapid Transit (IRT) submitted a grant request to the Urban Mass Transportation Administration (UMTA) defining a proposed project to develop a uniform industry reporting system. This industry proposal was eventually modified and refined by UMTA, with industry participation and concurrence, into the formation of Project FARE (Uniform Financial Accounting and Reporting Elements). The project started on March 1, 1972, with a contract to Arthur Andersen & Co. as the prime contractor for Project FARE.

Under the contract, UMTA retains overall administrative control through its Project Technical Director who works directly with the Industry Control Board to provide policy direction for the project. The Industry Control Board provides direct input into the project through its eighteen members who represent a cross section of the urban mass transit industry. This Board

includes representatives from mass transit systems, commuter rail operations, the ATA, the IRT, the National Governor's Conference and the National League of Cities. The UMTA Technical Director and the Board meet with the contractor periodically to establish policy, provide direct input, evaluate progress and review future work plans for the project.

The primary objective of Project FARE is to develop and test a candidate reporting system which will accumulate transit industry financial and operating results by uniform categories. The system is to be designed so that it can be eventually implemented on an industry-wide basis. To ensure the feasibility of future implementation, the candidate reporting system will be tested for practicality and usefulness at selected operating sites.

Ultimately, the information collected through the industry-wide reporting system will be designed to address the needs of:

- Individual transit systems for comparing their performance with other transit systems with similar characteristics.
- Transit industry associations for monitoring industry performance.
- Federal, state and local government agencies for transit industry analysis and for financial assistance program administration.

Project FARE is divided into the following major tasks:

- Task I - Identify the information requirements of the potential users of the system.
- Task II - Survey the capability of selected transit systems to supply the information required.
- Task III - Develop a candidate system of reporting elements for which implementation is currently feasible.
- Task IV - Test implement the candidate system at selected transit systems.

Each of these tasks is to be concluded with the submission of a written task report by Arthur Andersen & Co. The report for Task I was submitted to UMTA in July, 1972, and contains a description of the proposed data considered useful for potential users of the system. The report for Task II was submitted to UMTA in November, 1972, and contains the findings of a survey of the industry's reporting capability. This is the report for Task III.

The report for Task III is contained in four separate volumes, this being the first of the four. Part I covers a description of the performance of Task III. Part II covers the detailed instructions and definitions for the reporting system. Part III covers the forms to be used in the reporting system. Part IV covers reporting for commuter rail systems.

## **TABLE OF CONTENTS**

TABLE OF CONTENTS

	<u>PAGE</u>
<u>PART I -- TASK SUMMARY</u>	
1. INTRODUCTION	1-1
1.1    Need for Industry Information Base	1-3
1.2    Existing Transit Industry Reporting Systems	1-4
1.3    Objectives of Project FARE	1-6
1.4    Organization of this Report	1-7
2. METHODOLOGY	2-1
3. REPORTING SYSTEM GENERAL DESIGN	3-1
3.1    Two Reporting Structures	3-1
3.2    General Design for Transit Systems	3-3
3.3    General Design for Commuter Rail Systems	3-8
4. CONCLUSIONS AND RECOMMENDATIONS	4-1
5. TASK IV PLANS	5-1
5.1    ICB Represented Test Sites	5-1
5.2    Other Test Sites	5-2
5.3    Commuter Rail Reporting - Development and Testing	5-4
5.4    Completion of Project	5-4

PART II -- REPORTING SYSTEM INSTRUCTIONS (Bound in  
separate volume.)

1. GENERAL INSTRUCTIONS	
1.1    Classifications of Reporting Transit Systems	
1.2    Accounting Records	
1.3    Accounting and Reporting Period	
1.4    Report Forms to be Completed	

TABLE OF CONTENTS (Cont'd)

- 1.5 Accounting Basis
- 1.6 Accounting Code Structure
  
- 2. ACCOUNTING PRACTICE INSTRUCTIONS
  - 2.1 Labor Distribution Accounting
  - 2.2 Fringe Benefit Accounting
  - 2.3 Accounting for Sales and Excise Taxes, Freight-in and Other Acquisition Costs
  - 2.4 Accounting for Repairable Items
  - 2.5 Accounting for Property Damage, Public Liability and Other Corporate Losses
  - 2.6 Property and Depreciation Accounting
  - 2.7 Expense Transfers
  - 2.8 Lease Accounting
  - 2.9 Capital Subsidy Accounting
  - 2.10 Revenue Accounting
  - 2.11 Passenger Statistics
  
- 3. ASSET REPORTING
  - 3.1 List of Asset Object Classes
  - 3.2 Definitions of Asset Object Classes
  - 3.3 Asset Summary Schedule Instructions
  - 3.4 Property Subsidiary Schedule Instructions
  - 3.5 ICC-FARE Cross Reference Guide for Asset Categories

TABLE OF CONTENTS (Cont'd)

- 4. LIABILITY REPORTING
  - 4.1 List of Liability Object Classes
  - 4.2 Definitions of Liability Object Classes
  - 4.3 Liability Summary Schedule Instructions
  - 4.4 Long-term Debt Subsidiary Schedule Instructions
  - 4.5 ICC-FARE Cross Reference Guide for Liability Categories
  
- 5. CAPITAL REPORTING
  - 5.1 List of Capital Object Classes
  - 5.2 Definitions of Capital Object Classes
  - 5.3 Capital Summary Schedule Instructions
  - 5.4 ICC-FARE Cross Reference Guide for Capital Categories
  
- 6. REVENUE REPORTING
  - 6.1 List of Revenue Object Classes
  - 6.2 Definitions of Revenue Object Classes
  - 6.3 Revenue Summary Schedule Instructions
  - 6.4 ICC-FARE Cross Reference Guide for Revenue Categories
  
- 7. EXPENSE REPORTING
  - 7.1 List of Expense Object Classes
  - 7.2 Definitions of Expense Object Classes
  - 7.3 List of Expense Functions
  - 7.4 Definitions of Expense Functions

TABLE OF CONTENTS (Cont'd)

- 7.5 Expense Reporting Forms Instructions
  - 7.6 Operators' Wages Subsidiary Schedule Instructions
  - 7.7 Other Hourly Wages Subsidiary Schedule Instructions
  - 7.8 Fringe Benefits Subsidiary Schedule Instructions
  - 7.9 Data Processing Questionnaire Instructions
  - 7.10 Sales and Excise Taxes Questionnaire Instructions
  - 7.11 Subsidies-in-Kind and Forgiven Indebtedness Questionnaire Instructions
  - 7.12 Pension Plan Questionnaire Instructions
  - 7.13 ICC-FARE Cross Reference Guide for Expense Categories
8. NONFINANCIAL OPERATING DATA REPORTING
- 8.1 List of Nonfinancial Operating Data Object Classes
  - 8.2 Definitions and Instructions for Reporting Weekday Time Periods
  - 8.3 Definitions and Instructions for Reporting Transit Way Descriptors
  - 8.4 Definitions and Instructions for Reporting Transit System Stop Descriptors
  - 8.5 Definitions and Instructions for Reporting Revenue Vehicle Inventory
  - 8.6 Definitions and Instructions for Reporting Energy Consumption
  - 8.7 Definitions and Instructions for Reporting Transit Service Personnel
  - 8.8 Definitions and Instructions for Reporting Transit System Employee Count

TABLE OF CONTENTS (Cont'd)

- 8.9 Definitions and Instructions for Reporting Revenue Vehicle Maintenance Performance Measures
  - 8.10 Definitions and Instructions for Reporting Revenue Vehicle Collision Accidents
  - 8.11 Definitions and Instructions for Reporting Noncollision Passenger Accidents
  - 8.12 Definitions and Instructions for Reporting Rail Rapid Transit Station Accidents
  - 8.13 Definitions and Instructions for Reporting Transit Service Supplied
  - 8.14 Definitions and Instructions for Reporting Transit Service Consumed
9. CENTRAL PROCESSING OF FARE REPORTS
- 9.1 General System Description
  - 9.2 Joint Cost Allocation Processing
  - 9.3 Property/Depreciation Processing
  - 9.4 Output Reports

PART III -- REPORTING SYSTEM FORMS (Bound in separate volume.)

TRANSIT SYSTEM IDENTIFICATION SHEET

1. ASSET REPORTING FORMS
- 100 Asset Summary Schedule
  - 110 Property Subsidiary Schedule Control Summary
  - 111 Property Subsidiary Schedule Revenue Vehicles
  - 112 Property Subsidiary Schedule Fixed Assets Other Than Revenue Vehicles

TABLE OF CONTENTS (Cont'd)

113	Property Subsidiary Schedule Related- Parties Lease Property
2. LIABILITY REPORTING FORMS	
200	Liability Summary Schedule
210	Long-Term Debt Subsidiary Schedule
3. CAPITAL REPORTING FORMS	
300	Capital Summary Schedule
4. REVENUE REPORTING FORMS	
400	Revenue Summary Schedule
5. EXPENSE REPORTING FORMS	
500 A	Single Mode Level A Expenses and Function Schedule
500 B	Single Mode Level B Expenses and Functions Schedule
500 M	Multi-Mode Expenses and Functions Summary Schedule
501 M	Multi-Mode Expenses and Functions Subsidiary Schedule
510	Operators' Wages Subsidiary Schedule
520	Other Hourly Wages Subsidiary Schedule
530	Fringe Benefits Subsidiary Schedule
591	Data Processing Questionnaire
592	Sales and Excise Taxes Questionnaire
593	Subsidies-in-Kind and Forgiven Indebted- ness Questionnaire
594	Pension Plan Questionnaire

TABLE OF CONTENTS (Cont'd)

6.	NONFINANCIAL OPERATING DATA REPORTING FORMS
600	Weekday Time Period Schedule
610	Transit Way Descriptors Schedule
611	Transit System Stop Descriptors Schedule
620	Revenue Vehicle Inventory Schedule
625	Energy Consumption Schedule
630	Transit Service Personnel Schedule
635	Transit System Employee Count Schedule
640	Revenue Vehicle Maintenance Performance Measures Schedule
645	Revenue Vehicle Collision Accidents Schedule
646	Noncollision Passenger Accidents Schedule
647	Rail Rapid Transit Station Accidents Schedule
650	Transit Service Supplied Schedule
655	Transit Service Consumed Schedule

PART IV -- COMMUTER RAIL REPORTING (Bound in separate volume.)

1. GENERAL COMMENTS
2. ICC FORM A
3. MODIFICATIONS TO ICC FORM A

## INTRODUCTION

## 1. INTRODUCTION

The trends in the economic characteristics of the urban mass transit industry have been documented in other recent studies and will not be repeated in depth here.<sup>1</sup> In the past two decades, operating costs have increased at a faster rate than fare box revenues. This trend has placed an increasing number of transit systems in the position of not being able to stretch revenues to cover operating costs. To alleviate this problem, these systems have been forced to explore various alternatives. Typical alternatives include raising fares, reducing service levels, seeking subsidies, or suspending operations. Public authorities generally have been established to take over the operations whenever private owners suspended operations due to an unfavorable economic environment.

- 
1. The following two studies contain extensive description of the condition of the industry:
    - a. Feasibility of Federal Assistance for Urban Mass Transportation Operating Costs, U. S. Department of Transportation, November, 1971.
    - b. Economic Characteristics of the Urban Public Transportation Industry, U. S. Department of Transportation, February, 1972.

For many communities and urban planners, these trends have induced a fundamental reevaluation of the nature and basic objectives of the transit industry. The concept of transit systems as profit-making enterprises is becoming more obscure as evidenced by the fact that more and more transit systems, both large and small, are becoming the operating responsibility of public agencies. In this context, transit systems may be regarded as an essential public service requiring public financial support, similar to the provision of streets and highways, fire and police protection services. When their operations are viewed as publicly supported services, transit system managers can develop a broader view of the levels of service to be provided.

The levels of service can be defined in the context of achieving social as well as economic goals. Thus, mobility considerations in the urban area can become a prime target for public urban transit systems. For example, increased transit services can be aimed at workday automobile commuters in order to reduce traffic congestion and air pollution. Increased transit services can also be aimed at the needs of the community at large and subgroupings, such as the transportation disadvantaged--the young, the elderly, the poor, and the handicapped.

This concept of expanded transit services and the unfavorable economic circumstances of the industry have led to

supplementing operating revenues with public funds to cover costs. The subsidies have come from local, state, and Federal levels of government and have taken many forms. State and local subsidies have stimulated capital equipment expansion and replacement and have helped to cover current operating expenses. Federal aid has so far been restricted to capital grants and research and development; however, various types of operating assistance have been considered by the Congress for several years.

### 1.1 Need for Industry Information Base

The foregoing general description of the industry has been substantiated by several recent research efforts. However, in each of these efforts, a common observation has been that the basic research information is incomplete and lacking in comparability and consistency. Currently there is no procedure for collecting data in which all of the transit systems consistently apply the same standards for reporting their performance results. Consequently, it has not been possible to get an accurate measure of the operating deficit for the industry, to obtain comparable measures of the levels of service being provided by the various transit systems, or to obtain other information necessary for making policy decisions. An improved information base which describes the economic and operating conditions in the industry is a necessary requisite for effective planning and administration of a program for assisting transit operations.

## 1.2 Existing Transit Industry Reporting Systems

The American Transit Association (ATA) system for collecting financial and operating statistics is the most widely used system, and its products are widely referenced in research projects. However, the ATA reporting system provides for voluntary submission of reports by all transit systems in the United States and Canada, and only 10-15% of the systems file reports. Further, the ATA system does not use a standard definition of reporting categories applied uniformly by all reporting entities.

Many accounting systems are being used throughout the country. These include standard systems established by the Interstate Commerce Commission, the American Transit Accountants' Association, and various state and local regulatory bodies. The ATA reporting system has different forms for the reports to be submitted according to Interstate Commerce Commission uniform charts of accounts or the American Transit Accountants' Association uniform charts of accounts. Other transit systems not using either of these accounting systems report by their own format. Because there are substantial differences between the charts of accounts, a transit system using an ICC chart cannot be compared with a transit system using an ATA chart. As a result, the reports of these two transit systems cannot be consolidated to accurately measure their aggregate financial performance.<sup>1</sup>

---

<sup>1</sup>These limitations are fully recognized by the ATA. As previously noted, the Association has provided a major supporting role in the development and conduct of Project FARE.

Another system administered by the ATA is the Transit Pars Data Interchange, which is also based on voluntary reporting. This system specifies standard definitions for reporting categories. The data reported are used to calculate certain "derived ratios" and percentage relationships. The calculated data are arrayed to show comparisons among transit systems. The pars are standards developed by an ATA committee in the mid-fifties and revised in 1972. The pars now indicate the percentages of various expense classes to the total cost of operations.

Organizations other than the American Transit Association have also attempted to develop reporting systems for the collection of data describing transit operations. The Michigan Department of Commerce, Bureau of Transportation contracted with the American Academy of Transportation, Ann Arbor, Michigan for the development of a reporting system for the State of Michigan. Similar efforts have been or are being conducted in the states of Wisconsin and Pennsylvania. The Michigan project stopped short of developing standard definitions for the reporting categories.

Although many transit systems use the ICC chart of accounts, they are not all required to report operating results to the ICC. Those transit systems not engaged in interstate operations for which the ICC must issue a license are not required to report their operating results to the ICC. The vast majority of transit systems do not

report to the ICC, but many of them are required to report to their state department of transportation or state public utilities commission using the ICC reporting form or a variation thereof. The lack of centralized data collection and processing and the variations from state to state prevent this data collection effort from serving an industry-wide need.

Reporting under these systems has had limited effectiveness. Some of the systems are too narrow in scope to meet the information needs of some of their potential users. Others are not based on uniform reporting categories. A reporting system should be comprehensive and based on a uniform application of standard reporting category definitions in order to provide the consistency and reliability necessary to permit useful analyses of operating performance data for the transit industry.

### 1.3 Objectives of Project FARE

To fulfill the need for an improved transit industry reporting system, Project FARE was defined through the joint efforts of the ATA, the IRT, and UMTA. The objectives of this project as stated in the contract are to "improve the consistency and reliability of financial and operating data on transit companies." The product of Project FARE will be a candidate reporting system to overcome the deficiencies in the existing reporting systems.

Other projects being performed by DOT bear close relationship to Project FARE. The distinctions between the objectives of these projects should be clearly understood. The TOMS Program (Transit Operations & Management Systems) and its associated projects, SIMS (Service, Inventory & Maintenance System - formerly TRANSMAN), RUCUS (Run Cutting and Scheduling), and MPS (Maintenance Planning System for rail rapid operations) are intended to develop improved internal information systems for transit system management. These projects complement Project FARE which is being designed as an external reporting system.

#### 1.4 Organization of this Report

As noted in the PREFACE, this interim report covers the third of four major tasks of Project FARE. The purpose of this task is to design the candidate reporting system, i.e., to identify and define the data elements to be reported, to design the forms on which the reports are to be submitted and to develop the instructions and accounting standards necessary to insure that uniformity in reporting will be achieved. This design work is to be accomplished in the context of the information requirements of the system's prospective users and the capability of the urban mass transit industry to supply the information. This context is described in the reports for Tasks I and II dated July, 1972 and November, 1972, respectively.

This report is presented in four separate volumes. The first volume covers the performance of the task and describes the procedures followed to achieve the purpose of Task III (Chapter 2), a brief description of the reporting system general design (Chapter 3), the conclusions reached upon completing the task (Chapter 4) and the plans for proceeding with Task IV (Chapter 5). The second and third volumes document the design of the reporting system. These two volumes constitute the material to be sent to the reporting transit systems as the reporting system is implemented. They contain all of the instructions, definitions and forms that the transit system should need in order to prepare its reports. The fourth volume covers reporting requirements for commuter rail systems.

## **METHODOLOGY**

## 2. METHODOLOGY

The process for developing the FARE Reporting System consisted of the following general steps:

- (1) Review the industry information requirements specified in the Task I Report and the industry's capability of supplying the information as determined in Task II.
- (2) Document the data structure (i.e., identify the data categories) to be incorporated into the reporting system. Review this proposed data structure with the Industry Control Board.
- (3) Develop definitions for each reporting category in the data structure, cross-reference guides to the ICC chart of accounts and forms on which the data are to be reported. Review these documents with the Industry Control Board.

In order to break the task into more manageable units, the total reporting structure was divided into four parts (identified below), and the above steps were performed on each of the four parts.

- (1) Expense reporting, including detailed subsidiary schedules and auxiliary questionnaires relating to expenses.
- (2) Balance sheet reporting, including detailed subsidiary schedules for reporting tangible property used in transit operations.
- (3) Revenue and passenger statistics reporting.
- (4) Other nonfinancial operating data reporting.

The most complex reporting requirement is for expenses. Three days of the October, 1972 ICB meeting were devoted to

discussing the data structure for expenses. Further discussion of the structure and the definitions and forms for expense reporting were major parts of the December, 1972, January, 1973 and April, 1973 ICB meetings.

The proposed structure for the balance sheet, property, revenue and passenger count reporting was discussed in the January, 1973 ICB meeting. Definitions and forms for reporting these categories were discussed at length in the April, 1973 and May, 1973 ICB meetings.

The proposed structure for nonfinancial operating data, other than passenger statistics, was discussed in the May, 1973 ICB meeting. The definitions and reporting forms for these categories were covered in the June, 1973 ICB meeting.

The documentation of the complete reporting system was reviewed in the June, 1973 ICB meeting. The Board approved the system as the one to be tested in Task IV.

**REPORTING SYSTEM  
GENERAL DESIGN**

### 3. REPORTING SYSTEM GENERAL DESIGN

The contract covering performance of Project FARE stipulates that the scope of the effort pertains to transit companies providing urban mass transportation in the following modes: motor bus, trolleybus, streetcar, rail rapid transit and commuter rail. In addition to these modes, urban mass transportation is provided by ferryboat and cable car and will soon be provided by a variety of personal rapid transit systems. The reporting system that has been designed for the industry is in two distinct parts: one designed for commuter rail operations and a second designed for all other operations.

#### 3.1 Two Reporting Structures

The initial intent was to design a single reporting structure for all modes of transit service. The structure for buses, streetcars, etc., was developed to meet this objective. However, as the applicability of that structure to commuter rail systems was examined, several factors indicated that a separate reporting structure would be preferable.

One of the fundamental differences between commuter rail systems and other transit systems is that the commuter rail operation is usually a relatively small adjunct of a railroad operation geared mostly to freight and intercity passenger services. This fact presents a different problem

for commuter rail systems in, first of all, defining the total cost of providing commuter rail services. Some of the costs are common costs for the freight and intercity passenger traffic. It is therefore necessary to allocate the common costs to the different operations in order to get the total cost of that system's urban mass transit services. The other transit systems generally do not need to segregate their transit operations from any other operations.

Because of the interstate operations of the railroads that operate commuter services, they are subject to Interstate Commerce Commission (ICC) regulation and reporting requirements. Their internal information systems are all geared toward meeting the ICC reporting requirements. Thus, this segment of the urban mass transit industry already has a great deal of uniformity in its reporting that the remainder of the industry does not have. It was the judgment of prospective users of the information system that uniformity among commuter rail systems was essential, but that uniformity between commuter rail systems and other transit systems was not essential. Hence, to the extent that the ICC information structure meets or could be modified to meet the information needs concerning commuter rail operations, it provides a good basis from which to develop the FARE reporting requirement for the commuter rail segment.

Another issue that favored the modification of the ICC structure, rather than the implementation of the totally new FARE structure, concerns the likelihood of voluntary implementation by the railroads. Generally, the commuter service railroads are still private (nongovernmental) corporations. There is very little, if any, apparent payback on the substantial investment required to implement the new information structure of the FARE System. The internal management information systems based on responsibility reporting concepts and the ICC reports give the railroads, in their estimation, sufficient information at reasonable cost. The FARE information structure may provide better information, but only at a cost that none of the railroads is likely to undertake.

Given these circumstances, two data structures were developed in Project FARE. That required for buses, streetcars, etc., is covered in Section 3.2 below. That required for commuter rail systems, which is basically a modification of ICC Form A reporting, is covered in Section 3.3 below.

### 3.2 General Design for Transit Systems

The reporting requirements for all transit systems, other than commuter rail operations, are described in detail in Parts II and III of this report. These parts are bound in separate volumes.

In Project FARE Task I Report: Urban Mass Transportation Industry Information Requirements, a complete information structure for urban mass transit was postulated. It was recognized that not all of the information required could be obtained from operating transit systems. Some of it would have to come from planning and governmental agencies and resource suppliers independent of operating transit systems. Some of it is not currently available from any source, but hopefully will become available from the operating transit systems, planning agencies, etc., as more resources are brought to bear on the transportation problems of our urban areas. The part of the complete information structure that was to be covered in Tasks II, III and IV of Project FARE was to be limited to data collection from operating transit systems. The contractor was to further limit the system to data that was generally available, yet not exclude data that could be obtained at reasonable cost and would enhance the manageability of transit operations.

Within this context, the information requirements for the reporting system were established. For convenience of classification, there are six major groupings of data in the reporting system data structure.

- (1) Asset reporting requirements.
- (2) Liability reporting requirements.

- (3) Equity reporting requirements.
- (4) Revenue reporting requirements.
- (5) Expense reporting requirements.
- (6) Nonfinancial operating data reporting requirements.

Each of these major groupings is the subject of a separate chapter in Part II and is described in detail therein.

It should be noted here that a fundamental change in the data structure for expense reporting was made from the proposed structure in the report for Task I. At the conclusion of Task I, it was desired that the structure for analyzing expenses would be related to certain groupings of capital assets, e.g., transit way and structures, revenue vehicles, maintenance facilities, administrative facilities, etc. With respect to each capital class, the capital was operated, maintained and consumed. In order to accomplish these things, funds had to be expended on certain objects, such as labor, material, services, etc. The Task I proposal gave explicit recognition to each of these three dimensions of cost analysis.

The field work of Task II led to the conclusion that the above described three-dimensional structure could not be practically implemented. One that would be more easily communicable, and hence a better candidate for implementation, was a two-dimensional structure identifying functions and

object classes. Functions are the activities performed within a transit system in order to provide transit service. Object classes, as in the earlier proposal, are the items obtained upon the expenditure of funds and necessary for the performance of functions. A summary of the function/object class structure for expense reporting is presented in the matrix shown in Exhibit 3.2A.



### 3.3 General Design for Commuter Rail Systems

The reporting requirements for commuter rail systems are described in Part IV of this report, which is bound separately.

Upon conclusion of Task IV, complete detailed documentation of the commuter rail reporting system (similar to that in Parts II and III of this report) will be contained in two separate volumes. For the present, only a narrative description of the proposed changes to ICC Form A reporting is presented in order to give a general idea of the treatment to be given commuter rail systems.

## **CONCLUSIONS AND RECOMMENDATIONS**

#### 4. CONCLUSIONS AND RECOMMENDATIONS

The primary objective of Task III was to develop documentation of a complete reporting system for the urban mass transit industry. This system was to be based on the knowledge of the industry's information requirements and on the understanding of present reporting practices, capabilities, problems, inconsistencies and differences in the transit industry obtained in Tasks I and II.

The work accomplished and the product developed in Task III, as documented in this report, fulfill this objective for transit systems other than commuter railroads. They also establish the necessary basis for going forward with the testing required in Task IV for these transit systems. Completing the work to accomplish the objective for commuter rail systems has been scheduled for the Task IV period.

The second most important conclusion that we have drawn from the work concerns the success of the process used to design the system. The three-party formula -- the contractor, the Project FARE Technical Director for the Urban Mass Transportation Administration and the Industry Control Board -- has proven to be a very successful vehicle for designing this reporting system. All three parties made significant contributions to the design. Without any one party's contribution, the system would be less likely to achieve its important goals.

It is also important to note that other parties were involved during the performance of Task III. For the last four meetings of the Industry Control Board, when the details of the reporting system were being forged, representatives of transit systems near the meeting sites and other governmental agency representatives were included in the discussions. Further, the contractor and some of the Industry Control Board members made presentations about the project in the various conferences and seminars of the American Transit Association during the period. These activities, as well as contributing to the design of the system, have generated a high level of interest and cooperation throughout the industry. A sound environment has been established in which to proceed with the testing and implementation of the FARE Reporting System.

The Industry Control Board has recognized that interest and momentum exist for implementing this reporting system, but that Project FARE has not been defined to include implementation. Based on these observations, the Board has discussed in its most recent meetings the actions it might take to obtain implementation of the reporting system while the momentum and mechanism for the work are intact. The Board has recommended that formulation of an implementation project be performed concurrently with the execution of Task IV of Project FARE. If this can be done, implementation can proceed as soon as the system has been validated and modified, as required.

## **TASK IV PLANS**

## 5. TASK IV PLANS

The contract for Project FARE identified Task IV as the validation of reporting standards for the transit industry. In Task IV, the reporting system designed in Task III will be test implemented at selected transit systems to determine the viability of the proposed reporting standards.

### 5.1 ICB Represented Test Sites

In order to obtain as broad coverage as possible within the limited resources available for the project, we have asked the transit systems represented on the Industry Control Board (ICB) to conduct their own test. The Project Team will then apply its efforts to other transit systems. The ICB systems are to complete their tests by the end of August. The ICB will be convened shortly thereafter to discuss the testing experiences of the ICB and the Project Team.

The operating transit systems represented by one or more members of the ICB are:

- Chicago Transit Authority
- City Transit of Fort Worth
- Cleveland Transit System
- Illinois Central Gulf Railroad
- Massachusetts Bay Transportation Authority
- Metropolitan Atlanta Rapid Transit Authority

- ( Manhattan and Bronx Surface Transit Operating ) \*
- ( Authority ) \*
- ( New York City Transit Authority ) \*
- ( Staten Island Rapid Transit Operating Authority ) \*
- ( Long Island Railroad ) \*
- Port Authority Trans-Hudson
- San Diego Transit Corporation
- Toronto Transit Commission

\*Because of the size and complexity of the New York City transit system, the Project Team will assist the representative of the Metropolitan Transportation Authority with these tests.

## 5.2 Other Test Sites

The transit systems to be covered by the Project Team have been selected on the following criteria:

- modes of service operated,
- geographic distribution,
- size of transit system,
- ownership/management, and
- expected support for the test effort.

All of the proposed sites were included in the field studies during Task II.

Pilot tests will be conducted at Denver Metro Transit and Southeastern Pennsylvania Transportation Authority (SEPTA) in July, 1973. The work program for a test implementation will be validated in these pilot tests. The tests will be conducted by Messrs. Nagel, Van Lieshout and Malachuk of the Project Team. Denver Metro is a municipal entity using contract management

and operating 214 motor buses. SEPTA is a regional authority using its own management and operating 510 rail rapid transit cars, 278 streetcars, 92 trolleybuses and 1,687 motor buses.

We propose to have Messrs. Van Lieshout and Malachuk conduct the remaining tests of transit systems, other than commuter rail systems, with the assistance of other Arthur Andersen & Co. staff and transit system personnel. The remaining test sites are listed below.

Test site: Municipality of Metropolitan Seattle  
Staffing: Van Lieshout  
Modes: Motor bus (461) and trolleybus (53)  
Ownership: Public with own management.

Test site: Las Vegas Transit System, Inc.  
Staffing: Van Lieshout  
Modes: Motor bus (20)  
Ownership: Private company with own management.

Test site: Southern California Rapid Transit District  
Staffing: Van Lieshout  
Modes: Motor bus (1,616)  
Ownership: Regional authority with own management.

Test site: City Utilities, Springfield, Missouri  
Staffing: Malachuk  
Modes: Motor bus (65)  
Ownership: Department of a power company with own management.

Test site: American Transit Corporation  
Staffing: Malachuk  
Modes: Motor bus  
Ownership: Holding company owning and/or operating 28 bus companies, generally with fewer than 50 buses per company. Centralized accounting in St. Louis.

Test site: NYC Dept. of Marine and Aviation (Staten Island Ferries)  
Staffing: Van Lieshout  
Modes: Ferryboats (8)  
Ownership: Part of a department of the city with own management.

Test site: Ann Arbor Transportation Authority  
Staffing: Malachuk  
Modes: Motor bus (20)  
Ownership: Department of the city with own management.

Test site: Transport of New Jersey  
Staffing: Van Lieshout and Malachuk  
Modes: Motor bus (2,353) and streetcar (30)  
Ownership: Private with own management.

### 5.3 Commuter Rail Reporting - Development and Testing

As noted in Chapter 3, Reporting System General Design, the documentation of the reporting requirements for commuter rail systems is to be completed during Task IV. Mr. Nagel of the Project Team will complete the development and conduct the testing of this part of the system. The testing will be done at the Illinois Central Gulf Railroad and/or the Long Island Railroad in cooperation with the Industry Control Board members representing those commuter rail systems.

### 5.4 Completion of Project

Upon completion of the tests indicated above, the reporting system documented in this report will be amended as necessary to insure its viability. A report on Task IV, including the updated documentation of the reporting standards, will be prepared, reviewed by the ICB, and submitted to UMTA to complete Project FARE. It is planned that the work will be completed in time to present Project FARE as a successfully completed project at the American Transit Association Annual Meeting in Miami on October 17, 1973.

