

**ASSESSMENT OF THE PROFESSIONAL EDUCATION
NEEDS OF PUBLIC TRANSPORTATION
MANAGEMENT PERSONNEL
IN CONNECTICUT**

Final Report
February 1994

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16. Abstract This report identifies job-related training needs for public transit, managerial/supervisory positions in the functional areas of: general management, dispatching, vehicle operations and maintenance. The findings are based on focus group interviews conducted at seven public transit agencies in Connecticut and a priority ranking of short course subjects, which address the identified job-related training needs, carried out by a group of key transit managers and administrators. The report also develops curriculum outlines for the short courses and an organizational structure, staffing plan and budget for implementing training and technical assistance for Connecticut's public transit agencies					
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SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS			
Symbol	When You Know	Multiply By	To Find
<u>LENGTH</u>			
in	inches	25.4	millimetres
ft	feet	0.305	metres
yd	yards	0.914	metres
mi	miles	1.61	kilometres
<u>AREA</u>			
in ²	square inches	645.2	millimetres squared
ft ²	square feet	0.093	metres squared
yd ²	square yards	0.836	metres squared
ac	acres	0.405	hectares
mi ²	square miles	2.59	kilometres squared
<u>VOLUME</u>			
fl oz	fluid ounces	29.57	millilitres
gal	gallons	3.785	Litres
ft ³	cubic feet	0.028	metres cubed
yd ³	cubic yards	0.765	metres cubed
NOTE: Volumes greater than 1000 L shall be shown in m ³ .			
<u>MASS</u>			
oz	ounces	28.35	grams
lb	pounds	0.454	kilograms
T	short tons (2000 lb)	0.907	megagrams
<u>TEMPERATURE (exact)</u>			
°F	Fahrenheit temperature	5(F-32)/9	Celcius temperature
°C	Celcius temperature	1.8C + 32	Fahrenheit temperature

APPROXIMATE CONVERSIONS TO SI UNITS			
Symbol	When You Know	Multiply By	To Find
<u>LENGTH</u>			
mm	millimetres	0.039	inches
m	metres	3.28	feet
m	metres	1.09	yards
km	kilometres	0.621	miles
<u>AREA</u>			
mm ²	millimetres squared	0.0016	square inches
m ²	metres squared	10.764	square feet
ha	hectares	2.47	acres
km ²	kilometres squared	0.386	square miles
<u>VOLUME</u>			
mL	millilitres	0.034	fluid ounces
L	litres	0.264	gallons
m ³	metres cubed	35.315	cubic feet
m ³	metres cubed	1.308	cubic yards
<u>MASS</u>			
g	grams	0.035	ounces
kg	kilograms	2.205	pounds
Mg	megagrams	1.102	short tons (2000 lb)
<u>TEMPERATURE (exact)</u>			
°C	Celcius temperature	1.8C + 32	Fahrenheit temperature

*SI is the symbol for the International System of Measurement

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EXECUTIVE SUMMARY

This study presents specific recommendations for the establishment of a continuing training and technical assistance program for public transit agencies at the Transportation Institute at the University of Connecticut.

A. TRAINING

This study identifies sixteen subject areas for which workshops or short courses should be developed for the training of transit management/supervisory personnel. Five of those subjects were given priority for immediate implementation. They are:

- *Adapting and Implementing Total Quality Management in Public Transit Agencies
- *Effective Marketing and Promotion for Transit Agencies
- *Principles and Techniques for Successful Financial Management of Public Transit Agencies
- *Personnel Management and Labor Relations for Public Transit Agencies
- *Successful Supervisory Skills for Transit Management Personnel

B. TECHNICAL ASSISTANCE

The following technical assistance activities are recommended:

- *A Quarterly Newsletter
- *A Technical Assistance Hot-Line
- *A Transit-Related Publications and Video-tape Lending Library

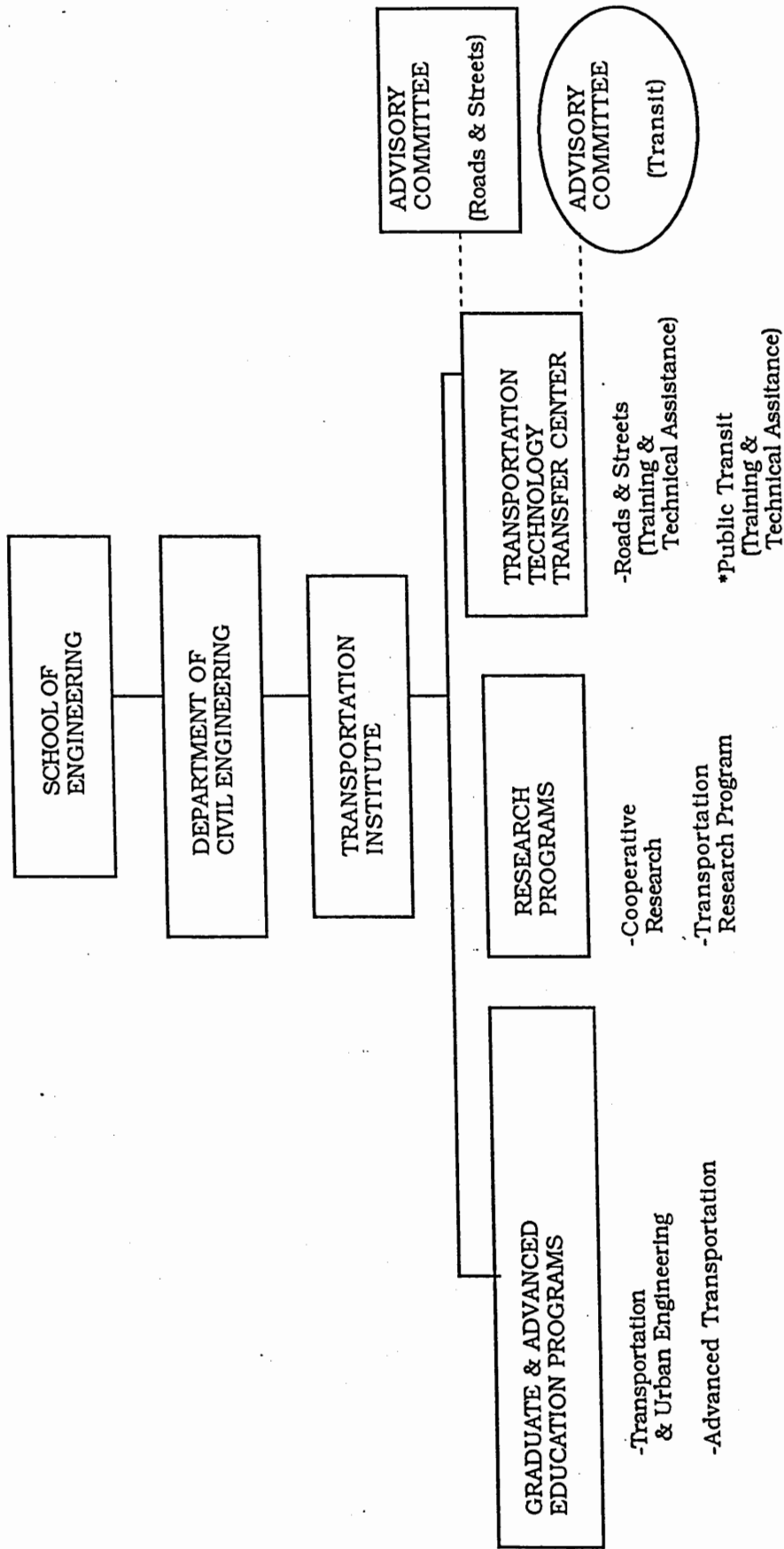
C. ORGANIZING FOR A CONTINUING TRANSIT TRAINING AND TECHNICAL ASSISTANCE PROGRAM

- C.1. The Transportation Institute at UConn - The Transportation Institute at UConn is ideally positioned and suited to take on the responsibilities of training and technical assistance for public transit agencies. The Institute is already intensely involved in a variety of transportation-related research, educational, technical assistance, training and technology transfer activities, many of which are related to public transit.

The addition of a transit training and technical assistance program at the Institute would create an unprecedented organizational environment which offers the potential for **new and imaginative** developments in transit operations through the interaction of the program with the Institute's ongoing transportation-related research, education, training and technology transfer activities.

A Transit Training and Technical Assistance Advisory Committee, with staff support from the Institute, would be created to provide advice on program activities.

Figures 1 and 2 show the proposed location of the Continuing Transit Training and Technical Assistance Program within the organizational structure of the Transportation Institute and the staffing requirements for the program.



- Legend:
- Existing Function
 - * Proposed Function
 - Existing
 - Proposed

Figure 1 Transportation Institute: Organizational Structure & Functions

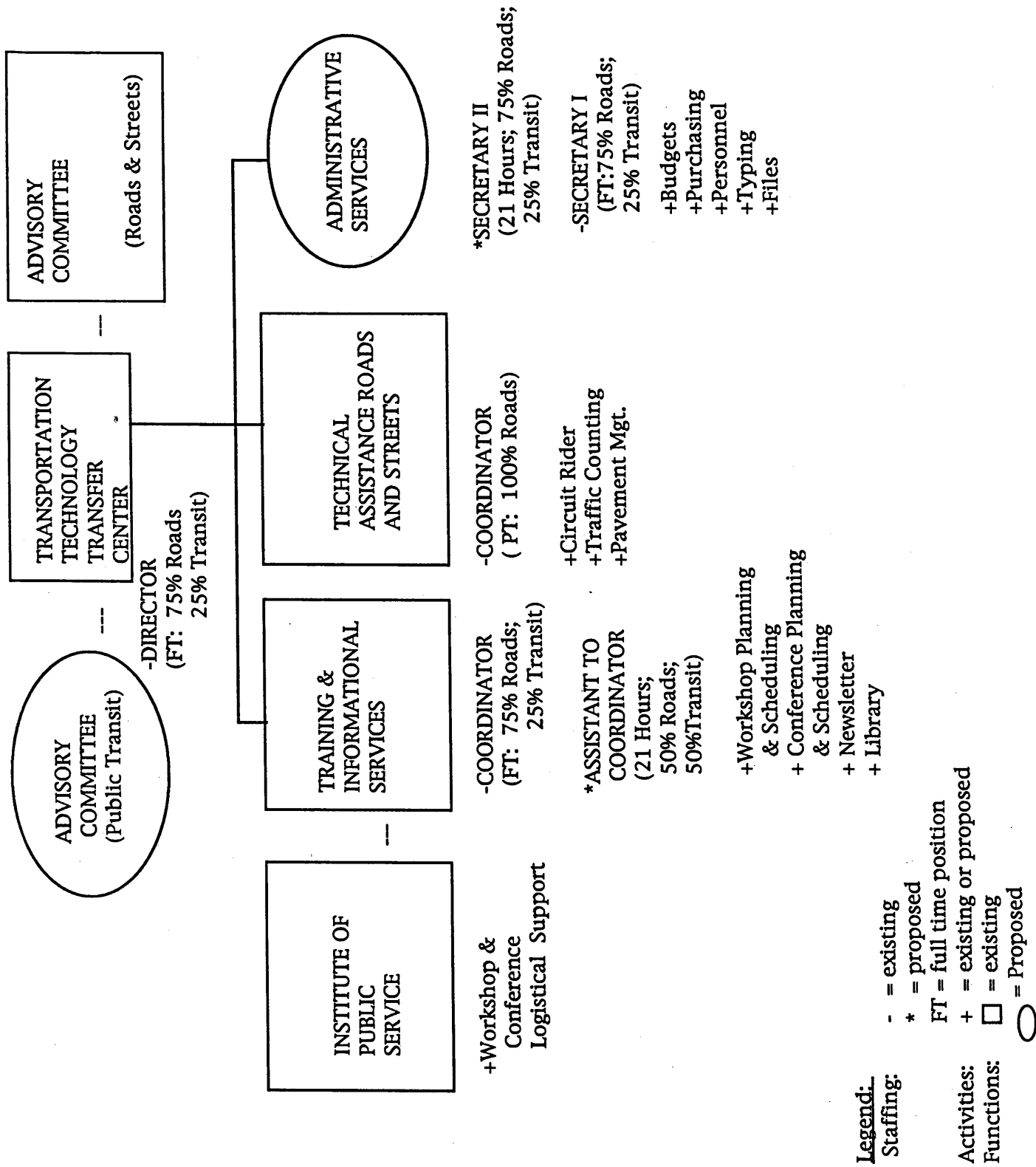


Figure 2 Transportation Technology Transfer Center: Staffing & Functions

D. FUNDING THE CONTINUING TRANSIT TRAINING AND
TECHNICAL ASSISTANCE PROGRAM

D1. Costs:

A. DIRECT COSTS:

Salaries:

Director (25% of FT).....	\$ 14,700
Coord. Trng. & Info. Services (25% of FT).....	\$ 8,400
Assist. to Coord. Trng & Info. Services (50% of 21 hrs.).....	\$ 7,200
Secretary II (25% of 21 hrs.).....	\$ 4,200
Secretary I (25% of FT).....	\$ 6,000
Total Salaries.....	\$ 40,500

Fringe:

Director.....	\$ 6,174
Coord. Trng & Info. Services.....	\$ 3,528
Assist. to Coord. Trng & Info Services.....	\$ 3,024
Secretary II.....	\$ 1,764
Secretary I.....	\$ 2,520
Total Fringe.....	\$ 17,010

Total Salaries

& Fringe..... \$ 57,510

Other:

Supplies.....	\$ 500
Postage.....	\$ 500
Telephone.....	\$ 400
Printing.....	\$ 1,500
Publications.....	\$ 1,000
Subscriptions/Memberships.....	\$ 500
Equipment.....	\$ —
Travel.....	\$ 1,500
Contractual (workshops/conferences: 5 @ \$5,000 ea.).....	\$ 25,000
Total Other.....	\$ 30,900

Total Direct Costs..... \$88,410

B. INDIRECT COSTS

(25% TOTAL SALARIES):..... \$ 10,125

C. TOTAL COSTS:..... \$98,535

NOTE: The above costs are 1993 dollars.

D.2. Sources of Funding:

The following are potential funding sources for the cost of the recommended program:

Federal Transit Administration Section 10

Federal Transit Administration Rural Technical Assistance Program

Federal Highway Administration Local Technical Assistance Program

Revenues from Short Courses/Conferences

Other Sources:

*Section 3 1992 Federal Transit Act

*Section 9 1992 Federal Transit Act

I. INTRODUCTION

A. BACKGROUND

The Federal Transit Administration (FTA) supports managerial training activities for transit professionals through "Section 10" grants. FTA has specifically encouraged grantees to address training needs on a statewide or regional basis. FTA also encourages developing relationships between State and local transit agencies and universities as a resource for technical assistance and training.

Under Section 10 of the Federal Transit Act of 1992, the Federal Transit Administration has set aside \$400,000-\$450,000 to provide 50-50 matching grants for transit management training. In addition, the Act allows public agencies and state transportation departments to use up to 0.5% of their capital funding under Section 3 (discretionary funding) and Section 9 (formula funding) to cover up to 80% of the direct costs of expenses in connection with education and training.

The Connecticut Department of Transportation (ConnDOT) Bureau of Public Transportation designated Connecticut Transit (CTTRANSIT) as the lead agency for a Statewide Transit Training Grant under Section 10. CTTRANSIT's experience administering this program has revealed a significant need for short courses that address specific technical training issues for transit managers.

The cost of training and time constraints preclude most managers from attending lengthy programs offered at remote out-of-state locations. Short courses of one to three days' duration that can be offered in-state are highly desirable.

There is a need for specialized short courses that can be offered locally. Such courses, focusing on specific transit management-related topics, and involving only one to three days of training, would avoid the travel and per diem expenses associated with out-of-state travel. A key constraint to developing such courses previously was that individuals with the requisite expertise and training skills were not always associated with the eligible Section 10 provider.

B. PURPOSE OF STUDY

This study was undertaken to identify the high priority training needs of managerial and supervisory personnel in Connecticut's publicly-funded transit agencies. The identification of these needs would provide the basis for development of curriculum outlines for a series of short courses addressing those training needs.

The study also addressed the resources (organizational, staffing and financial) needed to implement and maintain a continuing program for the professional development of transit managers and supervisors for Connecticut's publicly-funded transit agencies.

C. AN OVERVIEW OF CONNECTICUT'S PUBLIC TRANSIT SYSTEMS

C.1. The Urban Systems:

Table I.1

Statistics for the Period
July 1, 1989 to June 30, 1990
URBAN SYSTEMS

SYSTEM	EXPENSES	PASSENGERS	VEHICLES	SERVICE
CT Transit-Hrtfd	28,200,128	15,757,039	231	FR;CMTR
CT Transit-New Haven	15,326,227	7,514,574	122	FR;CMTR
CT Transit-Stamford	3,724,917	1,972,083	30	FR
NE Transp-Waterbury	2,764,903	1,606,138	40	FR
NE Transp-Meriden	379,914	120,232	4	FR
NE Transp-Wallingford	327,535	67,653	4	FR;CMTR;SCHL
New Britain Transp- New Britain	901,625	501,856	11	FR
New Britain Transp- Bristol	240,250	62,253	3	FR;CMTR
Dattco, Inc.-New Britain	347,388	154,081	6	FR
SEAT T.D.	1,905,873	824,004	31	FR
Greater Bridgeport T.D.	7,766,585	4,156,189	53	FR;CMTR
Valley T.D.	903,853	132,165	16	DR
Norwalk T.D.	3,072,703	1,141,937	23	FR
H.A.R.T.	1,199,532	660,564	23	FR
Milford T.D.	459,889	151,491	6	FR
Westport T.D.	1,124,975	138,116	11	FR;DR
Middletown T.D.	826,837	209,930	8	FR

NOTES:

FR=Fixed Route
CMTR = Commuter
DR=Demand Responsive
SCHL = School

SOURCE: State of Connecticut Transit Operations Annual Report
Fiscal Year 1990 (July 1, 1989-June 30, 1990), ConnDOT Bureau of Public
Transportation

Handwritten notes:
294-2872
M...
H...

C.2. The Private Commuter Express Bus Systems:

Table I.2

Statistics for the Period
July 1, 1989 to June 30, 1990
PRIVATE COMMUTER EXPRESS BUS SYSTEMS

SYSTEM	EXPENSES	PASSENGERS	VEHICLES
Willimantic ARROW BUS LINE	242,540	77,605	4
Vernon COLLINS	302,453	182,180	5
Old Saybrook DATTCO	196,080	31,708	3
Torrington KELLEY TRANSIT	257,152	49,958	4
Meriden MERIDEN TRANSIT	88,542	29,904	2
Bristol NEW BRITAIN TRANSPORTATION	248,236	116,938	6
Cheshire/Southington NEW BRITAIN TRANSPORTATION	96,832	25,193	3

SOURCE: State of Connecticut Transit Operations
Annual Report Fiscal Year 1990
(July 1, 1989-June 30, 1990)
ConnDOT, Bureau of Public Transportation

C.3. The Rural Systems:

Table I.3

Statistics for the Period
July 1, 1989 to June 30, 1990
RURAL SYSTEMS

SYSTEM	EXPENSES	PASSENGERS	VEHICLES	SERVICE
Estuary Transit District	312,300	18,050	8	DR;FR
Housatonic Area Regional Transit District	679,653	64,059	20	DR
Northeast Transit District	472,301	65,409	13	DR;FR
Northwest Transit District	423,799	90,959	13	DR;FR
Windham Transit District	550,150	130,751	19	DR;FR

NOTES:

DR=Demand Responsive
FR=Fixed Route

SOURCE: State of Connecticut Transit Operations Annual Report
Fiscal Year 1990 (July 1, 1989-June 30, 1990), ConnDOT, Bureau of Public
Transportation

C.4. Other Systems:

In addition to the above systems, transportation services for the elderly and handicapped throughout the state are funded through one or more of the following programs:

SECTION 16(b)(2) PROGRAM: Provides wheelchair lift-equipped vehicles for private nonprofit organizations serving the elderly and handicapped. In 1989, a fleet of 158 vehicles was being operated by 74 groups throughout the state.

STATE AGING GRANT PROGRAM: Provides grants to municipalities to purchase vehicles for the transportation of the elderly. The program provides approximately \$150,000 in grants.

GREATER HARTFORD TRANSIT PROGRAM: Operates 120 vehicles in a demand-responsive service for the elderly and handicapped of member towns.

GREATER NEW HAVEN TRANSIT DISTRICT:
Operates 14 vehicles for demand-responsive service for the handicapped.

STATEWIDE ELDERLY AND DISABLED COORDINATION PROGRAM: Provided approximately \$3.5 Million for operating expenses for elderly and disabled transportation services in 1989.

The above public transportation systems represent a financial commitment of over \$77 million for fiscal year 1989. Such a commitment warrants a correspondingly appropriate commitment for training and education to insure a high level of excellence among the managerial and supervisory personnel who have the responsibility for operating these important public transit systems.

II. METHODOLOGY

The needs analysis study was designed to identify the training needs of Connecticut's transit managers, supervisors, and foremen. Drivers and mechanics were not included in the study.

A. SURVEY POPULATION

Eighteen persons were interviewed in focus groups formed in seven Connecticut transit agencies. The groups included 5 Executive Directors, 1 General Manager, 2 Assistant Managers, 2 Directors of Planning, 3 Operations Managers, 1 Director of Operations and Maintenance, 1 Maintenance Manager, 1 Dispatcher, 1 Maintenance Foreman, and 1 Comptroller. Seventeen of the 18 interviews were conducted in the managers' offices and 15 of the interviewees participated in group interviews. The 18 interviews ranged from one hour to one and a half hours and 17 were tape recorded. The 18th interview was conducted with a Transit Agency director via telephone because of scheduling difficulties.

B. FOCUS GROUP INTERVIEW GUIDE

A focus group interview guide (See Appendix A-2) was developed based on typical key functional areas of public transit agencies. The functions included (1) general management, including (a) financial management; (b) personal management; (c) risk management and insurance; (d) planning; and (e) marketing; (2) dispatching and scheduling; (3) vehicle operations; and (4) maintenance. The interview guide was pilot tested among five transit executive officers, revised, and reproduced. The guide was then mailed to transit districts identified by the Transit Advisory Committee and distributed to executive officers and key management and supervisory personnel. Focus group interviews were then conducted with the management and supervisory personnel using the interview guide.

C. DATA COLLECTION AND ANALYSIS

Focus group participants were asked to identify, from the functional areas listed in the focus group interview guide, those which applied to their operations. Following this, participants were asked to comment upon tasks listed by functional area which they performed. Lastly, they were asked to discuss tasks of particular concern to them in

which they felt they needed training or additional training, if training were currently provided.

From the interviews, information was collected and categorized in six preliminary areas: (a) marketing, defined as relating to internal and external transit agency customers; (b) supervisory functions, defined as managing human resources; (c) personnel functions, including policy, regulatory, or procedural issues in organizations; (d) planning and scheduling functions related to routing and ridership; (e) technical training, including bus operator skill needs; and (f) finance and budgeting functions, including computerized information tasks.

III. FINDINGS

A. TRAINING

A.1. Key Functional Areas of Transit Operating Agencies

The key functional areas of transit operating agencies can be classified as follows:

General Management:

- financial management
- personnel management
- risk management and insurance
- planning
- marketing

Dispatching

Vehicle Operations

Maintenance

The above key functional areas represent the major areas of managerial responsibility for which it is desirable to provide continuing training.

A.2. Management-Related Training Needs

The following is a summary of the job-related training needs for managerial positions found in the above key functional areas. It is based on the information collected in the focus group interviews conducted at a selected sample of Connecticut transit agencies (See Appendix 3).

A.2.1. The General Management Function

a. Marketing

1. Customer Relationships

In all transit districts, there is an important need to improve customer relationships. Customer relationships are defined as those with the bus riders, the suppliers of parts and services, the public at large, the media, internal employees who interact with the transit districts, and representatives of other

governmental organizations,
locally, statewide, and nationally.

Respondents identified the need to be able to interact effectively with vendors, program contacts in the federal government, and other government agencies.

2. Public Relations

Managers need skills in developing effective communications strategies with the general public, the media, and boards and commissions.

3. Market Research Skills

Managers need to learn both quantitative and qualitative skills to target particular areas of customer ridership needs, areas where ridership figures and demographics are changing, and strategies to promote cost-effective services.

b. Supervisory Skills

1. Managing Stress

The key topical areas for stress management training include dealing with difficult customers, managing crises, and managing priorities by criticality.

2. Participative Management

Respondents stated that managers needed training in coaching techniques, team building, and Total Quality Management principles. The latter was indicated, in particular, to address productivity problems, address morale issues, and encourage

employees to become more self-directed.

3. Human Relations

Managers have a continuing need to manage human relations issues equitably, fairly, and with sensitivity. This is particularly true in situations involving a diverse workforce.

4. Basic Supervisory Skills

Many supervisors have had little or no formal, systematic training in supervisory techniques, having acquired competencies through working their way up from technical positions. This is important for first-line, and mid-level managers. In addition, foremen, having some supervisory functions, need skills in motivating employees.

5. Communications

Managers need training in active listening skills, communicating with employees and with union representatives, conducting staff meetings, and developing channels of information internally as well as externally to share timely information.

Moreover, managers need to be kept informed of changes in regulations and policies and advances in the transportation field. Cross-agency conferences were suggested as means for meeting this need.

6. Report Writing

Managers need to write clear, succinct, and accurate financial and programmatic reports.

c. Personnel Management

1. Labor Relations: Bargaining and Negotiating Techniques

Managers should understand the process of collective bargaining, particularly the role of unions and management. Managers require an understanding of: how unions identify issues, integrative problem solving techniques, managing grievances, preparing for arbitration, and working with legal counsel.

2. Progressive Discipline Techniques

Managers should know the policies for progressive discipline and learn how and when to document employee incidents.

3. Americans With Disabilities Act (ADA)

Managers need to understand the requirements of the recently passed Americans With Disabilities Act and to communicate the implications to bus drivers.

4. Sexual Harassment and Affirmative Action

Managers have had some training in preventing sexual harassment in the workplace and in affirmative action techniques. However, some follow-up or additional training has been suggested.

d. Financial Management

Managers need to gain skills in accounting procedures, using spreadsheets, internal auditing, and forecasting techniques.

A.2.2.The Dispatching and Scheduling Function

a. Long and Short-Range Planning Techniques

Managers need skills for estimating short- and long-range service needs. Particular skills to meet this need might include identifying and analyzing ridership trends in order to project future ridership, estimating potential costs and benefits of projected ridership trends, and surveying new route potentials.

b. Computerized Scheduling

Split shifts pose particular difficulties for manpower planning. Some transit agencies have adopted a particular software program which enables managers to address this problem. Informing other districts of the program and training in its use may be beneficial in a management training program.

A.2.3.The Vehicle Operations and Maintenance Functions

Managers expressed a need to keep current in maintenance laws and regulations and emission testing and regulations, in particular.

A.2.4.Other

a. Training Needs of Technical Personnel

Although identifying specific needs for training non-managerial personnel was beyond the scope of the study, needs for technical training were identified for managers to be aware of. Meeting

technical training needs is an important management function. Some common needs identified are: (a) understanding electrical and mechanical equipment, particularly on newer buses; (b) a skills certification program for mechanics and maintenance personnel; (c) systematic driver training; (d) continuous safety training; (e) cardio-resuscitation techniques; and (f) Commercial Drivers License training.

Specific technical needs varied from district to district. Those which were discussed included: (a) fluids analysis, particularly for foremen; (b) Detroit Diesel Electronic Control; (c) Allison Transmission Electric Control; (d) farebox circuitry; and (e) repairing overhead lighting, particularly the overhead sign.

A.3. High Priority Short Courses to Address Management-Related Training Needs

Based on a review of the full range of managerial-related training needs identified through the interviews with managerial personnel from a selected sample of Connecticut transit agencies described in Chapter III, the Advisory Committee selected the following short courses as having the highest priority for implementation:

- Adopting and Implementing Total Quality Management In Public Transit Agencies
- Effective Marketing and Promotion for Public Transit Agencies
- Principles and Techniques for Successful Financial Management of Public Transit Agencies
- Personnel Management and Labor Relations for Public Transit Agencies
- Successful Supervisory Skills for Transit Management Personnel

A.3.1. Curriculum Outlines for High Priority Short Courses

SHORT COURSE TITLE: Total Quality Management for Transit Management Personnel

Course Objectives:

- To provide an understanding of the general principles of Total Quality Management
- To provide knowledge of specific principles of practice of Total Quality Management which will be relevant to the public transit environment
- Enable transit management personnel to apply the principles of Total Quality Management to the public transit agency environment

Target Group: Chief Executive Officers, Managers, and First Time Supervisors

Topics:

- Introduction to Total Quality Management
- What is Total Quality Management?
- History of Total Quality Management
- Why Total Quality Management for Transit Agencies?

- Total Quality Management Concepts, Terms and Definitions: Customer Focus, External and Internal Customers, Stakeholders, Mission, Performance Measures, Zero Defects, Continuous Quality Improvement, Cost of Quality, Teamwork, Participative Management, Empowerment.

- Total Quality Management Techniques For Transit Agencies: Assessment, Planning, Implementation, (Short-Term Improvements & Long-Term Change), Institutionalization.

References:

- Leadership and Empowerment for Total Quality, 75th Symposium Series, Report No.

992, The Conference Board, Inc., New York, NY

-Maintaining the Total Quality Advantage, Report No. 979, The Conference Board, Inc., New York, NY

-Employee Buy-In To Total Quality, Report No. 974, The Conference Board, Inc., New York, NY

-Linking Quality Management to the Strategic Initiative, Edward J. Kane, Report No. 963, pp. 29-31, The Conference Board, Inc., New York, NY, 1991.

-The Culture of Service Quality, Larry Schein, Report No. 963, pp. 9-12, The Conference Board, Inc., New York, NY, 1991.

-Total Quality Management in Public Transportation, TCRP Project F3 (Anticipated Completion Date May 1995), Contact: Stephen Andrie, Transit Cooperative Research Program, Transportation Research Board, Washington, D.C., 202-334-2176.

SHORT COURSE TITLE: Marketing and Promotion for Transit Management Personnel

Course Objectives:

- To present an overview of marketing and promotion techniques appropriate for public transit agencies
- To present the principles of marketing and promotion in sufficient detail to enable course participants to design and implement an appropriate marketing and promotion program for public transit agencies

Target Group: Chief Executive Officers, Marketing Managers

Topics:

- Marketing vs. Promotion.
- Organizing for Marketing.
- Developing Marketing Objectives.

- Marketing Mix: Price, Product, Promotion.
- Marketing Strategies: Undifferentiated Marketing, Differentiated Marketing, Concentrated Marketing, Coordination with Land Use Planning and Development.
- Guidelines for Developing a Marketing Strategy.
- Market Segmentation.
- Market Research: Complaints, Information Requests, Surveys.
- Advertising: Developing the Advertising Goals and Objectives, Developing the Budget, Identifying the Theme, Selecting the Medium, Timing Expenditures, Evaluation and Control, Image of the Transit Agency.
- Public Information: The Role of Public Information, Guidelines for Conveying Information (Identification Scheme [Color, Logo Typography], Route Schedules/Maps, Bus Stop Signs, Terminal and Transfer Point Information Tablets, Telephone Information, Handbills and Direct Mail, Personal Contact, Newspaper Advertising, Public Displays, Special Promotions).
- Community/Client Relations: Transit Employees, Riders, General Public, Government, Media.
- Promotion and Management of Special Events.

References:

- Mass Transit Management: A Handbook for Small Cities, Part 4: Marketing, U.S. Department of Transportation, Technology Sharing: DOT-T-88-12, Third Edition, Revised February 1988.
- Small Transit System Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-86-32, December 1985.
- West Virginia Transit Marketing Manual-"Get on the Bus and Ride," U.S. Department of Transportation, Technology Sharing: DOT-I-85-23, May 1984.
- Marketing Public Transit: An Evaluation, U.S. Department of Transportation, Technology Sharing: DOT-I-85-43, February 1985.

-Transit Marketing in Pennsylvania: A Handbook of Effective Transit Marketing Aids. U.S. Department of Transportation, Technology Sharing: 1986.

-Use of Market Research in Public Transit: An Evaluation, U.S. Department of Transportation, Technology Sharing: 1986.

-Transit Marketing - A Review of the State-of-the-Art and A Handbook of Current Practice, U.S. Department of Transportation, Urban Mass Transportation Administration, 1985.

-Marketing for Nonprofit Organizations, Philip Kotler, Prentice-Hall, Englewood Cliffs, N.H., 1975.

SHORT COURSE TITLE: Financial Management for Transit Management Personnel

Course Objectives:

- To provide an overview of the components of a financial management system for public transit agencies.
- To provide an understanding of the techniques and practices of financial management as it applies to public transit agencies.

Target Group: Chief Executive Officers, Financial Managers

Topics:

- Financial Planning Techniques.
- Accounting Fundamentals: The Accounting Process, Financial Statements, Cash and Accrual Basis of Accounting.
- Budgeting: Incremental Budgeting, Planning/Programming Budgeting, Management by Objective Budgeting, Zero-Based Budgeting, Preparing and Implementing the Budget

- Monthly Operating Report: Revenues, Expenses, Cash Flow Analysis, Operating Statistics.
- Cash Control: Vehicle Operator, Farebox, Money Counting, Transfer to Bank.
- Inventory Management: Inventory Management Objectives, Types of Inventories, Criteria for Effective Inventory Systems.
- Risk Management: Principles of Risk Management, Types of Risk, Loss Control Methods, Methods of Obtaining Insurance (Self Insurance Buying Pools, Mass Marketed Insurance, Assigned Risk Pools), Content and Structure of the Insurance Policy, Property Insurance, Liability Insurance, Establishing a Risk Management Policy.
- Cash Management: Cash Sources, Cash Disbursements, Cash Flow, Banking (Bank Selection, Short-Term Investments), Short-Term Debt Financing (Purposes of Debt, Short-Term Debt Mechanisms).
- Long-Term Capital Planning and Procurement: Long-Term Debt, Debt Mechanisms, Planning and Issuing Debt.
- Capital Expenditures: Compound Interest, Future Value, Present Value, Life-Cycle Costing, Buying vs. Rehabilitation.
- Annual Audit: Selecting the Auditor, Purpose of the Audit, Federal/State/Local Requirements, Transit Agency Requirements.

References:

- Small Transit System Management Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-86-32, December 1985.
- Financial Management for Transit: A Handbook, Department of Transportation, Technology Sharing: DOT-I-86-10, April 1985.
- Risk Management Manual for the Public Transit Industry, Vols. 1, 2, 3, U.S. Department of Transportation, Technology Sharing: DOT-T-88-23, August 1988.

-Simplifying Human Service Transportation and Small Transit System Accounting: An Eight State Perspective, U.S. Department of Transportation, Technology Sharing: DOT-I-83-25R, Revised Edition, April 1986.

SHORT COURSE TITLE: Personnel Management and Labor Relations for Transit Mangement Personnel

Course Objectives:

- To provide an overview of the concepts and principles of personnel management and labor relations as they apply to public transit systems
- To provide an understanding of the techniques and practices of personnel management and labor relations in public transit agencies

Target Group: Chief Executive Officers, Personnel Managers, Vehicle Operations Managers, Maintenance Managers

Topics:

- Job Descriptions: Job Analysis, Content of the Job Description.
- Recruiting Job Candidates.
- Selecting the Candidates for Interviewing
- Conducting the Interview.
- Using Tests.
- Checking Past Employment.
- Making the Job Offer.
- Probationary Period: Purpose, Effective Use
- Employee Evaluation: Purpose, Criteria, Legal Aspects.
- Career Development and Training.
- Employee Motivation: Incentives, Participative Management.
- Progressive Discipline: Principles of Progressive Discipline, Developing and Implementing a Progressive Discipline Policy.
- Employee Assistance Programs: Elements, Implementation.
- Equal Oppportunity and Affirmative Action: Federal, State and Local Laws and Regulations, Resolving Complaints.

- Labor Relations: Labor Agreements, Grievance and Arbitration Processes, Strategies for Contract Negotiations.
- Writing Policies and Procedures.

References:

- How to Write Position Descriptions Under the Factor Evaluation System, U.S. Office of Personnel Management, Washington, D.C., 1979, Superintendent of Documents, U.S. Government Printing Office.
- Two Goals in Every Performance Appraisal, H. Kent Baker, and Phillip I. Morgan, Personnel Journal, Costa Mesa, CA: A.C. Croft, Inc., September 1984.
- Performance Appraisal and the Law, Shelly R. Burchett, and Kenneth B. DeMeuse, Personnel, Saranac Lake, NY: American Management Association, July 1985.
- Situational Performance Appraisals, David L. Sears, Supervisory Management, Saranac Lake, NY: American Management Association, May 1984.
- Mass Transit Management: A Handbook for Small Cities, Part 3: Operations, U.S. Department of Transportation, Technology Sharing: DOT-T-88-09, February 1988
- Study of Unions, Management Rights and the Public Interest in Mass Transit, U.S. Department of Transportation, DOT-TST-76T-31, January 1977.
- Employee Assistance Programs for Transit Systems: A Procedural Guide and Model Program, Federal Transit Administration, September 1991.
- Employee Assistance Programs, Hermine Z. Levine, Personnel, Saranac Lake, NY: American Management Association, April 1985.

-What Bechtel Learned Creating an Employee Assistance Program, Personnel Journal, Costa Mesa, CA: A.C. Croft, Inc., September 1984.

-Evaluating EAP Vendors, Personnel Administrator, Alexandria, VA: American Society for Personnel Administration, August 1985.

-Comparative Labor Practices Report No. 6-Efficiency Incentive Plans, American Public Transit Association, Washington, DC: APTA, 1985.

-Assessing Personnel Motivation Needs in Transit: The Twin Cities Study, David Rubin, Washington, DC: Urban Mass Transportation Administration, 1983.

-Cooperative Initiatives in Transit Labor-Management Relationships, Jay A. Smith, University of North Florida: UMTA University Research Training Program, 1985.

-The Grievance-Arbitration Process, American Transit Association, Washington, DC: APTA, 1985.

SHORT COURSE TITLE: Supervisory Skills for Transit Management Personnel

Course Objectives:

- To provide an overview of the concepts and principles of successful supervision.
- To provide an understanding of the techniques and practices of successful supervision applied in the public transit work environment.

Target Group: All Management and Supervisory Personnel

Topics:

- Managing: Planning, Clarifying Authority, Setting-Up Controls, Providing Training, Selecting Qualified Employees, Delegating

Responsibilities, Problem Solving, Making Sound Decisions, Working With Unions, Providing for Safety, Time Management, Self-Development.

-Motivating: Performance Appraisal, Leadership, Understanding the Employee, Disciplining, Developing Teamwork, Bringing About Change.

-Communicating: Person to Person Communications, Group Communication, Written Communication, Public Relations.

References:

-Instructor's Guide on Successful Supervision for Local Road Supervisors, Federal Highway Administration Publication No. FHWA-RT-91-001, November 1990.

-Handbook on Successful Supervision for Local Road Supervisors, Federal Highway Publication No. FHWA-RT-91-002, November 1990.

A.4. Other Short Courses

The following short courses, which are also related to the training needs of management personnel in Connecticut's public transit agencies, were given a lower priority, by the Advisory Committee, for implementation. They are grouped according to priority for implementation as follows:

Group II:

- Principles of Transit Routing and Scheduling
- Orientation to Federal, State and Local Transit-Related Regulations
- Risk Management for Transit Management Personnel

Group III:

- Strategic Management for Transit Management Personnel
- Contracting and Procurement for Transit Management Personnel
- Maintenance Management for Transit Management Personnel
- Micro-Computer Applications for Managing the Maintenance of Transit Vehicles

Group IV:

- Evaluating the Performance of Transit Systems
- Planning and Implementing Micro-Computer Systems in Public Transit Agencies
- Orientation for Transit Policy Board Members
- Micro-Computer Applications for Transit Vehicle Operations

Curriculum outlines for the above short courses can be found in Appendix 4.

A.5. Resources for Developing and Presenting Short Courses

Table III-1 presents a description of training and educational resources available to address the training and educational needs of transit management personnel.

TABLE III-1

TRANSIT TRAINING RESOURCES

NAME	CONTACT	SUBJECTS	NAME	CONTACT	SUBJECTS
Learning Dynamics	Harold Phair 203-247-9754	Transit Management; Note: Has capabilities for developing interactive multimedia training modules	CIRMA New Haven, CT	David Demchak 203-772-2168	Risk Management
Community Transp. Assn. of America	Charles Dickson 202-628-1480	Foundations of Transit Mgt.; Building the Org. Team; Planning for Org. Success; Managing the Personnel Process; Practical Financial Mgt. for Non-Financial Mgrs.; Managing Transit Main.; Managing System Safety; Marketing Strat. for Growth; Evaluating System Performance	DCA Seminars Newton, MA	Barbara Gannon	Transit Management
Dr. Jean Lebrun Communications Specialist	Charles Dickson CTAA; 202-628-1480	People Skills	National Transit Institute, Rutgers University, Rutgers, N.J.	Alan Gibbs 908-932-1200	Total Quality Manage- ment and other topics
Dr. Lawrence Sherr School of Bus. Adm. University of Kansas	Charles Dickson CTAA	Total Quality Mgt.	Iowa Transp. Ctr. Iowa State Univ.	Jan Graham 515-294-5642	Vehicle Fleet Management
Gere Timberlake, CEO TransED, Inc.	Charles Dickson CTAA	Transit Training	ATE Mgt. & Service Co., Inc.	Richard Dunning Service Co., Inc. 513-381-7424	Labor Relations; Main. Mgt. Risk Mgt.; Marketing Scheduling/Service Design
UConn, Labor Education Center	Mark Sullivan 203-486-3417	Labor Relations	The Institute for Urban Transp.	Kent McDaniel 812-855-8143	Labor Rel.; Marketing; Bus Fleet Mgt. Tools; Discipline, Handling Grievances, Arbitr.
UConn, School of Business Administration	Dr. Donald Huffmire 203-486-4309	Strategic Mgt. 1st Line Supervision	Office of Gov't. Programs, Louisiana State University	Billie Tripp 505-388-6200	Organizational Mgt.; 1st Line Supervisory Skills; Communication Skills; Time Mgt.; Stress Mgt.; Conflict Resolution; Positive Discipline; Motivation; Goal Setting
University of Wisc.- Milwaukee, Ofc. of Statewide Transp. Prgrms.	David Cyra 414-229-4427	Safety; Specialized Transit Operations; Marketing; Planning/ Operations; Mgt; Human Resource Dev.			

A.6. Cost of Short Courses

The cost of presenting short courses/workshops is estimated to be \$2,000/day.

B. ORGANIZING AND STAFFING

B.1. The Transportation Institute at UConn

The Transportation Institute at UConn is ideally positioned and suited to take on the responsibilities of training and technical assistance for public transit agencies. The Institute is already intensely involved in a variety of transportation-related research, education, technical assistance, training and technology transfer activities, including those arising out of its participation in the Region One University Transportation Center at MIT -- a consortium of the six New England State Universities, Harvard and MIT -- formed to foster research, education and technology transfer for the New England Region.

Addition of a transit training and technical assistance program at the Institute would create an unprecedented organizational environment which offers the potential for new and imaginative developments in transit operations through the interaction of the program with the Institute's ongoing transportation-related research, education, training and technology transfer activities.

The Transportation Institute could readily act as a broker to facilitate Section 10 training for transit systems in Connecticut and, ultimately, for Section 10 grantees elsewhere. As in other states, the University can offer courses eligible for Section 10 funding either directly, or by engaging outside experts.

Such arrangements provide multiple benefits: facilitating transit-specific technical training under Section 10; enhancing UConn's already developing reputation for transit training and technical assistance; responding to a priority emphasis area of the Federal Transit Administration; and supporting ConnDOT's goals to improve the quality performance of publicly-funded transit operations.

In an era of limited resources and emphasis on training to enhance the effectiveness of transit systems, it is certainly an appropriate role for the State University in Connecticut to work with ConnDOT, CT Transit, and other operators in the areas of training and technical assistance.

A Transit Training and Technical Assistance Advisory Committee, with staff support from the Institute, should be created to provide advice on program activities.

The Transportation Institute is the focal point for the University of Connecticut's activities in the transportation sector. Faculty and students from throughout the University participate in its programs of education, research and public service. Presently, the Institute's five major program areas are as follows:

- *The Transportation and Urban Engineering Graduate Program
- *The Cooperative Research Program
- *The Transportation Research Program
- *The Transportation Technology Transfer Center
- *The Advanced Transportation Education Program

Figure 3 shows the existing organizational structure of the Transportation Institute.

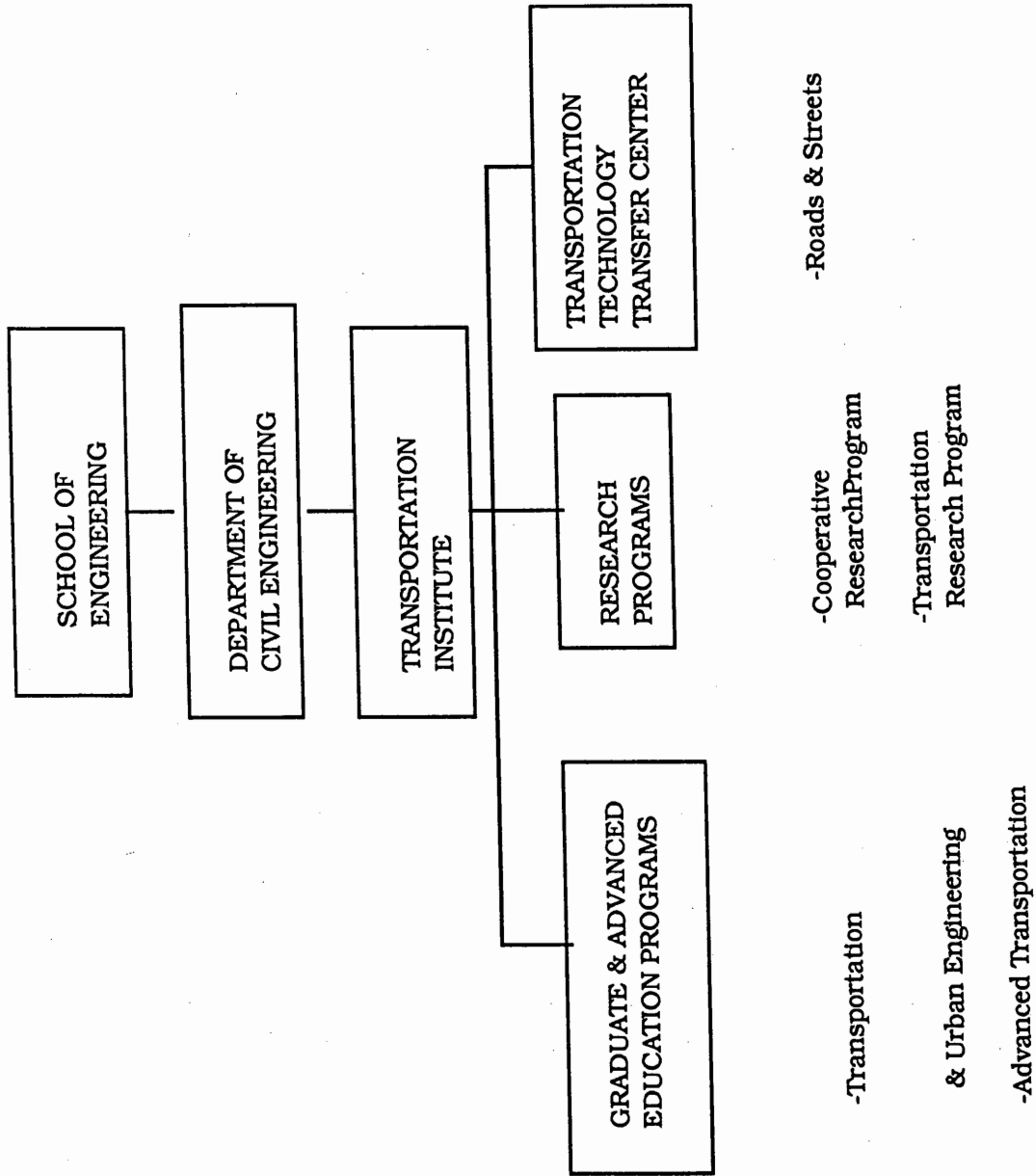


Figure 3 Transportation Institute: Organizational Structure & Programs

B.1.1 The Transportation and Urban Engineering Graduate Program

While not an academic unit of the University, the Institute has the primary role in coordinating educational programs at the graduate level in transportation and urban engineering. Programs are offered at both the M.S. and Ph.D. levels. Since an engineering degree is awarded, students are expected to have a solid foundation in that discipline. The core curriculum ensures that graduates will possess the necessary professional training to contribute effectively to implementation of the complex technologies associated with current and evolving transportation systems.

In addition to the core curriculum, students select subjects from one or more specific "tracks." For example, the *environmental track* permits students to interact with faculty of the Environmental Research Institute in coursework and research in that area. Similarly, in the *systems and management track*, students take courses offered by the School of Business. Students may also elect the more traditional *materials and structures track* which draws heavily upon the Department of Civil Engineering.

B.1.2. The Cooperative Research Program

This program, administered by the Institute, formally began in 1961 and is funded by the Connecticut Department of Transportation. In order to be included in the program, a research project must be judged to address a critical Department of Transportation need and to be consistent with the research mission of the University. Policies are established and priorities are set by the Joint Highway Research Advisory Council which consists of four representatives from the Department of Transportation and four representatives from the University. By the end of 1993, over 100 projects had been completed. Topics of research cover a wide range, including: construction materials, bridges, traffic

engineering, public transit, and maintenance practices. Many projects have dealt with environmental, economic, and management issues, and have involved researchers from numerous departments of the University.

B.1.3. The Transportation Research Program

This program differs from the Cooperative Research Program in that it is funded by sources other than the Connecticut Department of Transportation and focuses on topics beyond the immediate interest of that department. Typical funding sources are the University Transportation Centers Program and the Federal Transit Administration as well as regional and local agencies.

The University of Connecticut through the Transportation Institute is one of eight institutions participating in the U.S. DOT-funded Region One University Transportation Center program at the Massachusetts Institute of Technology. This program funds and conducts research and the development of educational/training resources for a wide range of transportation needs including public transit. The Transportation Institute at UConn has an already established role in this area through its work on the following projects funded through the Region One University Transportation Center at MIT:

"Identification of Research Projects to Address the High Priority Needs of Transit Operating Agencies"

"A Plan for the Development of Educational and Training Resources for Small and Medium-Size Transit Agencies in the Region One University Transportation Center Area"

"The Development of a Short Course on Strategic Management for Transit Managers"

B.1.4. The Transportation Technology Transfer Center

This popular program provides training and technical assistance to Connecticut's local governments in traffic engineering, highway safety, road and bridge construction and maintenance. It began in 1983 as part of the federally sponsored Rural Technical Assistance Program. More recently, the needs of urban areas have been addressed.

The **Quarterly Newsletter**, published by the Center, provides local officials information on the latest techniques and practices being used throughout the United States for the management, construction, and maintenance of local roadway and traffic systems, and operation of public transit systems.

The Center also provides **Technical Advice** on problems relating to road and bridge design, construction, maintenance, traffic safety and operations, and the management and operation of public transit systems. **Technical Publications, Video Training Tapes, and Traffic Monitoring Equipment** are provided on loan to local agencies.

The **Connecticut Road Master Program** is a series of workshops designed to provide Connecticut's road maintenance supervisors and those preparing for supervisory positions with a knowledge of the fundamentals of road maintenance management procedures and techniques.

The Center provides **Workshops** for local government personnel on a wide variety of topics related to the planning, design, and operation of the local transportation system.

B.1.5. The Advanced Transportation Education Program

This program consists of workshops and short courses at the graduate professional level and dealing with important technical and policy issues. Workshops planned for 1993-94

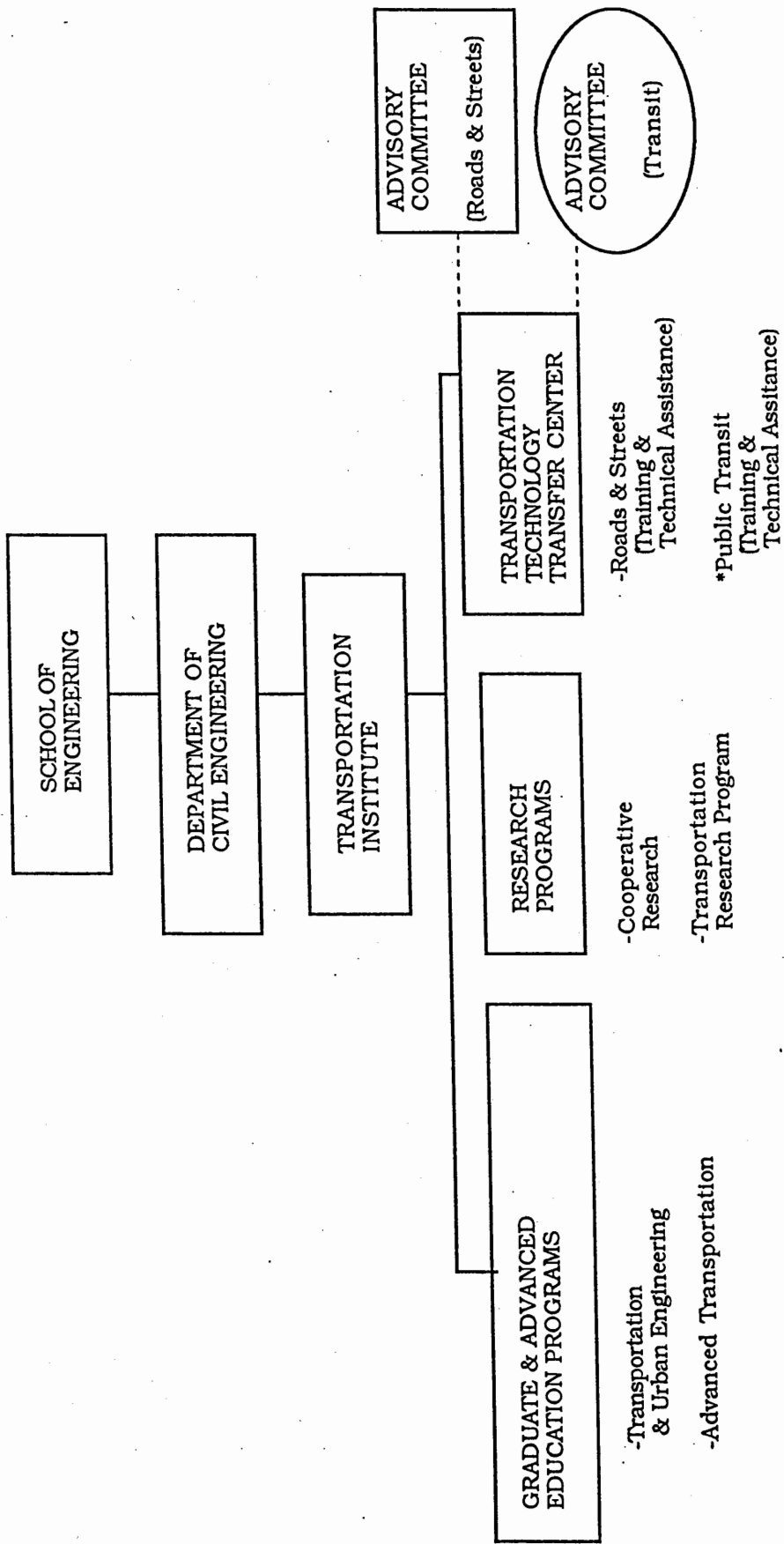
include **Environmental Issues in Transportation, Intelligent Vehicle/Highway Systems, and Geographic Information Systems in Transportation**. In addition, the six management systems of the **Intermodal Surface Transportation Efficiency Act (ISTEA)** will be the subject of several workshops.

Addition of a transit training and technical assistance program at the Institute would create an unprecedented organizational environment which offers the potential for new and imaginative developments in transit operations through the interaction of the program with the Institute's ongoing transportation-related research, education, training and technology transfer activities.

A Transit Training and Technical Assistance Advisory Committee, with staff support from the Institute, could be created to provide advice on program activities.

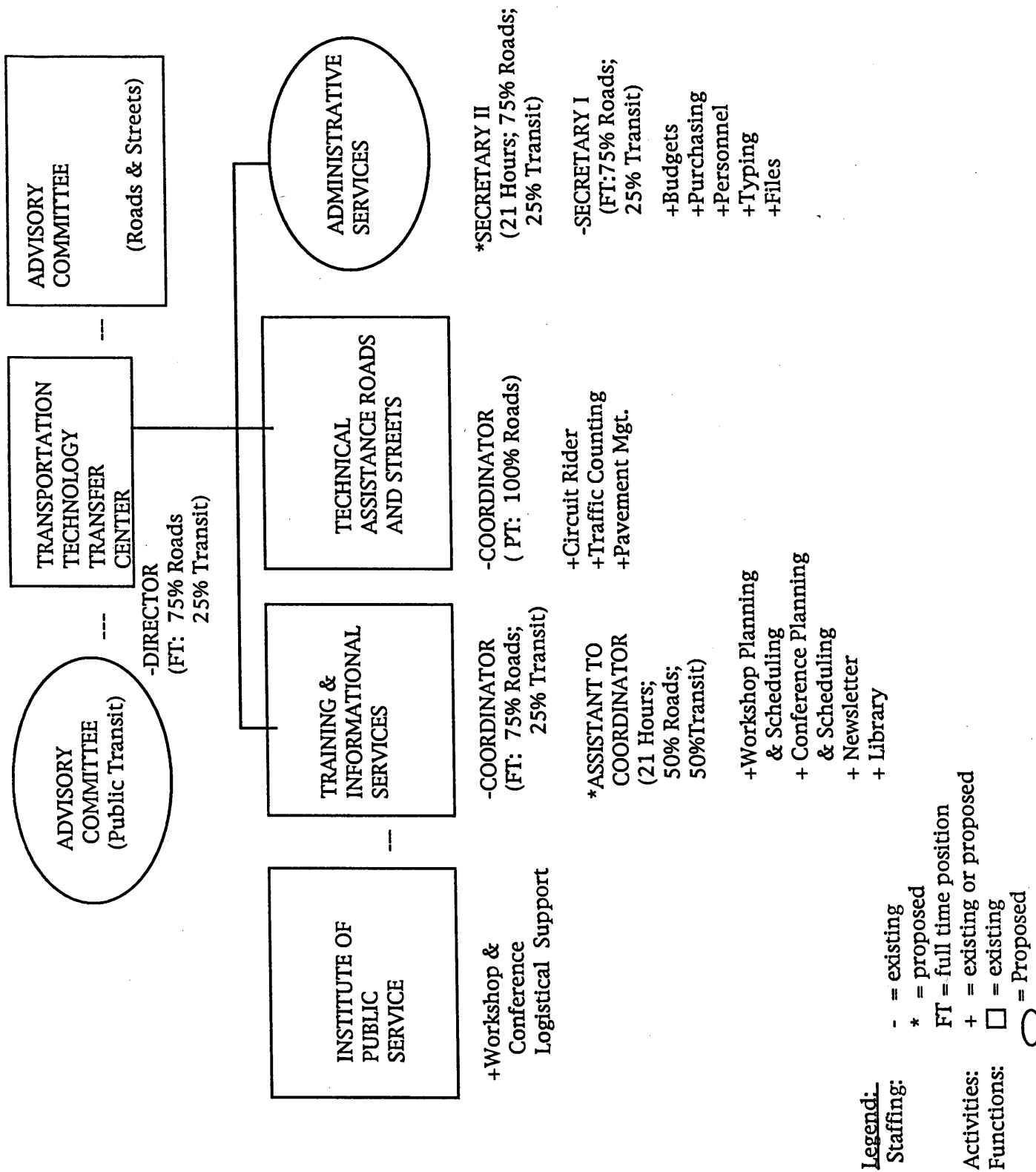
B.2. Staffing the Continuing Transit Training and Technical Assistance Program:

Figure 2 shows the staffing requirements for the program.



- Legend:
- Existing Function
 - * Proposed Function
 - Existing
 - Proposed

Figure 1 Transportation Institute: Organizational Structure & Functions.



Legend:
Staffing:
 - = existing
 * = proposed
 FT = full time position
Activities:
 + = existing or proposed
Functions:
 □ = existing
 ○ = Proposed

Figure 2 Transportation Technology Transfer Center: Staffing & Functions

C. FUNDING THE CONTINUING TRANSIT TRAINING AND TECHNICAL ASSISTANCE PROGRAM

C1. Costs:

A. DIRECT COSTS:

Salaries:

Director (25% of FT).....	\$ 14,700
Coord. Trng. & Info. Services (25% of FT).....	\$ 8,400
Assist. to Coord. Trng & Info. Services (50% of 21 hrs.).....	\$ 7,200
Secretary II (25% of 21 hrs.).....	\$ 4,200
Secretary I (25% of FT).....	\$ 6,000
Total Salaries.....	\$ 40,500

Fringe:

Director.....	\$ 6,174
Coord. Trng & Info. Services.....	\$ 3,528
Assist. to Coord. Trng & Info Services.....	\$ 3,024
Secretary II.....	\$ 1,764
Secretary I.....	\$ 2,520
Total Fringe.....	\$ 17,010

Total Salaries & Fringe.....	\$ 57,510
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Other:

Supplies.....	\$ 500
Postage.....	\$ 500
Telephone.....	\$ 400
Printing.....	\$ 1,500
Publications.....	\$ 1,000
Subscriptions/Memberships.....	\$ 500
Equipment.....	\$ —
Travel.....	\$ 1,500
Contractual (workshops/conferences: 5 @ \$5,000 ea.).....	\$ 25,000
Total Other.....	\$ 30,900

Total Direct Costs.....	\$88,410
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B. INDIRECT COSTS

(25% TOTAL SALARIES):.....	\$ 10,125
----------------------------	-----------

C. TOTAL COSTS:.....	\$98,535
----------------------	----------

C.2. Sources of Funding:

The following are potential funding sources for the cost of the recommended program:

Federal Transit Administration Section 10

Federal Transit Administration Rural Technical Assistance Program

Federal Highway Administration Local Technical Assistance Program

Revenues from Short Courses/Conferences

Other Sources:

*Section 3 1992 Federal Transit Act

*Section 9 1992 Federal Transit Act

APPENDIX 1: ADVISORY COMMITTEE

Project Advisory Committee

1. Thomas Kirker, Regional Transit Manager
Bureau of Public Transportation
Connecticut Department of Transportation
2. Stanley Grieman, Acting Director
Estuary Transit District
3. James Sime, Assistant Director for Research
Division of Research and Materials
Bureau of Planning and Research
Connecticut Department of Transportation
4. David Lee, Transit Services Assistant General Manager
Connecticut Transit
5. Louis Shulman, Executive Director
Norwalk Transit District
6. Henry Jadach, Chairman
CT Association of Community Transit

APPENDIX 2: FOCUS GROUP INTERVIEW GUIDE

FOCUS GROUP INTERVIEW GUIDE

PART I

OBJECTIVE: To develop information on: the number of people supervised, existing training programs and previous training.

1. What transit agency do you work for? _____
2. What is the size of your agency--roughly? _____ people work here.
3. How many people do you directly supervise? _____ Do any of these people supervise other employees? If so, how many _____?
4. Does your agency have any formal training programs? Please describe them if it does.

5. Have you had an opportunity to attend or take part in any previous training--short courses or seminars, special training, certificates, degrees, etc.? Please refer to your job description or resume if that would help jog your memory.

- a. When the training took place, approximately:

Please describe the training briefly:

b. Other training:

When: _____

Please describe it briefly:

PART II

OBJECTIVE: To identify the responsibilities of the management/supervisory personnel interviewed.

1. Transit research has identified several areas of general functions which managers and employees usually must perform in running a transit agency. These are:
 - A. Finance--Budgeting, payroll, taxes, purchasing, risk management, insurance, etc.
 - B. Personnel--Hiring, firing, promotions; negotiating raises and pay freezes, transfers, etc.
 - C. Planning/Marketing--Strategic decisions about operations, advertising, contracting with other agencies and private companies, etc.
 - D. Scheduling/Dispatch--Routes, schedules, etc.
 - E. Vehicle Operations/Vehicle Maintenance--Driving, maintenance, repair, driver assignments, etc.

Which of the above functions do you or your supervisees perform? Describe the 3 or 4 basic tasks that you perform in each of these functional areas.

_____Finance

- 1.
- 2.
- 3.
- 4.

_____Personnel

- 1.
- 2.
- 3.
- 4.

_____Planning/Marketing

- 1.
- 2.
- 3.
- 4.

____Scheduling/Dispatch

- 1.
- 2.
- 3.
- 4.

____Vehicle Operations/Maintenance

- 1.
- 2.
- 3.
- 4.

2. Are there functions which you or your supervisees do that are not covered by the above categories?

If yes, describe those functions.

PART III

OBJECTIVE: To identify the relative importance of the duties of transit management/supervisory personnel.

Please tell us how important you feel your different job duties are for the smooth running of your agency. Using the specific tasks that you mentioned earlier, please rate the tasks in their importance to your overall job performance. Note: "least important" (1), "most important" (5).

FUNCTION AREA 1--Current tasks:

	Least Important			Most Important	
1.	1	2	3	4	5
2.	1	2	3	4	5
3.	1	2	3	4	5
4.	1	2	3	4	5

FUNCTION AREA II--Current tasks:

	Least Important			Most Important	
1.	1	2	3	4	5
2.	1	2	3	4	5
3.	1	2	3	4	5
4.	1	2	3	4	5

FUNCTION AREA III--Current tasks:

	Least Important			Most Important	
1.	1	2	3	4	5
2.	1	2	3	4	5
3.	1	2	3	4	5
4.	1	2	3	4	5

FUNCTION AREA IV--Current tasks:

	Least Important			Most Important	
1.	1	2	3	4	5
2.	1	2	3	4	5
3.	1	2	3	4	5
4.	1	2	3	4	5

FUNCTION AREA V--Current tasks:

	Least Important			Most Important	
1.	1	2	3	4	5
2.	1	2	3	4	5
3.	1	2	3	4	5
4.	1	2	3	4	5

PART IV

OBJECTIVE: To identify topics for short courses to meet the training needs of management/supervisory personnel.

The following list of subject areas may be related to your job. In which of these areas would it be most useful for you to acquire training or additional expertise?

Finance and Administration

- Budgeting Transit Revenues and Expenses
- Financial Reporting Techniques
- Internal Audit Procedures for Transit Systems
- Computer Applications for Transit System Administration
- Performance Monitoring and Analysis
- Other: _____

Labor Relations

- Preparing for Grievances and Arbitrations
- Union Contract Negotiation
- Implementing Progressive Disciplinary Policies and Incentives
- How to Write Policies and Procedures Effectively
- Legal Issues for Transit Managers
- Other: _____

Risk Management

- Implementing a System Safety Plan
- Insurance Audit and Procurement
- Employee Safety and Worker's Compensation
- Fare Collection, Cash Handling, and Revenue Security
- Accident Investigation and Claims Administration
- Other: _____

Service Planning and Scheduling

- Patronage and Cost Estimation Techniques (Fixed Route) Service
- Service Analysis
- Run Cutting and Scheduling
- Route Planning
- Pricing of Transit Services
- Transportation Systems Management/Intermodal Coordination
- Computer Applications for Service Planning and Scheduling
- Other: _____

Transit Marketing

- Customer Relations/Passenger Attitude Surveys
- User Information Techniques
- Internal Marketing/Employee Communications
- Public/Media Relations
- Special Events Planning/Operation
- Fare Prepayment Techniques
- Other: _____

Maintenance

- Implementing a Fleet Maintenance Plan
- Preventive Maintenance Strategies
- Facilities Maintenance
- Inventory Control Techniques
- Purchasing Procedures
- Performance Monitoring for Maintenance Operations
- Fluids Analysis
- Other: _____

Transit Operations

- Operator Training and Retraining Programs
- Ideal Manpower Planning
- Dispatching/Supervision of Street Operations
- Monitoring and Analysis of Street Service
- Contingency Planning/Responding to Emergencies
- Other: _____

Paratransit Operations

- Service Contracting
- Service Evaluation and Analysis
- Demand and Cost Estimation
- Scheduling Demand-Response Service
- Intermodal Integration
- Other: _____

Policy/Management ,

- Regulatory Compliance
- Performance Monitoring and Analysis
- Management Systems
- Employee Compensation/Benefits Administration
- Orientation Training for Board Members/Local Elected Officials
- Orientation to Federal Transit Assistance Programs
- Employee Assistance Programs/Drug-Free Workplace
- Implementing Total Quality Management
- Long Range Capital Planning and Procurement
- Other: _____

**APPENDIX 3: TRANSIT AGENCIES SELECTED
FOR FOCUS GROUP INTERVIEWS**

1. Northeast Transit: Waterbury
2. Southeast Transit: Norwich
3. Northeastern Connecticut Transit District: Brooklyn
4. Norwalk Transit District
5. Milford Transit District
6. Connecticut River Estuary Transit District
7. Connecticut Transit: Hartford

**APPENDIX 4: ADVISORY COMMITTEE TRANSIT MANAGEMENT
TRAINING NEEDS ASSESSMENT QUESTIONNAIRE**

**TRANSIT MANAGEMENT TRAINING NEEDS ASSESSMENT
ADVISORY COMMITTEE QUESTIONNAIRE**

I. The following are the titles of the transit management related short courses which are recommended in the Task 4 Interim Report.

1. ASSIGN A GROUP NUMBER STARTING WITH 1 (1 = the highest priority, 2 = next highest priority, etc.) TO EACH OF THE SHORT COURSE TITLES WHICH YOU AGREE SHOULD BE INCLUDED IN A TRAINING/EDUCATIONAL PROGRAM FOR MANAGERS AND SUPERVISORS OF CONNECTICUT'S PUBLIC TRANSIT ORGANIZATIONS. IN ASSIGNING THE NUMBERS, A MAXIMUM OF FOUR (4) SHORT COURSES SHOULD BE INCLUDED IN EACH GROUP.

2. ASSIGN A "D" (delete) TO ANY OF THE SHORT COURSE TITLES WHICH YOU THINK SHOULD NOT BE INCLUDED IN A TRAINING/EDUCATIONAL PROGRAM FOR MANAGERS AND SUPERVISORS OF CONNECTICUT'S PUBLIC TRANSIT ORGANIZATIONS.

3. ADD ANY SHORT COURSE TITLES TO THIS LIST, WHICH YOU THINK SHOULD BE INCLUDED IN A TRAINING/EDUCATIONAL PROGRAM FOR MANAGERS AND SUPERVISORS OF CONNECTICUT'S PUBLIC TRANSIT ORGANIZATIONS, AND ASSIGN THE APPROPRIATE GROUP NUMBER TO THEM.

SHORT COURSE TITLE	GROUP
Marketing and Promotion.	_____
Personnel Management.	_____
Financial Management.	_____
Transit Board Member Orientation.	_____
Strategic Management.	_____
Total Quality Management.	_____
System Performance Evaluation.	_____
Planning and Implementing Micro-Computer Systems.	_____
Contracting and Procurement	_____
Risk Management.	_____
Maintenance Management	_____
Micro-Computer Applications for Vehicle Maintenance.	_____
Principles of Transit Routing and Scheduling.	_____

Micro-Computer Applications for
 Vehicle Operations. _____
 Supervisory Skills for Transit Managers. . . _____
 Orientation to Federal, State, and Local
 Regulations. _____

Additional Short Courses:

II. If you want to recommend topics to be included in or deleted from any of the above short courses (see "II. RECOMMENDED TRAINING SUBJECTS," attached for topics presently recommended in the Task 4 Interim Report for each of the short courses listed above), complete the following:

1. SHORT COURSE TOPICS TO BE ADDED

SHORT COURSE TITLE: _____
 TOPICS: _____

SHORT COURSE TITLE: _____
 TOPICS: _____

SHORT COURSE TITLE: _____
 TOPICS: _____

SHORT COURSE TITLE: _____
TOPICS: _____

2. SHORT COURSE TOPICS TO BE DELETED

SHORT COURSE TITLE: _____
TOPICS: _____

SHORT COURSE TITLE: _____
TOPICS: _____

SHORT COURSE TITLE: _____
TOPICS: _____

SHORT COURSE TITLE: _____
TOPICS: _____

III. Please include any additional comments you may wish to make.

IV. PLEASE COMPLETE AND RETURN THE ABOVE, BY FAX, BY THURSDAY, FEBRUARY 11, TO:

FAX: 486-2298

Gerald M. McCarthy
Associate Director
Transportation Institute
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**APPENDIX 5: SHORT COURSE CURRICULUM OUTLINES
(PRIORITY GROUPS II, III, IV)**

PRIORITY GROUP II SHORT COURSE CURRICULUM OUTLINES:

Short Course Subject: Principles of Transit Routing And Scheduling

Course Objectives:

-To present the principles and techniques of transit service route layout, scheduling and run cutting.

Target Group: Vehicle Operations Managers, Dispatchers

Topics:

- Routing/Scheduling Considerations: Travel Time (Walking To and From Bus Stop, Waiting, Riding, Transfer), Convenience (Service Frequency, Hours of Service, Number of Transfers, Fare Collection System), Comfort (Crowding/Standing, Vehicle Characteristics, Bus Stop Shelters), Reliability (Schedule Adherence, Delays on Route), Fares.
- Service Standards: Headways, Vehicle Occupancy (Maximum Passenger Load), Area Coverage, On Time Reliability.
- Forecasting Demand.
- Routing: Radial Patterns, Grid Patterns, Other (Through Routing, Cycle Routing, Reverse Routing, Balloon Routing), Access to Routes (Fine-Grained Service, Loose-Grained Service, Subscription Service, Demand Responsive Service) Guidelines for Routing, Evaluating Existing Routes (On-Board Passenger Counts Including Boarding and Alighting, Transfer Analyses, Surveys, Monitoring Land Use Changes, Monthly Route Performance Reports), Service Integration.
- Scheduling: Guidelines for Scheduling, Demand-Based Scheduling (Passenger Load Standard, Vehicle Capacity, Headway), Policy-Based Scheduling (Cycle Schedules, Non-Cycle Schedules), Schedule Time Periods, Establishing the Schedule, Determining Headways, Runcutting and Driver Assignments (Overtime Criteria, Minimum Daily Guarantee, Maximum Continuous Duty, Maximum Spread, Labor Contract Considerations).
- Resource Allocation.

References:

- Mass Transit Management: A Handbook for Small Cities Part 3: Operations, U.S. Department of Transportation, Technology Sharing: DOT-T-88-12, Third Edition Revised, February 1988.

-Bus Scheduling Manual: Traffic Checking and Schedule Preparation, U.S. Department of Transportation, Technology Sharing: DOT-I-82-23, Reprinted July 1982.

-Design of Public Transportation Services, Transportation Research Record 818, Transportation Research Board, Washington, DC, 1981.

-Operating Strategies for Major Radial Bus Routes, US Department of Transportation, UMTA, May 1984.

-Lab and Field Manual for Transportation Engineering, Chapter 11: Designing a Bus Route and Schedule, C. Jotin Khisty and M.D. Kyte, Prentice-Hall, 1992.

Short Course Subject: Orientation To Federal, State and Local Regulations

Course Objectives:

-To provide an overview of the requirements of current Federal, State and Local transit-related regulations.

Target Group: All Management and Supervisory Personnel

Topics:

- | | |
|------------------------------------|------------------------------|
| -Americans With Disabilities Act | -Buy America |
| -Equal Opportunity | -Federal Title VI |
| -Minority and Women Owned Business | -Clean Air Act |
| -Sexual Harassment | -Commercial Driver Licensing |
| -Drug Free Workplace | -Contracting Procedures |
| -OSHA | -Section 15 Reporting |
| -Third Party Procurements | -Triennial Review |

References:

-Relevant Federal, State and Local transit-related regulations.

Short Course Subject: Risk Management For Transit Management Personnel

Course Objectives:

- To provide an understanding of the need for and benefits of an effective risk management system.
- To provide an overview of the concepts and principles of risk management.

Target Group: Chief Executive Officers, Financial Managers, Vehicle Operations Managers, Maintenance Managers

Topics:

- The Risk Management Process: Risk Identification, Risk Evaluation, Risk Treatment Analysis, Decision-Making and Implementing, Monitoring.
- Risk Identification and Evaluation: Types of Risk, Identification Methods, Risk Evaluation.
- Loss Control Methods and Their Application.
- Risk Financing: Factors to Consider, Transit Industry Risk Management Practices, Self Insurance, Insurance Pools.
- Risk Transfer: Insurance and Non-Insurance, Types of Insurance Policies, Methods of Obtaining Insurance (Group Buying Pools, Mass Marketed Insurance, Assigned Risk Pools), Content and Structure of the Insurance Policy, Purchasing Commercial Insurance (Selecting the Method of Obtaining Insurance, Screening the Transit Agency to the Insurer.
- Claims and Crisis Management: Claims Management, Loss Records, Developing a Crisis Plan.
- Use of Outside Assistance: When Should a Consultant Be Hired? The Consultant Hiring Process.

References:

- Risk Management Manual for the Public Transit Industry: Vols. 1, 2, 3, U.S. Department of Transportation, Technology Sharing: DOT-T-88-23, August 1988.
- Public Transit Risk Management: A Handbook for Public Transit Executives, U.S. Department of Transportation, Technology Sharing: DOT-I-84-20, August 1984.
- Risk Management Primer, Isabella County Transportation Commission, Mt. Pleasant, MI, 1990.
- Financial Management for Transit: A Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-86-10, April 1985.
- Risk Management Made Easy, D. Burton, Community Transportation Reporter, December 1988.

PRIORITY GROUP III SHORT COURSE CURRICULUM OUTLINES:

Short Course Subject: Strategic Management for Transit Management Personnel

Course Objectives:

- To explain the benefits of the application of the Strategic Management concept to public transit agencies
- To explain the concept of Strategic Management, including how it differs from Strategic Planning
- To present the methodology and techniques of Strategic Management appropriate for small and medium size transit providers
- Upon completion of the course, the target group will be able to apply the techniques of Strategic Management in their agencies

Target Group: Chief Executive Officers, Transit Agency Board Members

Topics:

- Strategic Management vs. Strategic Planning.
- Situation Assessment: Re-Examining/Identifying the Need/Role of Transit in the Community, Identifying and Assessing Capabilities, Determining the Mission/Goals/Objectives.
- Fiscal Planning: Assessment of Capital and Operating Funding Resources, Development and Evaluation of Alternative Strategies, Budgets and Their Use for Short-Range Planning, Performance Monitoring and Fiscal Control.
- Implementation: Development of the Implementation Schedule, Assignment of Responsibilities (Allocation of Labor, Transit Service Planning, Marketing, Community Relations).
- System Performance Evaluation: Efficiency Measures (Labor Efficiency, Vehicle Efficiency, Fuel Efficiency, Maintenance Efficiency, Overall Efficiency), Service Effectiveness Measures (Utilization of Service, Revenue) Peer Group Comparisons.

References:

- Mass Transit Management, A Handbook for Small Cities, Part I Goals, Support, Finance, U.S. Department of Transportation, Technology Sharing: DOT-T-88-09, February 1988.
- Strategic Planning in Small and Medium-Size Transit Agencies: A Discussion of Practices and Issues, U.S. Department of Transportation, Urban Mass Transportation Administration, August 1986.

- Managing Public Transit Strategically, Gordon J. Fielding, Jossey-Bass Inc. Publishers, 1987.
- Strategic Management: An Integrative Perspective, A.C. Hax, and, N.S. Majluf, Englewood Cliffs, N.J: Prentice-Hall, Inc., 1984.
- One More Time: What Do We Mean by Strategic Management? David P. Smith, Hospital & Health Services Administration, May 1987, pp. 219-233.
- A Guide To Strategic Planning for Transit Properties, US Department of Transportation, Technology Sharing: DOT-T-90-07, December 1988.
- From Strategic Planning to Strategic Management, H.I. Ansoff, and R.B. Declerck, John Wiley & Sons, New York, 1976.
- Strategic Management for Competitive Advantage, F.W. Gluck, S. Kaufman, and A.S. Walleck, Harvard Business Review 58(4):154-161, July-August 1980.
- Transit Corporate Planning: A Methodology for Trading Off Fares, Service Levels, and Capital Budgets, Technology Sharing: DOT-I-87-12, U.S. Department of Transportation, July 1985.
- A Casebook of Short-Range Actions to Improve Public Transportation, U.S. Department of Transportation, UMTA, February 1983.

Short Course Subject: Contracting and Procurement For Transit Management Personnel

Course Objectives:

- To provide an understanding of the need for and benefits of an effective contracting and procurement system.
- To provide an overview of the concepts and principles of contracting and procurement in the public transit environment.
- To provide an understanding of the techniques and practices of an effective public transit contracting and procurement system.

Target Group: Chief Executive Officers, Financial Managers, Maintenance Managers

Topics:

- Types of Procurement: Supplies, Fuel/Lubricants, Parts, Services.
- Establishing Procurement Procedures: Federal Transit Administration Policies, State and Local Policies, Transit Agency Policies.
- Coordinating the Development of Specifications.
- Soliciting Bids and Proposals: Small Purchase Policies, Competitive Sealed Bids, Competitive Negotiation, Noncompetitive Negotiation.
- Developing Criteria for Vendor Selection.
- Managing Inventory: Inventory Levels, Reorder Points.
- Monitoring/Quality Assurance: Common Procurement Problems.

References:

- Mass Transit Management: A Handbook for Small Cities Part 3: Operations, U.S. Department of Transportation, Technology Sharing: DOT-T-88-11, Third Edition Revised, February 1988.
- Mass Transit System Management Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-86-32, December 1985.
- Handbook for Management Performance Audits, U.S. Department of Transportation, Technology Sharing: DOT-T-88-21, Second Edition Revised, July 1988.
- Third Party Contracting Guidelines, U.S. Department of Transportation, UMTA: C. 422.1A, May 1985.
- Small Transit Vehicles: How to Buy, Operate and Maintain Them, A.B. Bohani et al., NCTRDP Report 11, Transportation Research Board, Washington, DC, January 1985.
- Estimating the Potential Cost Savings of Transit Service Contracting, G. Guliano and R.E. Teal, Institute of Transportation Studies, Irvine, CA, January 1987.
- Potentials and Problems of Private Sector Transportation Services: Activities in the New York Region, U.S. Department of Transportation, UMTA, January 1987.
- Involving Private Providers in Public Transportation Programs: Administrative Options (Working Paper), U.S. Department of Transportation, UMTA, April 1981.

Short Course Subject: Maintenance Management For Transit Management Personnel

Course Objectives:

- To provide an understanding of the need for and benefits of an effective maintenance management system.
- To provide an overview of the concepts and principles of a public transit maintenance management system.
- To provide an understanding of the techniques and practices of an effective public transit maintenance management system.

Target Group: Chief Executive Officers, Maintenance Managers/Supervisors

Topics:

- Responsibilities of the Maintenance Manager: Fleet Size [Including Spares Ratio], Vehicle Selection, Vehicle Replacement, Preventive Maintenance, Repair, Budgeting, Communication, Quality Control.
- Vehicle Procurement: Bus Replacement/Rehabilitation, Decision-Making.
- Preventive Maintenance: Failure Pattern Analysis Techniques, Developing the Schedule of Preventive Maintenance Inspections/Services/Adjustments, Organizing for the Preventive Maintenance Activities, Monitoring the Preventive Maintenance Activities.
- Repair: Control of Repair Work (Vehicle Daily Fuel Record, Vehicle Maintenance Master Record).

References:

- Maintenance Manager's Manual for Small Transit Agencies, U.S. Department of Transportation, Technology Sharing: DOT-T-88-08, March 1988.
- Mass Transit Management: A Handbook for Small Cities Part 3 Operations, U.S. Department of Transportation, Technology Sharing: DOT-T-88-11, Third Edition Revised, February 1988.
- Small Transit System Management Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-86-32, December 1985.
- Bus Fleet Management Techniques Guide, U.S. Department of Transportation, Technology Sharing: DOT-I-86-06, August 1985.

Short Course Subject: Microcomputer Applications For
Managing the Maintenance of Transit
Vehicle Maintenance

Course Objectives:

-To present an overview of state-of-the art of microcomputer applications for vehicle maintenance functions for public transit agencies.

Target Group: Maintenance Managers/Supervisors

Topics:

- Vehicle Histories: Generic Software, Application Software.
- Maintenance Schedule: Generic Software, Application Software.
- Daily Servicing: Generic Software, Application Software.
- Vehicle Assignment: Generic Software, Application Software.
- Purchasing: Generic Software, Application Software.
- Oil Analysis: Generic Software, Application Software.
- Parts Inventory: Generic Software Application Software.
- Tire Inventory: Generic Software, Application Software.
- Fuel Inventory: Generic Software, Application Software.

References:

- Microcomputers in Transit: A Needs Assessment Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-86-07, April 1985.
- Microcomputers in Transit: A Software Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-84-47, July 1984.
- An Approach for Microcomputer Needs Analysis: Greater Portland Transit District, U.S. Department of Transportation, Technology Sharing: DOT-I-84-37, March 1984.

PRIORITY GROUP IV SHORT CURRICULUM OUTLINES:

Short Course Subject: Evaluating The Performance of Transit Systems

Course Objectives:

- To provide an understanding of the purpose and elements of an effective performance evaluation management information system for small and medium-size transit agencies.
- To provide sufficient information to enable course participants to implement a performance evaluation management information system in small and medium-size transit agencies.

Target Group: Chief Executive Officers, Financial Managers, Vehicle Operations Managers, Maintenance Managers

Topics:

- Establishing Performance Goals and Objectives: Management Performance, Financial Performance, Service Performance, Maintenance Performance.
- Selecting Functions to Evaluate and Evaluation Indicators: Management, Financial, Service, Maintenance.
- Data Collection.
- Calculation of Indicators.
- Analyzing and Interpreting Performance Indicators.
- Taking Corrective Actions.
- Monitoring.

References:

- Rural Public Transportation Performance Evaluation Guide, U.S. Department of Transportation, Technology Sharing: DOT-I-83-31, November 1982.
- Handbook for Management Performance Audits, U.S. Department of Transportation, Technology Sharing: DOT-T-88-21, Second Edition Revised, July 1988.
- Statewide Transit Evaluation in Michigan, U.S. Department of Transportation, Technology Sharing (SSTP): DOT-I-81-87, July 1981.
- Prototype Bus Service Evaluation System, U.S. Department of Transportation: UMTA-VA-09-7001-81-1, April 1981.
- Transit System Performance Audit Guide, Vols. I, II, Peat, Marwich, Mitchell and Company, Metropolitan Transportation Commission, Berkely, CA, March 1979.
- Handbook for a Transportation Management Review, U.S. Department of Transportation, Technology Sharing: DOT-I-87-18, October 1982.

- Transit System Performance Evaluation and Service Change Manual, U.S. Department of Transportation, Technology Sharing (SSTP): DOT-I-84-41, February 1981.
- Bus Service Evaluation Methods: A Review, U.S. Department of Transportation, Technology Sharing (SSTP): DOT-I-84-49, November 1984.
- Techniques for Analyzing the Performance of Rural Transit Systems: Performance Indicators and Policy Evaluation in Rural Transit, Vol. II, U.S. Department of Transportation: DOT-RSPD-DPB-5080-24, October 1980.
- Bus Service Evaluation Methods: A Review, U.S. Department of Transportation, Technology Sharing (SSTP): DOT-I-84-49, November 1984.
- Mass Transit Management: A Handbook for Small Cities Part 3: Operations, U.S. Department of Transportation, Technology Sharing: DOT-T-88-12, Third Edition Revised, February 1988.
- How Effective Are Your Community Services, International City Management Association, Washington, DC, 1992.

Short Course Subject: Planning And Implementing Micro-Computer Systems In Public Transit Agencies

Course Objectives:

- To provide a general understanding of the potential for microcomputer applications in small and medium-size transit agencies transit operating agencies.
- To present a methodology for the assessment of microcomputer needs and the implementation of a microcomputer system in small and medium-size transit agencies.

Target Group: Chief Executive Officers, Financial Managers, Personnel Managers, Vehicle Operations Managers, Maintenance Managers

Topics:

- Components of The Microcomputer System: Software, Hardware, Operating System.
- Microcomputer Software: Generic Programs (Word Processing, Spreadsheet, Data Base Management), Application Program.

- Microcomputer Needs Assessment: Potential Microcomputer Applications (Financial, Operations, Maintenance, Service Planning, Scheduling, Administration, Personnel), Considerations for Selecting Tasks to be Computerized (Time-Consuming Calculations, Repetitious Tasks, Improved Organization of Information, Time Savings, Increased Flexibility, Potential for added Information, Staff Capabilities).
- Generic and Application Software Available for Transit Applications.
- Implementing The Microcomputer System: Software Selection (Software Evaluation Criteria), Hardware Selection (Hardware Evaluation Criteria), Procurement (Guidelines for RPP for Direct Purchase, Guidelines for RFP for Turnkey Purchase), Staff Training, Technical Assistance.

References:

- Commercial Software Applications for Paratransit, U.S. Department of Transportation, Technology Sharing: DOT-I-84-51, July 1984.
- Microcomputers in Transit: A Needs Assessment Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-86-07, April 1985.
- Microcomputers in Transit: A Software Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-84-47, July 1984.
- Microcomputers in Transit: A Hardware Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-86-46, July 1984.
- Microcomputers in Transportation: A Review of Accounting Software for Transit, U.S. Department of Transportation, Technology Sharing, February 1986.
- Microcomputers in Transportation: Software and Source Book, U.S. Department of Transportation, Technology Sharing, February 1986.
- Microcomputers in Transportation: Transit Inventory Systems Case Study, U.S. Department of Transportation, Technology Sharing, August 1985.
- Use of Microcomputers at North County Transit District, U.S. Department of Transportation, Technology Sharing: DOT-I-5-14, June 1984.
- An Approach for Microcomputer Needs Analysis: Greater Portland Transit District, U.S. Department of Transportation, Technology Sharing: DOT-I-84-37, March 1984.

Short Course Subject: Orientation For Transit Policy Board Members

Course Objectives:

- To provide public transit Policy Board Members with an understanding of the general role and mission of public transportation and the nature of the public policy/decision-making environment within which it functions.
- To provide public transit Policy Board Members with an understanding of their role in the functioning of the public transit agency.
- To provide public transit Policy Board Members with an understanding of the skills which will enable them to more effectively carryout their duties.

Target Group: Transit Agency Board Members

Topics:

- Legal Basis for the Transit Agency.
- Mission of the Transit Agency.
- By-laws of the Transit Agency Board.
- Relationship to Other Governmental Agencies: Mandated Reporting/Coordinating Relationships, Voluntary Reporting/Coordinating Relationships.
- Sources of Funding.
- Service Provided.
- Organizational Structure of the Transit Agency.
- The Role of Transit Boards: Policy vs. Administration, Managing the Administrator's Tenure (Selection/Hiring, Evaluating, Terminating).
- Duties/Responsibilities of Board Officers and Members.
- Liability of Board Members: Risk Management, Insurance, Protection Through State Statutes and Municipal Ordinances.
- Formal Meeting Procedures: Parliamentary Procedure/Roberts Rules of Order, Quorum Order of Business (Call to Order, Roll Call, Minutes, Officers' Reports, Committee Reports, Special Business, Unfinished Business, New Business, Announcements, Adjournment), Motions (Types Presenting, Seconding, Debating, Voting).
- Designing and Managing Effective Meetings: Common Meeting Problems (Process, Roles of Participants, Decision-Making, Meeting Environment, Preparation and Follow-up), Purpose and Types of Meetings (Providing Information, Receiving Information, Problem Solving, Decision-Making), Methods and Techiques for Types of Meetings, Roles of Meeting Participants (Chairperson, Recorder, Facilitator, Group Member).

References:

- Handbook for Transit Board Members, American Public Transit Association, Washington, DC, 1991.
- Public Transit in Michigan: Handbook for Governing Boards, Michigan Dept. of Transportation, Bus Transit Division, Lansing, MI, 1990.
- A Manager's Guide to Survival (Role of the Board and Management, etc.) UMTA/RTAP National Resource Center, Washington, DC, 1989.
- Comprehensive Rural Policies (Board Policies and By-Laws, General Operating Procedures, etc.), Isabella County Transportation Commission, Mt. Pleasant, MI, 1990.
- Elected Officials Handbook: Practical Aids for Busy Local Officials, Second Edition, Vols. I & II, International City Management Association, 1983.
- The Conduct of Meetings, G.H. Stanford, Oxford University Press, Toronto, 1968.
- Leadership and Dynamic Group Action, G.M. Beal, J.M. Bohlen, and J.N. Raudabaugh, The Iowa State University Press, 1969.
- Business Meetings That Work, B.Y. Auger, Coles Publishing Co. Ltd., Toronto, 1976.
- The A-B-C's of Parliamentary Procedure, Channing L. Bete Co., Inc., South Deerfield, MA, 1982.

Short Course Subject: Microcomputer Applications For Transit Vehicle Operations

Course Objectives:

- To present an overview of state-of-the art microcomputer applications for vehicle operations functions for small and medium-size transit agencies.

Target Group: Vehicle Operations Managers, Dispatchers

Topics:

- Bus Stop Inventory: Generic Software, Application Software.
- Scheduling: Generic Software, Application Software.
- Operating Documents: Generic Software, Application Software.
- Time Keeping: Generic Software, Application Software.

References:

- Microcomputers in Transit: A Needs Assessment Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-86-07, April 1985.

- Microcomputers in Transit: A Software Handbook, U.S. Department of Transportation, Technology Sharing: DOT-I-84-87, July 1984.
- An Approach for Microcomputer Needs Analysis: Greater Portland Transit District, US Department of Transportation, Technology Sharing: DOT-I-84-37, March 1984.