

FHWA Training Course on Managing Rural and Small Urban Public Transportation Programs

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The contents of a two-day training course sponsored by the Federal Highway Administration for state and regional managers of rural transportation programs are summarized. Sessions in the course include an introduction to rural transportation, key issues, state management plans, coordination, funding, technical assistance, and monitoring. Instructions for access to the course are included.

In the past few years, it has been recognized that the transportation needs of a significant number of persons in rural and small urban areas are not being met. One of the recent efforts to respond to this need was the creation, in 1978, of the Nonurbanized Area Public Transportation Program as Section 18 of the Urban Mass Transportation Act of 1964, as amended. This program provides capital and operating assistance for public transportation in nonurbanized areas. The program is administered jointly by the Federal Highway Administration (FHWA) and the Urban Mass Transportation Administration (UMTA). Although approval authority for individual projects is currently vested in the FHWA division administrator, states are highly involved in the administration of the program and in providing technical assistance to local areas.

In view of the varying degrees of familiarity and expertise with rural public transportation among FHWA field offices and the states, FHWA and the National Highway Institute of the U.S. Department of Transportation contracted with Ecosometrics, Inc., to provide a two-day course (1) designed to assist FHWA personnel in managing rural transportation efforts and in administering the Section 18 program. [There is also a three-day course designed to provide assistance to the managers of rural transportation projects (2)]. In view of the need to coordinate Section 18 projects with human-service-agency transportation on the local level, the course is also intended to assist state human-service-agency personnel in their coordination with the Section 18 program. This paper summarizes the course.

It is intended that, at the end of the course, participants will be able to better administer the funds used under the Section 18 program. The skills that the course is intended to teach include

1. Preparation of a state management plan for Section 18 and the evaluation of a state's performance under the plan;
2. Development of guidelines for local applicants in preparing Section 18 applications that are within the capabilities of the prospective applicants;
3. Development of a fair and equitable program of projects;
4. Development of procedures for reviewing and evaluating applications in an expeditious manner for capital, administrative, and operating assistance;
5. Development of procedures for the coordination of the Section 18 program on the state and local levels;
6. Development of a process to encourage private operators to provide public transportation services in nonurbanized areas;
7. Management of contracts with local transportation providers;
8. Development of procedures to monitor and

evaluate whether the implementation of Section 18 has achieved federal, state, and local goals (including the development of procedures to initiate required corrective actions); and

9. Development of a program to provide assistance to local providers.

The course is designed around seven sessions that address the course objectives:

1. Introduction to managing rural and small urban public transportation programs,
2. Problems and key issues faced by state personnel,
3. State management plans,
4. Coordination,
5. Funding considerations,
6. Assistance and technical support to local projects, and
7. Monitoring and evaluation.

Each session is structured so that course participants are presented first with an understanding of how the material relates to their responsibilities as program managers. A fairly brief technical presentation is made by the trainers on the subject area for that session. The trainers then encourage discussion by the participants so that information and experiences can be shared. Finally, the trainers draw the session to a close by presenting a brief review of what was discussed and how it relates to previous and upcoming topics.

Each student is given a workbook that covers material discussed during the course. The workbook is generally designed to follow the sequence of the course. Chapters correspond to the sessions in the course. The workbook is also intended to stand alone as a significant reference describing the management of rural transportation through Section 18 and other resources. The workbook has been produced in a looseleaf format so that each individual can easily update the material from time to time.

Each chapter in the workbook contains a synopsis, a list of objectives, a chapter outline, the chapter text, and references to material in the chapter. Important exhibits follow most of the chapters. The workbook also contains a bibliography of key references and other references plus glossaries of terms, agencies and programs, and acronyms. The following sections of this paper summarize the contents of each section of the course.

INTRODUCTION TO SECTION 18: PHILOSOPHY AND FUNDING

The Section 18 program offers federal financial assistance for public transportation in rural and small urban areas. The states administer the formula-grant program by establishing a state program of projects. The goals of the program are to "enhance access of people in nonurbanized areas for purposes such as health care, shopping, education, recreation, public services, and employment by encouraging the maintenance, development, improvement, and use of passenger transportation systems." The program was authorized for a four-year period (FY 1979 through FY 1982).

The total funding for Section 18 is small in comparison with the overall funding needed to maintain and develop viable public transportation systems in rural and small urban areas. Because of the relatively low level of funding, major themes of the program include coordination with other funding sources by or with the Section 18 projects and simplicity and flexibility in administering the program.

The original authorizations for the Section 18 program were as follows: FY 1979, \$90 million; FY 1980, \$100 million; FY 1981, \$110 million; and FY 1982, \$120 million. Of these funds, \$75 million for FY 1979, \$85 million for FY 1980, and \$12.5 million for FY 1981 have been appropriated. Approximately \$8 million of the FY 1979 funds and \$41 million of the FY 1980 funds have been obligated by the states. By the end of December 1980, more than 600 projects had been approved, including more than 500 for capital and operating expenses. By April 1981, 43 states had initiated capital and operating assistance projects.

Funds may be used for capital and operating assistance by state agencies, nonprofit organizations, and public transportation authorities operating services. For capital and administrative expenses, the federal share is 80 percent and the local share is 20 percent; for net operating expenses, as much as 50 percent is supplied by the federal government. As much as 15 percent of the state apportionment may be used for state administrative and technical assistance activities (the federal share for these funds is 100 percent).

PROBLEMS AND KEY ISSUES FACED BY STATE PERSONNEL

The following are some (but not all) of the more important issues and problems facing state and federal administrators of the Section 18 programs in 1981. Most of these issues and problems are related to local implementation concerns that the state or federal administration may have to address when dealing with local projects. Additional issues and problems are identified for discussion by the participants at each course presentation. The issues and problems are not presented in any particular list of priority. The resolution of these issues depends on the active involvement and participation of state personnel. One of the objectives of this session is to make FHWA aware of current problem areas in the program. This is accomplished through a round-table discussion with the participants.

Local implementing agencies, whether an individual transportation system or a unit of government, usually have a number of concerns in implementing a project funded through Section 18. Specific common concerns include the following: (a) funding for the Section 18 program, (b) availability of other funding, (c) coordinating efforts of various programs, (d) general-public versus special-client transportation, (e) cash-flow problems, (f) insurance, (g) Section 13c provisions, (h) Section 504 accessibility requirements, (i) carrier certification requirements, (j) use of funds from multiple sources, (k) private-intercity bus operators, (l) vehicle reliability, (m) vehicle maintenance, and (n) depreciation and amortization of vehicles and equipment.

Local concerns affect the administration of the Section 18 program at the state level. The state will probably be called on to respond directly to these local concerns in two ways:

1. As a response to specific requests for technical assistance and

2. In its role as liaison between the local projects and the FHWA and UMTA regional offices.

In addition, a state's awareness of these local concerns may influence its establishment, as well as its use, of certain project selection criteria, particularly those related to fair and equitable distribution and coordination. These concerns may also influence the decision of a project as to whether or not to apply for Section 18 funds.

STATE MANAGEMENT PLANS

The concept of each state preparing a management plan for how it will administer its Section 18 program was first introduced to the states in the December 14, 1978, letter from the U.S. Department of Transportation to the governors of each state announcing the program. That letter stated the following:

It will be the responsibility of this State agency to develop a State Management Plan in accordance with regulations to be published at a later date. This plan will set forth the State's method for administering this program and will be approved by FHWA and UMTA....

Although final regulations governing this program will not be published for a number of months, we feel it is important to make assistance available to local projects as soon as possible. In the interim period, until a State Management Plan is approved, the State will be allowed to operate under interim procedures and submit to the FHWA Division Office a minimal Interim Plan and a program of projects for approval.

To date, most states have prepared interim state management plans in accordance with this requirement. Once the final regulations are published, the states will be preparing and submitting final state management plans.

The regulations also require each state to prepare and submit an annual program of projects. Unlike the state management plan, which is submitted once and updated as needed, the program of projects is submitted annually.

Other submissions that FHWA requires from the states are the project applications. These are usually prepared by those who will receive the funds at the local level. All project applications must be submitted to FHWA for approval. As part of the project application procedure, each state must collect and maintain the project supporting information described in the regulation and submit this information with project applications.

The basic components of a state management plan are

1. Program goals and objectives;
2. Program management responsibilities at the state level;
3. Program for distribution of grant funds;
4. Program for coordination;
5. State program characteristics, including (a) eligible applicants, (b) local match and state financial participation, (c) project selection criteria, (d) planning requirements, and (e) process for encouraging private enterprise;
6. Contract administration and monitoring, including (a) procedures for monitoring compliance with federal regulations, (b) purchasing procedures, (c) local recordkeeping and reporting requirements, (d) local financial audit requirements, and (e) insurance requirements; and

7. Project application procedures, including (a) application procedures (when submitted, to whom, when to expect response, etc.), (b) information required in application, and (c) standard forms and agreements.

COORDINATION

The legislation that created the Section 18 program calls for the "maximum feasible coordination of public transportation services" in rural areas. Only a few of the great variety of earlier coordinated transportation operations achieved their initial objectives due to unrealistically optimistic ideas about what was "feasible". Therefore, it is crucial that efforts to coordinate begin with an extremely clear understanding of alternative coordination objectives, coordination strategies that are particularly applicable to chosen objectives, and the probable costs and benefits of specific actions.

What Coordination Is

The coordination of transportation systems is a process in which two or more agencies interact to jointly accomplish their transportation objectives. Coordination is presumed to be able to increase efficiency and productivity. Proponents of coordinated transportation systems contend that they can rationalize any community's transportation network while eliminating waste and providing high-quality service, all of this despite budget cuts (3,4). Critics of coordination charge that it is being oversold as a panacea to "reconcile the irreconcilable, harmonize competing and wholly divergent interests, overcome irrationalities in our government structure, and make hard policy choices to which no one will dissent" (5).

Why Coordination Efforts Emerged

In many rural communities, a variety of public and private agencies and organizations provide transportation services to the elderly and the handicapped. Many of these organizations provide transportation services that are limited to their specific clientele alone. These services emerged when it became evident to organizations that their clients had no other means of getting to the social services they needed. Suddenly, it seemed that every human service organization had its own transportation system.

At the same time that we became increasingly aware of the need for special transportation services, two other factors also became more clear. The first was the need for general-purpose transportation services for the general public in rural communities. The second was the increasing cost of meeting these demands. Accordingly, service providers (and client groups and politicians as well) have been concerned with how to make existing transportation services more efficient and effective. A closer look at existing systems has shown that many of these systems have been operating without regard to certain principles of economic efficiency and that some of these principles may be achieved through coordination. During the past five years, the concept of using coordination as a means of improving expanding services has gained wide acceptance. Coordination of social service transportation services is a strategy that has substantial intuitive appeal; thus, numerous coordination attempts have begun with very high expectations.

A great deal of investigative research has been done on coordinated systems (6). Based on this research, both negative and positive observations can be made. For example, on the positive side,

1. Coordination often results in the filling of service gaps in a community or geographic area.

2. Coordination can reduce duplication and overlap involved in social-service-agency transportation services.

3. Cost savings can accrue to some participating agencies in special forms of coordinated transportation service.

On the negative side, it is often more costly, more difficult, and more time-consuming to achieve coordination than most persons initially perceive. Although achieving coordination may appear to be a relatively straightforward task, it most definitely is not. The monetary and nonmonetary costs of coordination must be weighed against the expected benefits (which should be quantified in detail) in order to determine how much coordination is appropriate in a given situation. Different levels of coordination are appropriate for different situations. Coordination is a useful concept in some, but not all, instances. In order for the potential productivity and efficiency improvements in transportation operations to be realized from coordination, significant planning and administrative expenditures are necessary. Because of certain fiscal structures, volunteer contributions, or special service requirements, some agencies will never benefit from coordinating their operations. Coordination is only one of the many steps along the way to achieve a broader goal--improving mobility.

FUNDING

Financial considerations are often the most significant obstacle to implementing successful rural transit systems. Over the past two decades, it has become increasingly rare for even the largest urban transit operations to cover operating costs out of the farebox, to say nothing of meeting their capital needs. Although the Section 18 program provides the first stable source of funding at the federal level for rural transit capital, operating, and administrative expenses, it is by no means sufficient to provide all of the transit funding needed in all rural areas.

Sources of Funds

Anyone who has dealt previously with rural transportation problems knows that financial barriers are the most significant obstacle to implementing rural systems. There are a number of significant sources of revenue for a Section 18 operator to consider:

1. Fares and other payments (for example, cooperative membership fees) from passengers,
2. Contracts with nontransportation firms and agencies whose operations require them to provide some transportation services,
3. Nontransportation revenue or auxiliary revenue (such as advertising or sales from maintenance of services),
4. Taxes levied by the transit system,
5. Bonds issued by the transit system,
6. Contributed services (in kind and voluntary contributions), and
7. Direct subsidies or grants from local, state, or federal sources.

In addition to these revenue sources directly available to a transit operator, other funding can possibly be obtained through the public or government body that subsidizes the operator. These include local taxes levied for the transit system and bonds issued by the public bodies for the transit system.

Table 1. Technical assistance techniques useful at various stages of project development.

Technique	Stage		
	Project Planning	Initial Operations	Ongoing Management
Hot lines			*
Public meetings and forums	*	*	*
Visits to local projects		*	*
Case studies of other projects	*		
Informational clearinghouse among projects	*	*	*
Informal contact between state and local projects		*	*
Information sheets on "priority subjects" by state, federal, regional, or divisional office	*	*	*
On-the-job training		*	*
Workshops, seminars, conferences		*	*
Papers, manuals, studies	*	*	*
Reports and regulations	*	*	*
Audio visual programs		*	*
Speaker's bureau			*
Lending library			*
Tours of existing projects	*	*	
Lists of funding sources	*	*	
Worksheets		*	*
Sample applications and forms	*		
Explanations of "assurances"	*	*	*
Standardized administrative material and documents		*	*
Models and formulas (e.g., demand model, unmet needs, local match formulas)	*	*	*
Catalogs of technical assistance resources	*	*	*

Other Funding Issues

Because funding is such a critical consideration, issues other than the sources of funds need to be treated in depth. The training course also examines the following subjects:

1. Saving money and budget stretching,
2. Cash flow,
3. Options for coordinating funding,
4. Local organizational structures that affect funding, and
5. Matching Section 18 funds.

ASSISTANCE AND TECHNICAL SUPPORT TO LOCAL PROJECTS

Effective communication and interaction between the states and their projects will probably prove to be the key to success in the Section 18 program. Technical assistance is a key element in this communication and interaction. It is useful from both the state and local perspectives. It helps to ensure that the state gets projects that will help in achieving the goals of the state plan; it also improves local projects' chances of success. A technical assistance plan is a required part of a state management plan and a portion of a state's Section 18 allocation can be used to provide that assistance.

The session on assistance and technical support to local projects discusses ways of understanding and organizing state interaction with local projects and focuses on technical assistance tailored to meet the specific needs of a project at various stages of its development: project planning, initial operations, and ongoing project management. Techniques recommended specifically for the three stages are given in Table 1. Lists of current transportation assistance materials available from specific states are included in this session.

This session also includes sections on determining appropriate kinds of public transit and motivating private operators. Exhibits of selected sources of information and examples of various assistance techniques are included in the workbook.

MONITORING AND EVALUATION

Evaluation is a method of determining how well you are doing. It serves two purposes: to save money and to avoid problems. Evaluation determines the appropriateness of current behavior and suggests directions for future actions.

Specific purposes of an evaluation of a rural transportation system are

1. To better meet the needs of people and the objectives of the system,
2. To control the costs of service,
3. To support and justify charges to social service agencies and others that have contracts for service,
4. To provide data for public information purposes, and
5. To provide information that can be shared with other agencies involved in similar projects.

Evaluation implies a commitment to change and improve the system being evaluated.

Evaluation should produce hard data that are useful to the local agency; for example, what kind of vehicles can provide the best service under given conditions? Evaluative data often must be collected for other purposes as well. For example, an agency that asks for federal funding is obligated to provide information to the funding agency. But the funding agency should not ask for information that will not also be useful to the local agency and should return information collected to the local agencies.

A system should not be evaluated against all other systems because all systems are not sufficiently similar in objectives or operations for comparisons. However, some systems are sufficiently similar for useful comparisons. Peer-group analysis involves evaluating a project in comparison with others that operate under similar conditions.

Specific Performance Measures

No agreement currently exists on precisely how to measure and assess the performance of transportation systems. To date, it has been agreed that a certain small number of descriptors are probably useful (although different ones are better for different uses) and that no one alone is a sufficiently global indicator of performance. Multiple measures are mandatory. A complete evaluation would include assessments of efficiency and effectiveness. A complete evaluation would include at least the following factors:

1. Cost per passenger trip (one-way)--Total system cost (all operating expenses plus administrative costs plus capital costs on a depreciation schedule) divided by the number of passenger trips (costs and trips must be recorded over the same period);
2. Cost per vehicle mile--Total system costs divided by the total distance traveled by all vehicles in the system;
3. Cost per vehicle hour--Total system costs divided by the sum, for all vehicles, of the number of hours that each vehicle is operated;
4. Load factor--The sum of the distances for all trips by all passengers divided by the sum of the

Table 2. Probable ranges for operating statistics for rural transportation systems.

Measure	Low ^a	High ^b
Efficiency		
Cost ^c (\$)		
Per passenger trip (one-way)	1.82	6.17
Per vehicle mile	0.45	1.05
Per vehicle hour	7.50	19.00
Load factor (%)	6	35
Operating ratio (revenues ÷ operating and administrative costs)	0.25	1.0
Effectiveness		
Passengers per vehicle mile	0.12	0.3
Passengers per vehicle hour	2.2	6.0
Monthly passengers per service area population	0.2	1.2
Other descriptors		
One-way passengers per month	1000	8000
Monthly miles per vehicle	2000	7000

Note: The data are 1981 estimates based on tabulations by Ecosometrics, Inc., for 107 operational Section 147 demonstration projects and on procedures outlined in Appendix E of the report by Burkhardt, Knapp, and Ramsdell (9).

^aOnly 20 percent of all systems referenced have lower values.

^bOnly 20 percent of all systems referenced have higher values (with the exception of the statistic for operating ratio).

^cOperating, capital, and administrative costs included.

seat miles provided by all vehicles (seat miles are the product of the number of passenger seats times the miles the vehicle traveled);

5. Operating ratio--Total system costs divided by total system revenues;

6. Passengers per vehicle mile--The number of passenger trips divided by the number of vehicle miles provided by all vehicles;

7. Passengers per vehicle hour--The number of passenger trips divided by the sum of the hours each vehicle is operated; and

8. Annual passengers per service-area population--The number of passenger trips taken during a year divided by the population of the service area.

The first five factors measure efficiency; the last three measure effectiveness. Other indicators (for example, cost per passenger mile and deadhead factor) have been proposed for transit systems (8) and may be useful for some systems to compare their performance with respect to special situations or objectives (for example, cost per passenger mile for elderly passengers). However, the eight measures listed above are probably the most appropriate for rural transit systems in that they can be readily collected, they are useful for comparisons, and they indicate performance and problem areas (but not solutions). These measures are usually, but not always, available at the same time. When they are available, one can be sure of getting a reasonably accurate picture of the system being analyzed. Probable ranges of efficiency and effectiveness statistics for rural transportation systems are given in Table 2.

A truly impressive performance monitoring system is that operated by the Michigan Department of Transportation (DOT) (9). By providing current and comprehensive figures, the Michigan DOT provides very useful assistance to local operators. The system is designed not to compare local operations with each other but to focus on changes in the performance of individual systems over time.

General Actions or Responses Resulting from Evaluation

What a program does with the results of the efficiency and effectiveness measures collected in its evaluation process depends on many factors. The amount of funds available to make changes, the level of funds already invested, and community political support all affect the manager's decision about what

action to take. There are four general categories of possible action that can be taken: (a) preserve, (b) enhance, (c) alter, or (d) terminate the local project's current service. Program administrators can use various methods to help project managers take those actions successfully. The specific strategies for making changes are discussed in the course.

ACCESS TO THE COURSE

The training course is being provided by FHWA and the National Highway Institute through the auspices of the regional FHWA offices. Interested parties may contact Perry Davison of the Rural and Small Urban Public Transportation Branch of FHWA (telephone 202-426-0153) or Donna Stickley of the National Highway Institute (telephone 202-426-9141).

Presentations of the course have been given in FHWA regions 1, 3, 4, 5, 7, and 9. Attendance is by invitation only.

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